



wwPDB EM Validation Summary Report ⓘ

Nov 9, 2022 – 07:41 AM EST

PDB ID : 6PNJ
EMDB ID : EMD-20397
Title : Structure of Photosystem I Acclimated to Far-red Light
Authors : Gisriel, C.J.; Shen, G.; Kurashov, V.; Ho, M.; Zhang, S.; Williams, D.; Golbeck, J.H.; Fromme, P.; Bryant, D.A.
Deposited on : 2019-07-02
Resolution : 3.20 Å(reported)

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

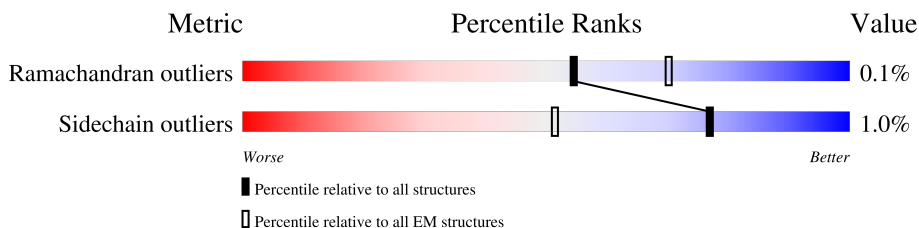
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	788	7% 94% 5%
1	G	788	7% 94% 5%
1	a	788	7% 94% 5%
2	B	741	5% 99% .
2	H	741	5% 99% .
2	b	741	5% 99% .
3	C	81	7% 98% ..
3	N	81	6% 98% ..
3	c	81	7% 98% ..

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
4	D	159	19% 86% 13%
4	O	159	19% 86% 13%
4	d	159	19% 86% 13%
5	E	72	31% 86% 14%
5	P	72	29% 86% 14%
5	e	72	31% 86% 14%
6	F	159	49% 81% 15%
6	Q	159	48% 81% 15%
6	f	159	47% 81% 15%
7	I	67	6% 63% 37%
7	R	67	6% 63% 37%
7	i	67	6% 63% 37%
8	J	48	33% 83% 6% 10%
8	S	48	38% 83% 6% 10%
8	j	48	42% 83% 6% 10%
9	K	39	85% 87% 13%
9	T	39	85% 87% 13%
9	k	39	85% 87% 13%
10	L	174	6% 88% 10%
10	U	174	6% 88% 10%
10	l	174	6% 88% 10%
11	M	31	6% 100%
11	V	31	6% 100%
11	m	31	6% 100%
12	W	101	12% 29% 71%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
12	X	101	
12	x	101	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
13	CL0	A	1011	X	-	-	-
13	CL0	G	1011	X	-	-	-
13	CL0	a	1011	X	-	-	-
14	CLA	A	1012	X	-	-	-
14	CLA	A	1013	X	-	-	-
14	CLA	A	1101	X	-	-	-
14	CLA	A	1102	X	-	-	-
14	CLA	A	1103	X	-	-	-
14	CLA	A	1104	X	-	-	-
14	CLA	A	1105	X	-	-	-
14	CLA	A	1106	X	-	-	-
14	CLA	A	1107	X	-	-	-
14	CLA	A	1108	X	-	-	-
14	CLA	A	1109	X	-	-	-
14	CLA	A	1110	X	-	-	-
14	CLA	A	1111	X	-	-	-
14	CLA	A	1112	X	-	-	-
14	CLA	A	1113	X	-	-	-
14	CLA	A	1114	X	-	-	-
14	CLA	A	1115	X	-	-	-
14	CLA	A	1116	X	-	-	-
14	CLA	A	1117	X	-	-	-
14	CLA	A	1118	X	-	-	-
14	CLA	A	1119	X	-	-	-
14	CLA	A	1122	X	-	-	-
14	CLA	A	1123	X	-	-	-
14	CLA	A	1124	X	-	-	-
14	CLA	A	1125	X	-	-	-
14	CLA	A	1126	X	-	-	-
14	CLA	A	1127	X	-	-	-
14	CLA	A	1128	X	-	-	-
14	CLA	A	1129	X	-	-	-
14	CLA	A	1130	X	-	-	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	A	1131	X	-	-	-
14	CLA	A	1132	X	-	-	-
14	CLA	A	1133	X	-	-	-
14	CLA	A	1135	X	-	-	-
14	CLA	A	1136	X	-	-	-
14	CLA	A	1137	X	-	-	-
14	CLA	A	1138	X	-	-	-
14	CLA	A	1139	X	-	-	-
14	CLA	A	1140	X	-	-	-
14	CLA	B	1021	X	-	-	-
14	CLA	B	1022	X	-	-	-
14	CLA	B	1023	X	-	-	-
14	CLA	B	1201	X	-	-	-
14	CLA	B	1202	X	-	-	-
14	CLA	B	1203	X	-	-	-
14	CLA	B	1204	X	-	-	-
14	CLA	B	1205	X	-	-	-
14	CLA	B	1206	X	-	-	-
14	CLA	B	1207	X	-	-	-
14	CLA	B	1208	X	-	-	-
14	CLA	B	1209	X	-	-	-
14	CLA	B	1210	X	-	-	-
14	CLA	B	1211	X	-	-	-
14	CLA	B	1212	X	-	-	-
14	CLA	B	1213	X	-	-	-
14	CLA	B	1214	X	-	-	-
14	CLA	B	1215	X	-	-	-
14	CLA	B	1216	X	-	-	-
14	CLA	B	1217	X	-	-	-
14	CLA	B	1218	X	-	-	-
14	CLA	B	1219	X	-	-	-
14	CLA	B	1220	X	-	-	-
14	CLA	B	1221	X	-	-	-
14	CLA	B	1222	X	-	-	-
14	CLA	B	1223	X	-	-	-
14	CLA	B	1224	X	-	-	-
14	CLA	B	1225	X	-	-	-
14	CLA	B	1226	X	-	-	-
14	CLA	B	1227	X	-	-	-
14	CLA	B	1228	X	-	-	-
14	CLA	B	1229	X	-	-	-
14	CLA	B	1231	X	-	-	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	B	1232	X	-	-	-
14	CLA	B	1233	X	-	-	-
14	CLA	B	1234	X	-	-	-
14	CLA	B	1235	X	-	-	-
14	CLA	B	1236	X	-	-	-
14	CLA	B	1238	X	-	-	-
14	CLA	B	1239	X	-	-	-
14	CLA	G	1012	X	-	-	-
14	CLA	G	1013	X	-	-	-
14	CLA	G	1101	X	-	-	-
14	CLA	G	1102	X	-	-	-
14	CLA	G	1103	X	-	-	-
14	CLA	G	1104	X	-	-	-
14	CLA	G	1105	X	-	-	-
14	CLA	G	1106	X	-	-	-
14	CLA	G	1107	X	-	-	-
14	CLA	G	1108	X	-	-	-
14	CLA	G	1109	X	-	-	-
14	CLA	G	1110	X	-	-	-
14	CLA	G	1111	X	-	-	-
14	CLA	G	1112	X	-	-	-
14	CLA	G	1113	X	-	-	-
14	CLA	G	1114	X	-	-	-
14	CLA	G	1115	X	-	-	-
14	CLA	G	1116	X	-	-	-
14	CLA	G	1117	X	-	-	-
14	CLA	G	1118	X	-	-	-
14	CLA	G	1119	X	-	-	-
14	CLA	G	1122	X	-	-	-
14	CLA	G	1123	X	-	-	-
14	CLA	G	1124	X	-	-	-
14	CLA	G	1125	X	-	-	-
14	CLA	G	1126	X	-	-	-
14	CLA	G	1127	X	-	-	-
14	CLA	G	1128	X	-	-	-
14	CLA	G	1129	X	-	-	-
14	CLA	G	1130	X	-	-	-
14	CLA	G	1131	X	-	-	-
14	CLA	G	1132	X	-	-	-
14	CLA	G	1133	X	-	-	-
14	CLA	G	1135	X	-	-	-
14	CLA	G	1136	X	-	-	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	G	1137	X	-	-	-
14	CLA	G	1138	X	-	-	-
14	CLA	G	1139	X	-	-	-
14	CLA	G	1140	X	-	-	-
14	CLA	H	1012	X	-	-	-
14	CLA	H	1021	X	-	-	-
14	CLA	H	1023	X	-	-	-
14	CLA	H	1201	X	-	-	-
14	CLA	H	1202	X	-	-	-
14	CLA	H	1203	X	-	-	-
14	CLA	H	1204	X	-	-	-
14	CLA	H	1205	X	-	-	-
14	CLA	H	1206	X	-	-	-
14	CLA	H	1207	X	-	-	-
14	CLA	H	1208	X	-	-	-
14	CLA	H	1209	X	-	-	-
14	CLA	H	1210	X	-	-	-
14	CLA	H	1211	X	-	-	-
14	CLA	H	1212	X	-	-	-
14	CLA	H	1213	X	-	-	-
14	CLA	H	1214	X	-	-	-
14	CLA	H	1215	X	-	-	-
14	CLA	H	1216	X	-	-	-
14	CLA	H	1217	X	-	-	-
14	CLA	H	1218	X	-	-	-
14	CLA	H	1219	X	-	-	-
14	CLA	H	1220	X	-	-	-
14	CLA	H	1221	X	-	-	-
14	CLA	H	1222	X	-	-	-
14	CLA	H	1223	X	-	-	-
14	CLA	H	1224	X	-	-	-
14	CLA	H	1225	X	-	-	-
14	CLA	H	1226	X	-	-	-
14	CLA	H	1227	X	-	-	-
14	CLA	H	1228	X	-	-	-
14	CLA	H	1229	X	-	-	-
14	CLA	H	1231	X	-	-	-
14	CLA	H	1232	X	-	-	-
14	CLA	H	1233	X	-	-	-
14	CLA	H	1234	X	-	-	-
14	CLA	H	1235	X	-	-	-
14	CLA	H	1236	X	-	-	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	H	1238	X	-	-	-
14	CLA	H	1239	X	-	-	-
14	CLA	K	1401	X	-	-	-
14	CLA	L	1501	X	-	-	-
14	CLA	L	1502	X	-	-	-
14	CLA	L	1503	X	-	-	-
14	CLA	T	1401	X	-	-	-
14	CLA	U	1501	X	-	-	-
14	CLA	U	1502	X	-	-	-
14	CLA	U	1503	X	-	-	-
14	CLA	W	1701	X	-	-	-
14	CLA	X	1701	X	-	-	-
14	CLA	a	1012	X	-	-	-
14	CLA	a	1013	X	-	-	-
14	CLA	a	1101	X	-	-	-
14	CLA	a	1102	X	-	-	-
14	CLA	a	1103	X	-	-	-
14	CLA	a	1104	X	-	-	-
14	CLA	a	1105	X	-	-	-
14	CLA	a	1106	X	-	-	-
14	CLA	a	1107	X	-	-	-
14	CLA	a	1108	X	-	-	-
14	CLA	a	1109	X	-	-	-
14	CLA	a	1110	X	-	-	-
14	CLA	a	1111	X	-	-	-
14	CLA	a	1112	X	-	-	-
14	CLA	a	1113	X	-	-	-
14	CLA	a	1114	X	-	-	-
14	CLA	a	1115	X	-	-	-
14	CLA	a	1116	X	-	-	-
14	CLA	a	1117	X	-	-	-
14	CLA	a	1118	X	-	-	-
14	CLA	a	1119	X	-	-	-
14	CLA	a	1122	X	-	-	-
14	CLA	a	1123	X	-	-	-
14	CLA	a	1124	X	-	-	-
14	CLA	a	1125	X	-	-	-
14	CLA	a	1126	X	-	-	-
14	CLA	a	1127	X	-	-	-
14	CLA	a	1128	X	-	-	-
14	CLA	a	1129	X	-	-	-
14	CLA	a	1130	X	-	-	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	a	1131	X	-	-	-
14	CLA	a	1132	X	-	-	-
14	CLA	a	1133	X	-	-	-
14	CLA	a	1135	X	-	-	-
14	CLA	a	1136	X	-	-	-
14	CLA	a	1137	X	-	-	-
14	CLA	a	1138	X	-	-	-
14	CLA	a	1139	X	-	-	-
14	CLA	a	1140	X	-	-	-
14	CLA	b	1021	X	-	-	-
14	CLA	b	1022	X	-	-	-
14	CLA	b	1023	X	-	-	-
14	CLA	b	1201	X	-	-	-
14	CLA	b	1202	X	-	-	-
14	CLA	b	1203	X	-	-	-
14	CLA	b	1204	X	-	-	-
14	CLA	b	1205	X	-	-	-
14	CLA	b	1206	X	-	-	-
14	CLA	b	1207	X	-	-	-
14	CLA	b	1208	X	-	-	-
14	CLA	b	1209	X	-	-	-
14	CLA	b	1210	X	-	-	-
14	CLA	b	1211	X	-	-	-
14	CLA	b	1212	X	-	-	-
14	CLA	b	1213	X	-	-	-
14	CLA	b	1214	X	-	-	-
14	CLA	b	1215	X	-	-	-
14	CLA	b	1216	X	-	-	-
14	CLA	b	1217	X	-	-	-
14	CLA	b	1218	X	-	-	-
14	CLA	b	1219	X	-	-	-
14	CLA	b	1220	X	-	-	-
14	CLA	b	1221	X	-	-	-
14	CLA	b	1222	X	-	-	-
14	CLA	b	1223	X	-	-	-
14	CLA	b	1224	X	-	-	-
14	CLA	b	1225	X	-	-	-
14	CLA	b	1226	X	-	-	-
14	CLA	b	1227	X	-	-	-
14	CLA	b	1228	X	-	-	-
14	CLA	b	1229	X	-	-	-
14	CLA	b	1231	X	-	-	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	b	1232	X	-	-	-
14	CLA	b	1233	X	-	-	-
14	CLA	b	1234	X	-	-	-
14	CLA	b	1235	X	-	-	-
14	CLA	b	1236	X	-	-	-
14	CLA	b	1238	X	-	-	-
14	CLA	b	1239	X	-	-	-
14	CLA	k	1401	X	-	-	-
14	CLA	l	1501	X	-	-	-
14	CLA	l	1502	X	-	-	-
14	CLA	l	1503	X	-	-	-
14	CLA	x	1701	X	-	-	-

2 Entry composition [i](#)

There are 22 unique types of molecules in this entry. The entry contains 71511 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Photosystem I P700 chlorophyll a apoprotein A1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	747	Total	C	N	O	S	0	0
			5906	3877	1008	988	33		
1	G	747	Total	C	N	O	S	0	0
			5906	3877	1008	988	33		
1	a	747	Total	C	N	O	S	0	0
			5906	3877	1008	988	33		

- Molecule 2 is a protein called Photosystem I P700 chlorophyll a apoprotein A2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	738	Total	C	N	O	S	0	0
			5909	3894	996	1001	18		
2	H	738	Total	C	N	O	S	0	0
			5909	3894	996	1001	18		
2	b	738	Total	C	N	O	S	0	0
			5909	3894	996	1001	18		

- Molecule 3 is a protein called Photosystem I iron-sulfur center.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	80	Total	C	N	O	S	0	0
			601	367	105	118	11		
3	N	80	Total	C	N	O	S	0	0
			601	367	105	118	11		
3	c	80	Total	C	N	O	S	0	0
			601	367	105	118	11		

- Molecule 4 is a protein called Photosystem I protein PsaD.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	139	Total	C	N	O	S	0	0
			1092	694	192	203	3		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
4	O	139	Total	C	N	O	S	0	0
			1092	694	192	203	3		
4	d	139	Total	C	N	O	S	0	0
			1092	694	192	203	3		

- Molecule 5 is a protein called Photosystem I reaction center subunit IV.

Mol	Chain	Residues	Atoms				AltConf	Trace
5	E	62	Total	C	N	O	0	0
			497	313	88	96		
5	P	62	Total	C	N	O	0	0
			497	313	88	96		
5	e	62	Total	C	N	O	0	0
			497	313	88	96		

- Molecule 6 is a protein called Photosystem I reaction center protein PsaF subunit III.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	135	Total	C	N	O	S	0	0
			1060	694	167	192	7		
6	Q	135	Total	C	N	O	S	0	0
			1060	694	167	192	7		
6	f	135	Total	C	N	O	S	0	0
			1060	694	167	192	7		

- Molecule 7 is a protein called photosystem I subunit VIII.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	I	42	Total	C	N	O	S	0	0
			350	246	48	54	2		
7	R	42	Total	C	N	O	S	0	0
			350	246	48	54	2		
7	i	42	Total	C	N	O	S	0	0
			350	246	48	54	2		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	1	MET	-	initiating methionine	UNP A0A2N6MR25
R	1	MET	-	initiating methionine	UNP A0A2N6MR25
i	1	MET	-	initiating methionine	UNP A0A2N6MR25

- Molecule 8 is a protein called Photosystem I reaction centre subunit IX / PsaJ.

Mol	Chain	Residues	Atoms				AltConf	Trace
8	J	43	Total	C	N	O	0	0
			344	238	51	55		
8	S	43	Total	C	N	O	0	0
			344	238	51	55		
8	j	43	Total	C	N	O	0	0
			344	238	51	55		

- Molecule 9 is a protein called photosystem I reaction center subunit PsaK.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	K	34	Total	C	N	O	S	0	0
			201	130	36	34	1		
9	T	34	Total	C	N	O	S	0	0
			201	130	36	34	1		
9	k	34	Total	C	N	O	S	0	0
			201	130	36	34	1		

- Molecule 10 is a protein called Photosystem I reaction center protein subunit XI.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	L	156	Total	C	N	O	S	0	0
			1172	760	198	209	5		
10	U	156	Total	C	N	O	S	0	0
			1172	760	198	209	5		
10	l	156	Total	C	N	O	S	0	0
			1172	760	198	209	5		

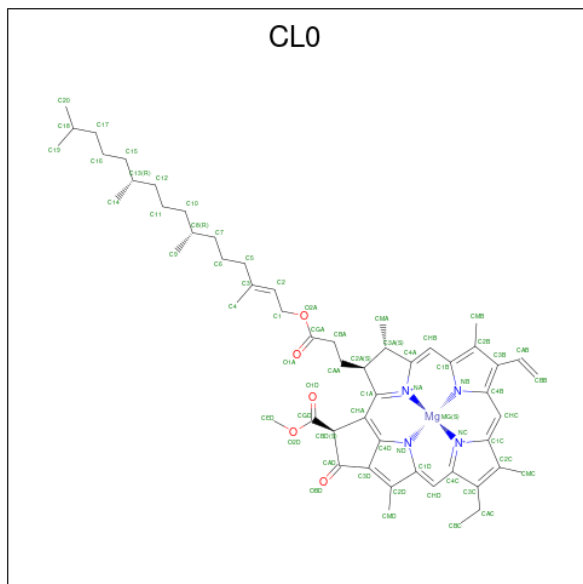
- Molecule 11 is a protein called Photosystem I reaction center subunit XII.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	M	31	Total	C	N	O	S	0	0
			245	164	37	43	1		
11	V	31	Total	C	N	O	S	0	0
			245	164	37	43	1		
11	m	31	Total	C	N	O	S	0	0
			245	164	37	43	1		

- Molecule 12 is a protein called Photosystem one PsaX.

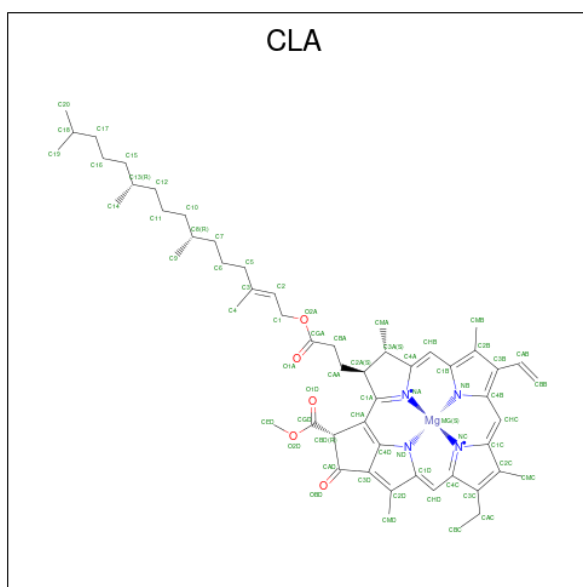
Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
12	W	29	Total 246	C 172	N 36	O 38	0	0
12	X	29	Total 246	C 172	N 36	O 38	0	0
12	x	29	Total 246	C 172	N 36	O 38	0	0

- Molecule 13 is CHLOROPHYLL A ISOMER (three-letter code: CL0) (formula: $C_{55}H_{72}MgN_4O_5$).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
13	A	1	Total 65	C 55	Mg 1	N 4	O 5	0
13	G	1	Total 65	C 55	Mg 1	N 4	O 5	0
13	a	1	Total 65	C 55	Mg 1	N 4	O 5	0

- Molecule 14 is CHLOROPHYLL A (three-letter code: CLA) (formula: $C_{55}H_{72}MgN_4O_5$).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0
14	A	1	2140	1750	39	156	195	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	A	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	B	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	G	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	H	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	K	1	Total 45	C 35	Mg 1	N 4	O 5	0
14	L	1	Total 185	C 155	Mg 3	N 12	O 15	0
14	L	1	Total 185	C 155	Mg 3	N 12	O 15	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	L	1	Total 185	C 155	Mg 3	N 12	O 15	0
14	T	1	Total 45	C 35	Mg 1	N 4	O 5	0
14	U	1	Total 185	C 155	Mg 3	N 12	O 15	0
14	U	1	Total 185	C 155	Mg 3	N 12	O 15	0
14	U	1	Total 185	C 155	Mg 3	N 12	O 15	0
14	W	1	Total 45	C 35	Mg 1	N 4	O 5	0
14	X	1	Total 45	C 35	Mg 1	N 4	O 5	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	a	1	Total 2140	C 1750	Mg 39	N 156	O 195	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0

Continued on next page...

Continued from previous page...

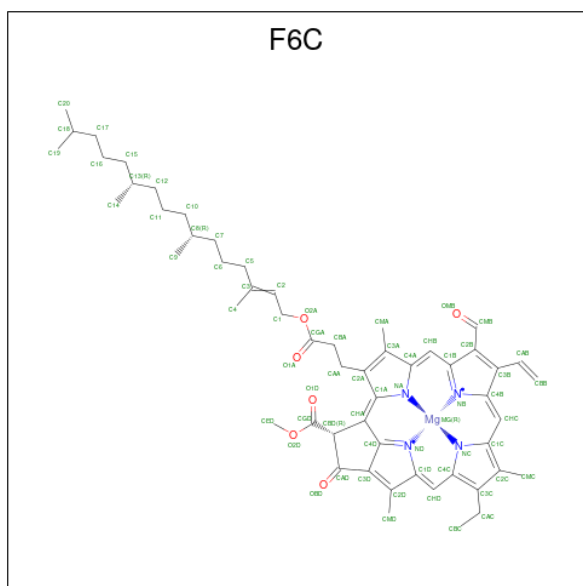
Mol	Chain	Residues	Atoms					AltConf
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	b	1	Total 2280	C 1880	Mg 40	N 160	O 200	0
14	k	1	Total 45	C 35	Mg 1	N 4	O 5	0
14	l	1	Total 185	C 155	Mg 3	N 12	O 15	0
14	l	1	Total 185	C 155	Mg 3	N 12	O 15	0
14	l	1	Total 185	C 155	Mg 3	N 12	O 15	0
14	x	1	Total 45	C 35	Mg 1	N 4	O 5	0

- Molecule 15 is Chlorophyll F (three-letter code: F6C) (formula: $C_{55}H_{68}MgN_4O_6$).



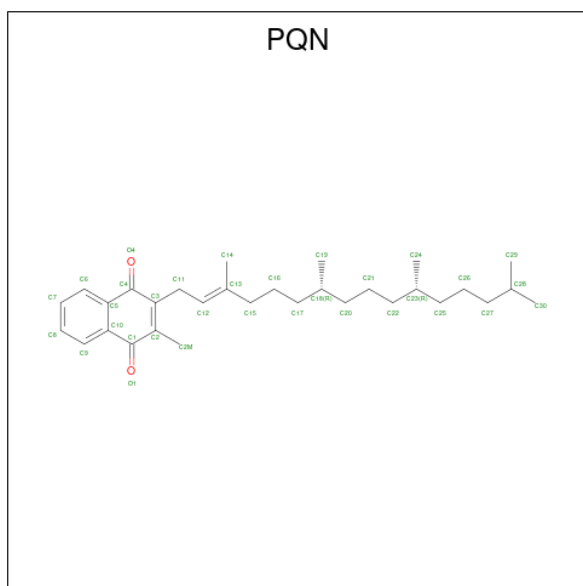
Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
15	A	1	Total 92	C 70	Mg 2	N 8	O 12	0
15	A	1	Total 92	C 70	Mg 2	N 8	O 12	0
15	B	1	Total 107	C 85	Mg 2	N 8	O 12	0
15	B	1	Total 107	C 85	Mg 2	N 8	O 12	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
15	G	1	Total	C	Mg	N	O	0
			92	70	2	8	12	
15	G	1	Total	C	Mg	N	O	0
			92	70	2	8	12	
15	H	1	Total	C	Mg	N	O	0
			107	85	2	8	12	
15	H	1	Total	C	Mg	N	O	0
			107	85	2	8	12	
15	a	1	Total	C	Mg	N	O	0
			92	70	2	8	12	
15	a	1	Total	C	Mg	N	O	0
			92	70	2	8	12	
15	b	1	Total	C	Mg	N	O	0
			107	85	2	8	12	
15	b	1	Total	C	Mg	N	O	0
			107	85	2	8	12	

- Molecule 16 is PHYLLOQUINONE (three-letter code: PQN) (formula: $C_{31}H_{46}O_2$).



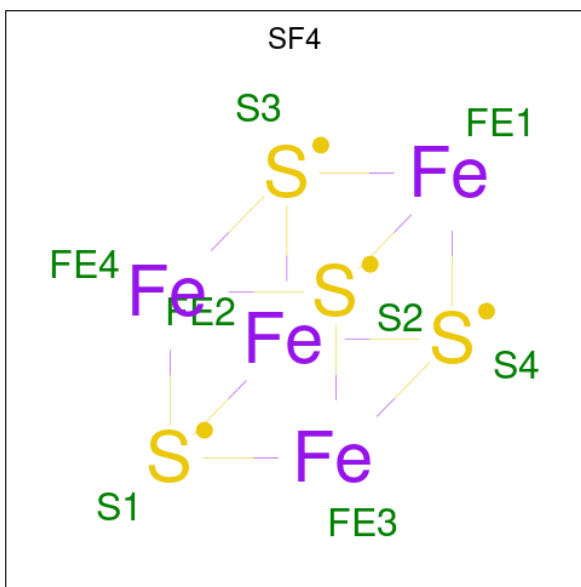
Mol	Chain	Residues	Atoms			AltConf
16	A	1	Total	C	O	0
			33	31	2	
16	B	1	Total	C	O	0
			33	31	2	
16	G	1	Total	C	O	0
			33	31	2	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
16	H	1	33	31	2	0
16	a	1	33	31	2	0
16	b	1	33	31	2	0

- Molecule 17 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe₄S₄).



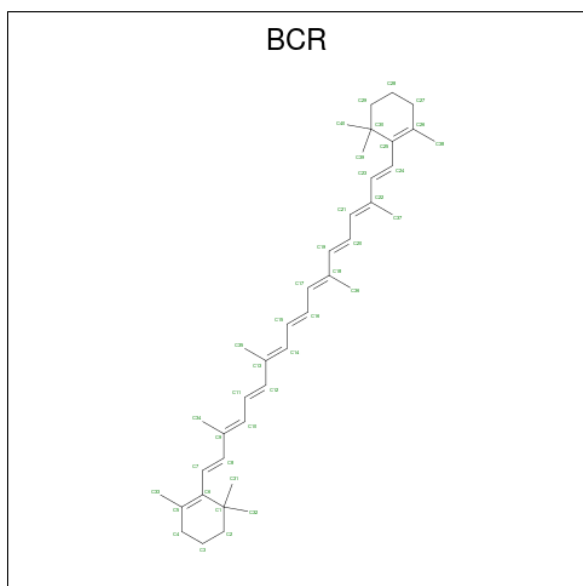
Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
17	A	1	8	4	4	0
17	C	1	16	8	8	0
17	C	1	16	8	8	0
17	G	1	8	4	4	0
17	N	1	16	8	8	0
17	N	1	16	8	8	0
17	a	1	8	4	4	0
17	c	1	16	8	8	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
17	c	1	16	8	8	0

- Molecule 18 is BETA-CAROTENE (three-letter code: BCR) (formula: $C_{40}H_{56}$).



Mol	Chain	Residues	Atoms		AltConf
18	A	1	Total	C	0
			240	240	
18	A	1	Total	C	0
			240	240	
18	A	1	Total	C	0
			240	240	
18	A	1	Total	C	0
			240	240	
18	A	1	Total	C	0
			240	240	
18	A	1	Total	C	0
			240	240	
18	B	1	Total	C	0
			400	400	
18	B	1	Total	C	0
			400	400	
18	B	1	Total	C	0
			400	400	
18	B	1	Total	C	0
			400	400	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		AltConf
18	B	1	Total 400	C 400	0
18	B	1	Total 400	C 400	0
18	B	1	Total 400	C 400	0
18	B	1	Total 400	C 400	0
18	B	1	Total 400	C 400	0
18	B	1	Total 400	C 400	0
18	G	1	Total 240	C 240	0
18	G	1	Total 240	C 240	0
18	G	1	Total 240	C 240	0
18	G	1	Total 240	C 240	0
18	G	1	Total 240	C 240	0
18	G	1	Total 240	C 240	0
18	H	1	Total 400	C 400	0
18	H	1	Total 400	C 400	0
18	H	1	Total 400	C 400	0
18	H	1	Total 400	C 400	0
18	H	1	Total 400	C 400	0
18	H	1	Total 400	C 400	0
18	H	1	Total 400	C 400	0
18	H	1	Total 400	C 400	0

Continued on next page...

Continued from previous page...

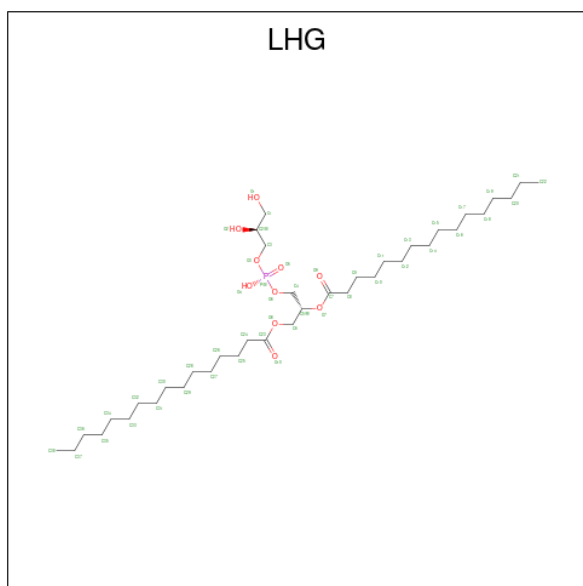
Mol	Chain	Residues	Atoms		AltConf
18	H	1	Total 400	C 400	0
18	I	1	Total 80	C 80	0
18	I	1	Total 80	C 80	0
18	L	1	Total 80	C 80	0
18	L	1	Total 80	C 80	0
18	M	1	Total 40	C 40	0
18	R	1	Total 80	C 80	0
18	R	1	Total 80	C 80	0
18	U	1	Total 80	C 80	0
18	U	1	Total 80	C 80	0
18	V	1	Total 40	C 40	0
18	a	1	Total 240	C 240	0
18	a	1	Total 240	C 240	0
18	a	1	Total 240	C 240	0
18	a	1	Total 240	C 240	0
18	a	1	Total 240	C 240	0
18	a	1	Total 240	C 240	0
18	b	1	Total 400	C 400	0
18	b	1	Total 400	C 400	0
18	b	1	Total 400	C 400	0
18	b	1	Total 400	C 400	0

Continued on next page...

Continued from previous page...

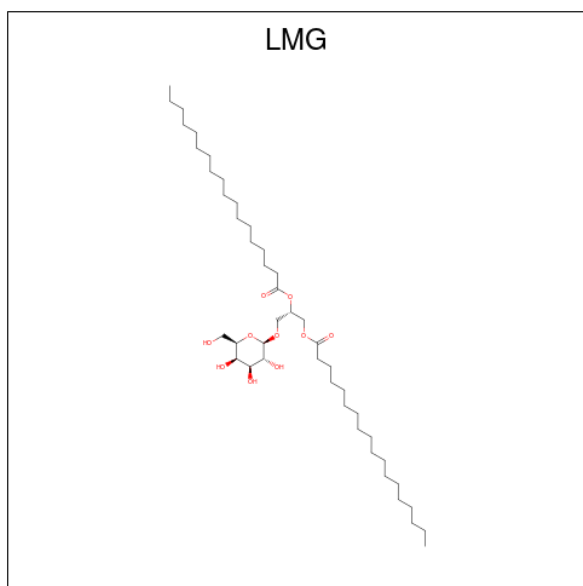
Mol	Chain	Residues	Atoms		AltConf
18	b	1	Total	C	0
			400	400	
18	b	1	Total	C	0
			400	400	
18	b	1	Total	C	0
			400	400	
18	b	1	Total	C	0
			400	400	
18	b	1	Total	C	0
			400	400	
18	b	1	Total	C	0
			400	400	
18	i	1	Total	C	0
			80	80	
18	i	1	Total	C	0
			80	80	
18	l	1	Total	C	0
			80	80	
18	l	1	Total	C	0
			80	80	
18	m	1	Total	C	0
			40	40	

- Molecule 19 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: $C_{38}H_{75}O_{10}P$).



Mol	Chain	Residues	Atoms				AltConf
19	A	1	Total	C	O	P	0
			42	31	10	1	
19	B	1	Total	C	O	P	0
			44	33	10	1	
19	G	1	Total	C	O	P	0
			42	31	10	1	
19	H	1	Total	C	O	P	0
			44	33	10	1	
19	a	1	Total	C	O	P	0
			42	31	10	1	
19	b	1	Total	C	O	P	0
			44	33	10	1	

- Molecule 20 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: $C_{45}H_{86}O_{10}$).



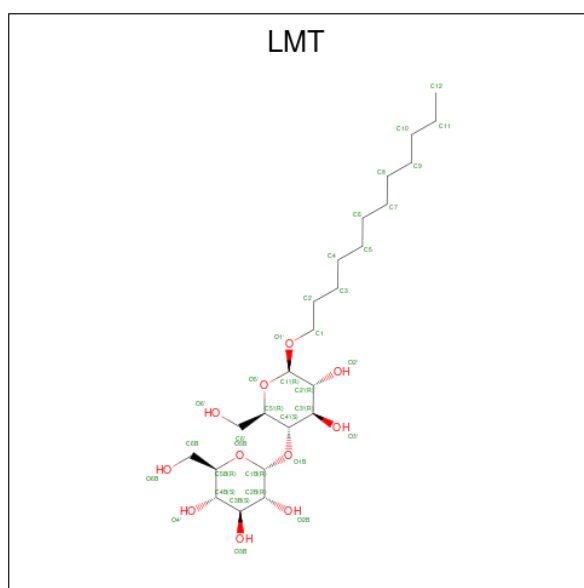
Mol	Chain	Residues	Atoms			AltConf
20	A	1	Total	C	O	0
			46	36	10	
20	B	1	Total	C	O	0
			46	36	10	
20	G	1	Total	C	O	0
			46	36	10	
20	H	1	Total	C	O	0
			46	36	10	
20	I	1	Total	C	O	0
			37	27	10	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
20	L	1	50	40	10	0
20	R	1	37	27	10	0
20	U	1	50	40	10	0
20	a	1	46	36	10	0
20	b	1	46	36	10	0
20	i	1	37	27	10	0
20	l	1	50	40	10	0

- Molecule 21 is DODECYL-BETA-D-MALTOSE (three-letter code: LMT) (formula: $C_{24}H_{46}O_{11}$).



Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
21	A	1	59	37	22	0
21	A	1	59	37	22	0
21	G	1	59	37	22	0
21	G	1	59	37	22	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			AltConf
21	a	1	Total	C	O	0
			59	37	22	
21	a	1	Total	C	O	0
			59	37	22	

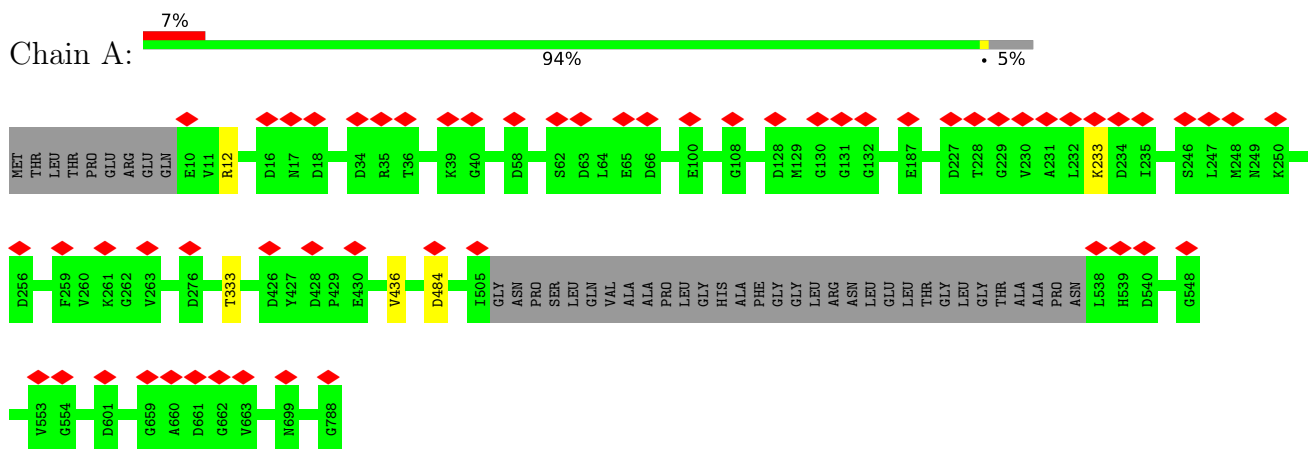
- Molecule 22 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		AltConf
22	L	1	Total	Ca	0
			1	1	
22	U	1	Total	Ca	0
			1	1	
22	1	1	Total	Ca	0
			1	1	

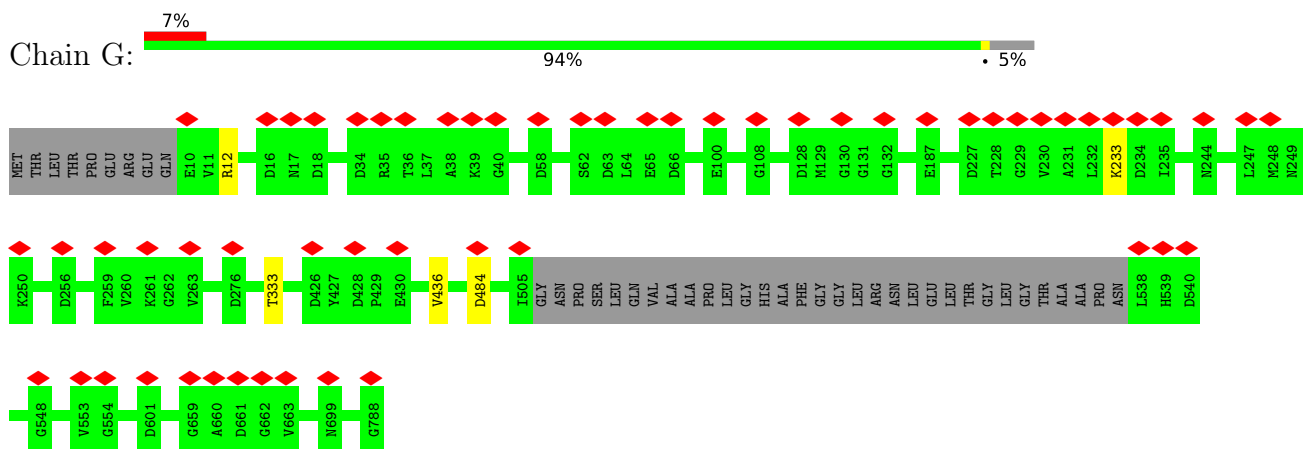
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

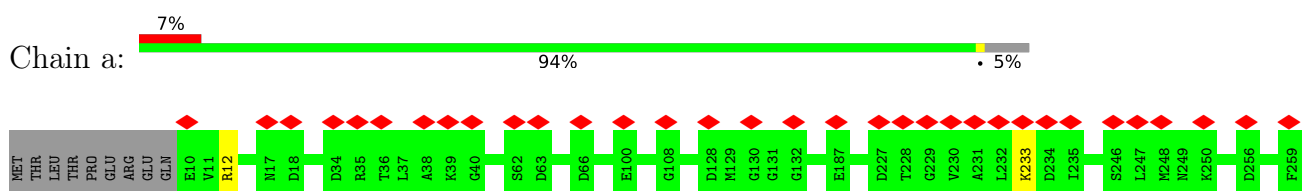
- Molecule 1: Photosystem I P700 chlorophyll a apoprotein A1

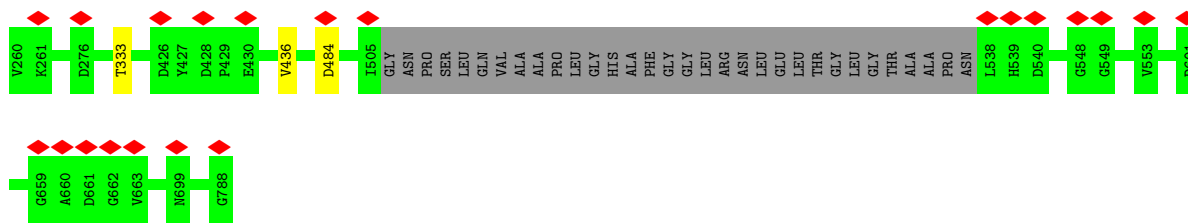


- Molecule 1: Photosystem I P700 chlorophyll a apoprotein A1

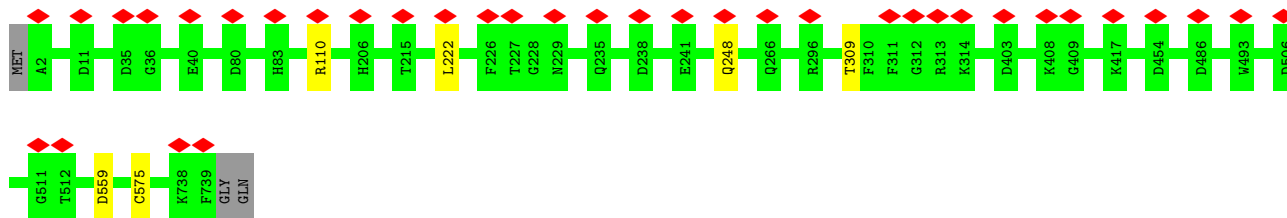


- Molecule 1: Photosystem I P700 chlorophyll a apoprotein A1

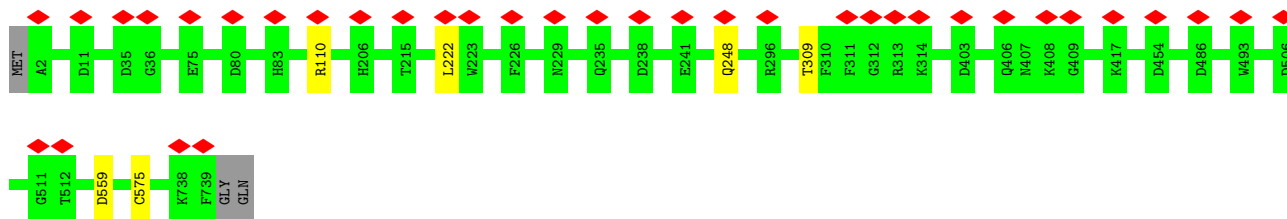




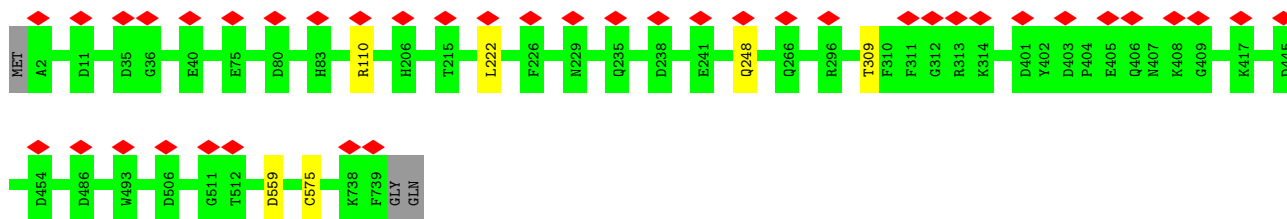
- Molecule 2: Photosystem I P700 chlorophyll a apoprotein A2



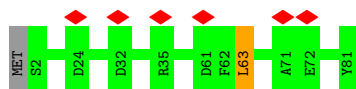
- Molecule 2: Photosystem I P700 chlorophyll a apoprotein A2



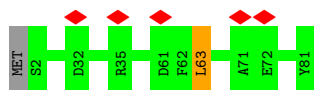
- Molecule 2: Photosystem I P700 chlorophyll a apoprotein A2



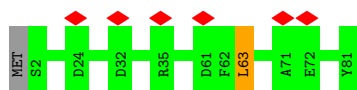
- Molecule 3: Photosystem I iron-sulfur center



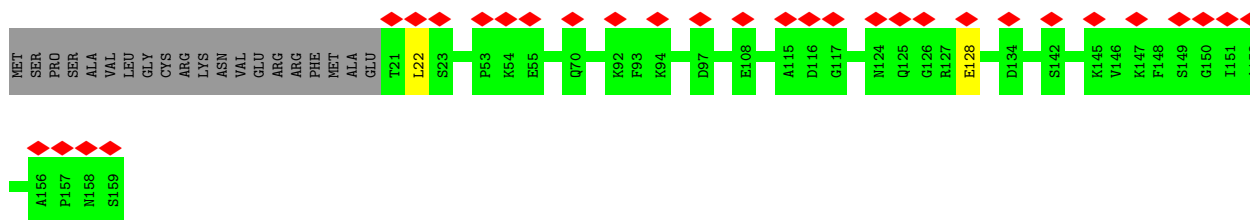
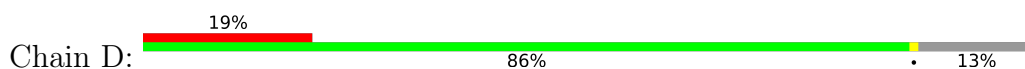
- Molecule 3: Photosystem I iron-sulfur center



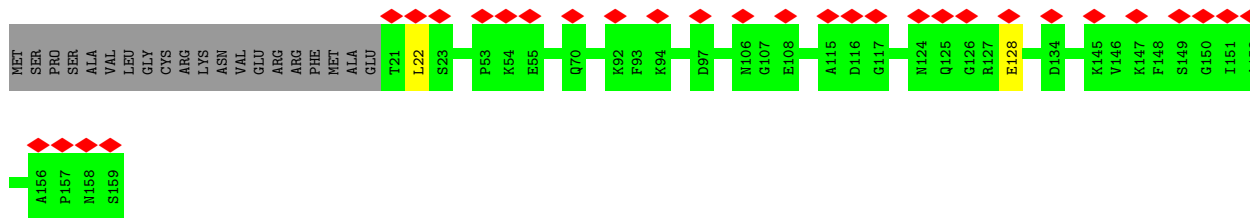
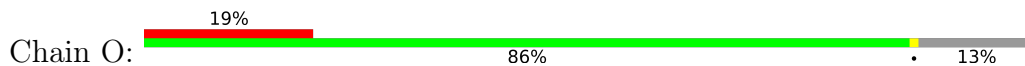
- Molecule 3: Photosystem I iron-sulfur center



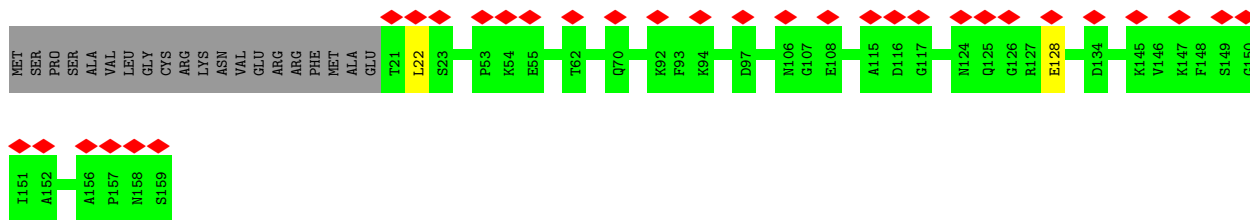
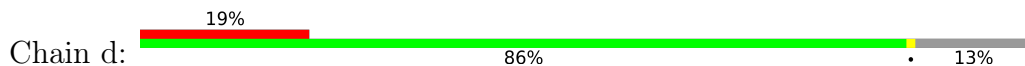
- Molecule 4: Photosystem I protein PsaD



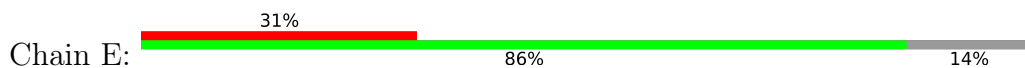
- Molecule 4: Photosystem I protein PsaD

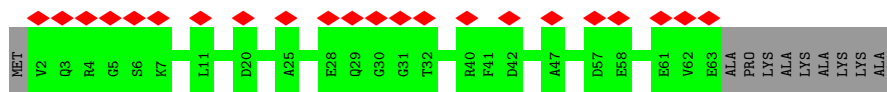


- Molecule 4: Photosystem I protein PsaD

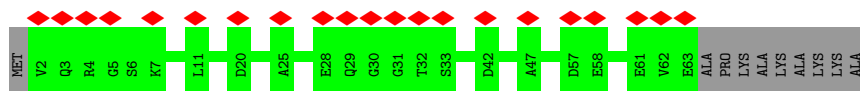
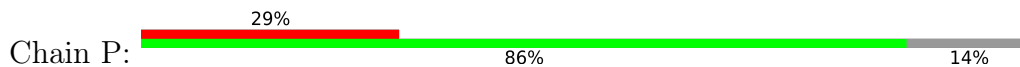


- Molecule 5: Photosystem I reaction center subunit IV

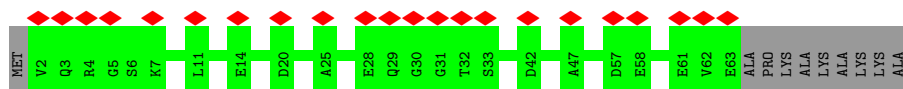
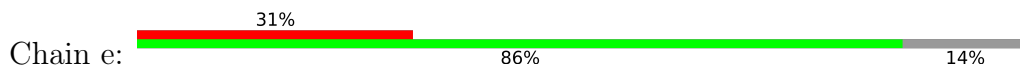




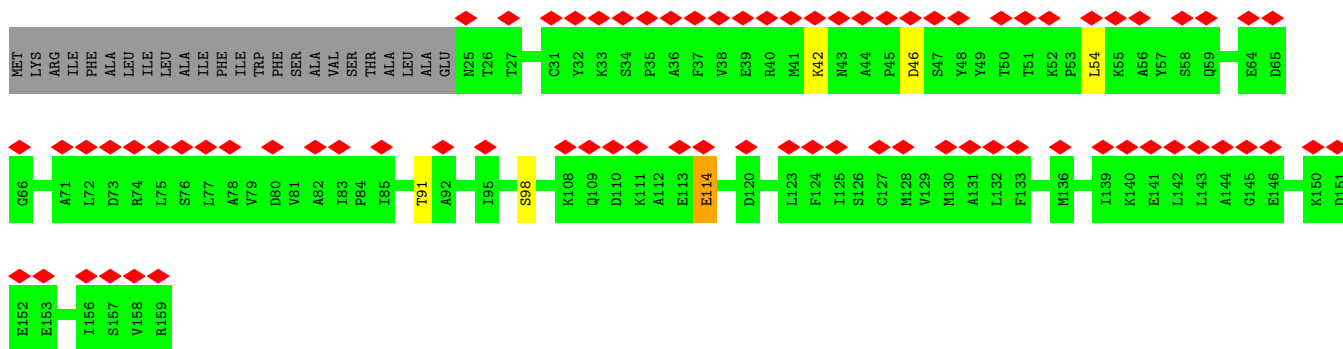
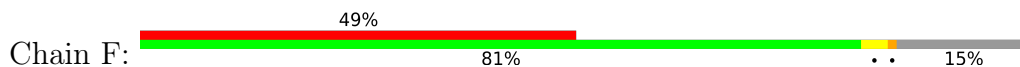
• Molecule 5: Photosystem I reaction center subunit IV



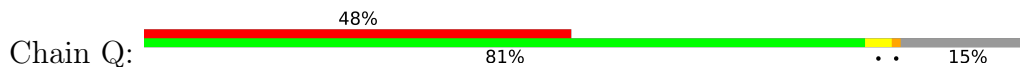
• Molecule 5: Photosystem I reaction center subunit IV



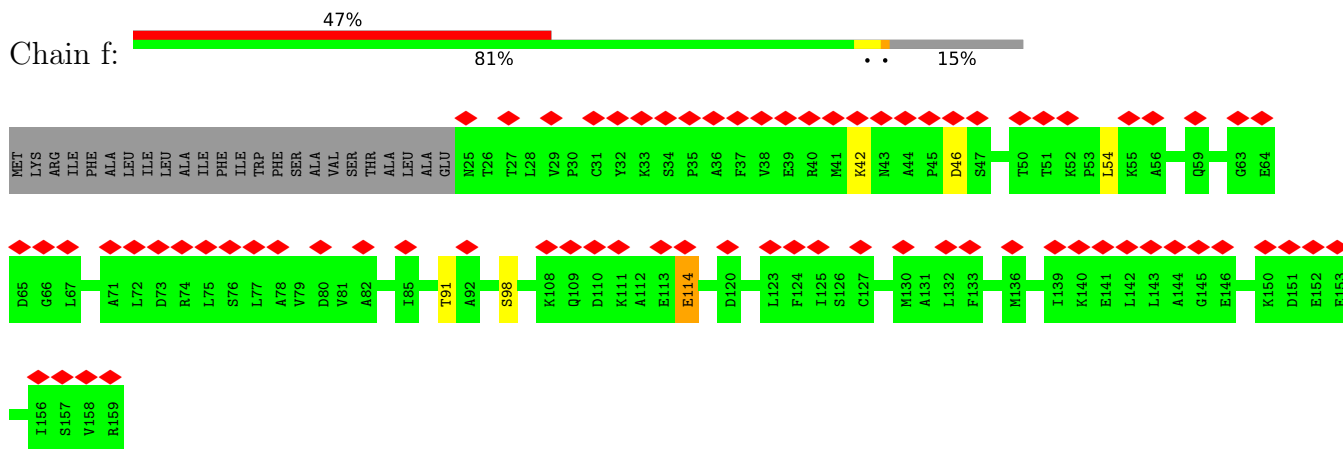
• Molecule 6: Photosystem I reaction center protein PsaF subunit III



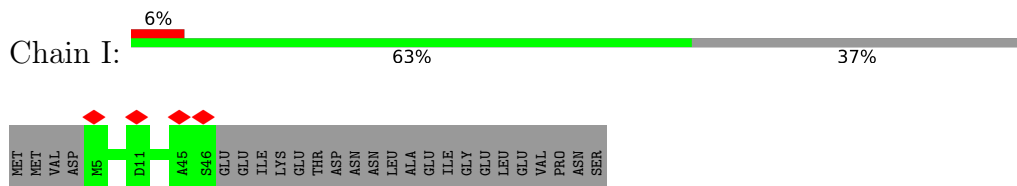
• Molecule 6: Photosystem I reaction center protein PsaF subunit III



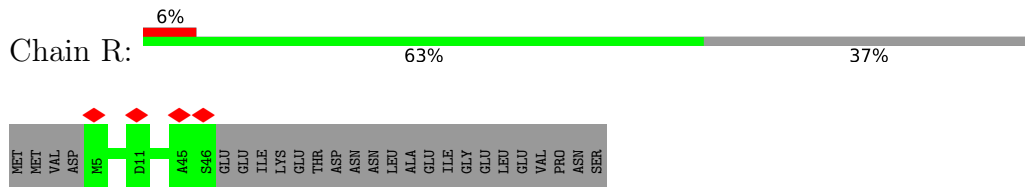
• Molecule 6: Photosystem I reaction center protein PsaF subunit III



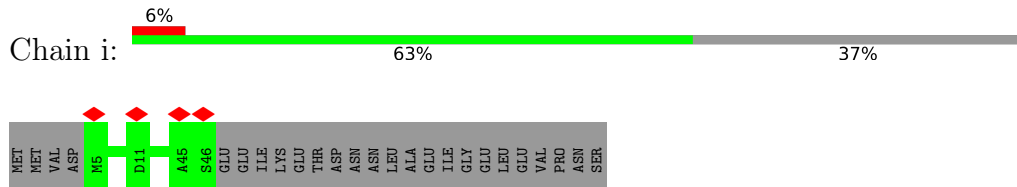
• Molecule 7: photosystem I subunit VIII



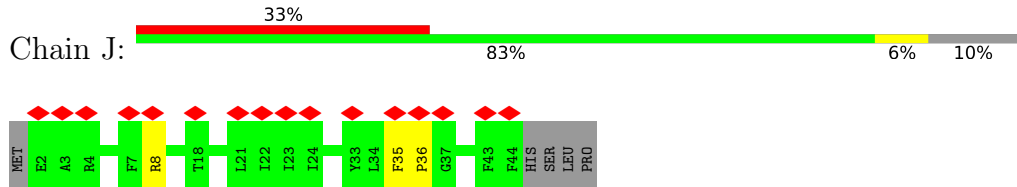
• Molecule 7: photosystem I subunit VIII



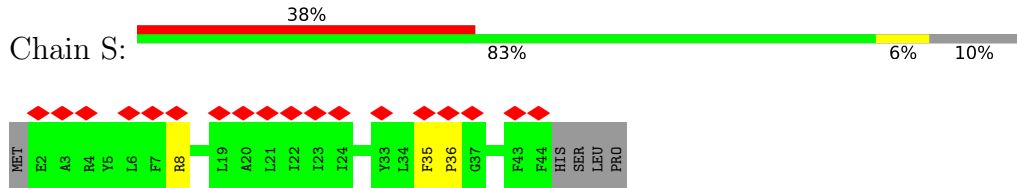
• Molecule 7: photosystem I subunit VIII



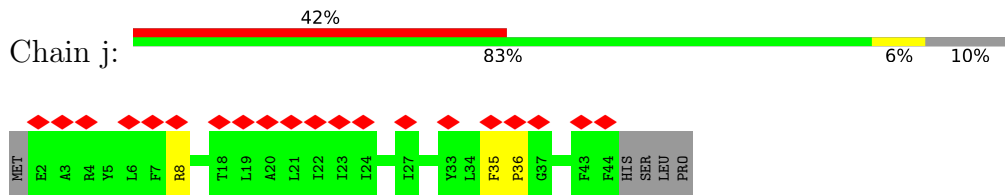
• Molecule 8: Photosystem I reaction centre subunit IX / PsaJ



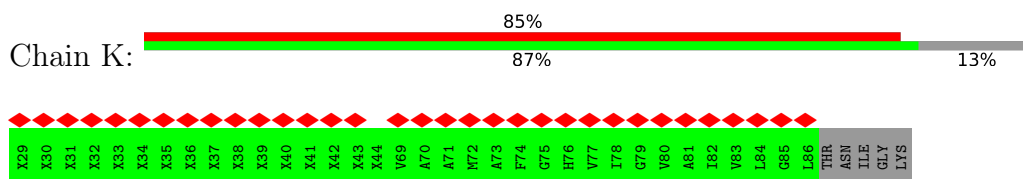
• Molecule 8: Photosystem I reaction centre subunit IX / PsaJ



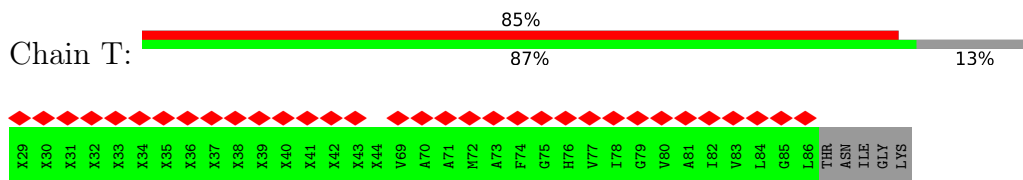
• Molecule 8: Photosystem I reaction centre subunit IX / PsaJ



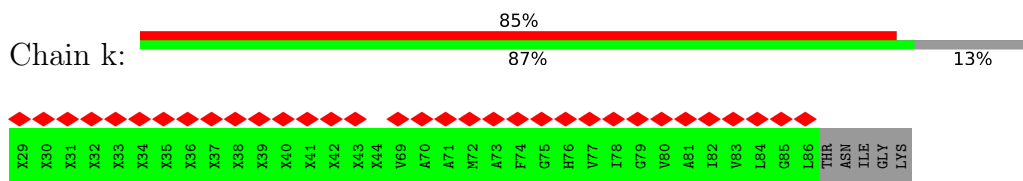
• Molecule 9: photosystem I reaction center subunit PsaK



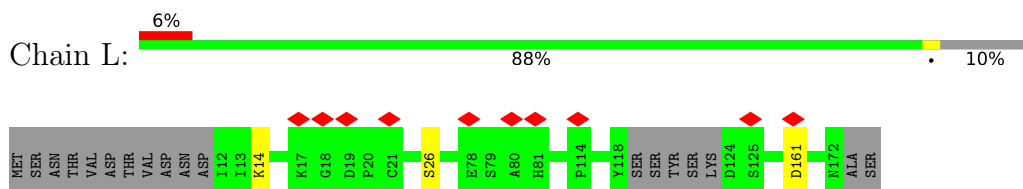
• Molecule 9: photosystem I reaction center subunit PsaK



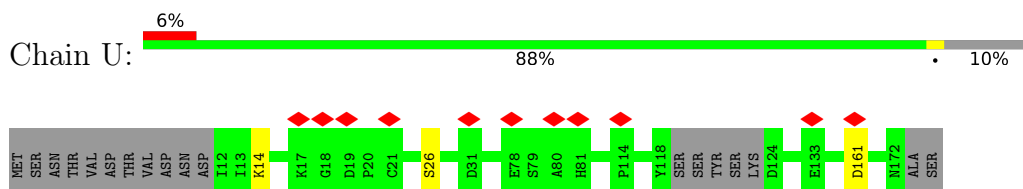
• Molecule 9: photosystem I reaction center subunit PsaK



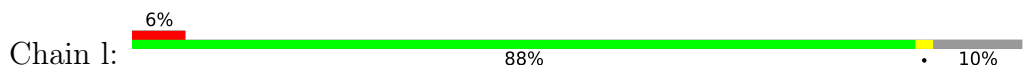
• Molecule 10: Photosystem I reaction center protein subunit XI

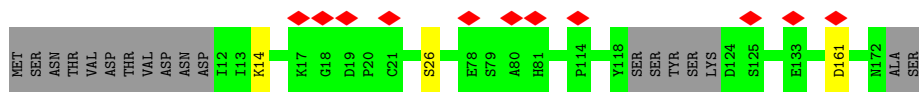


• Molecule 10: Photosystem I reaction center protein subunit XI



• Molecule 10: Photosystem I reaction center protein subunit XI





• Molecule 11: Photosystem I reaction center subunit XII



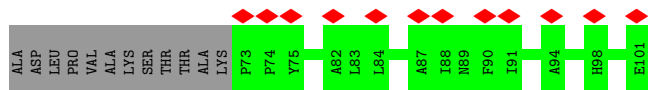
• Molecule 11: Photosystem I reaction center subunit XII



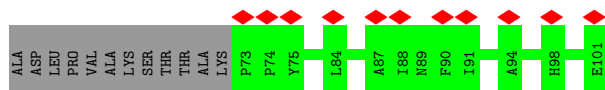
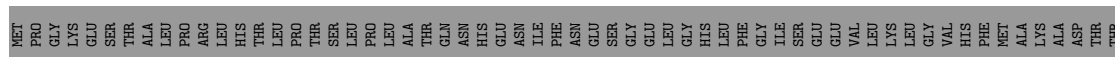
• Molecule 11: Photosystem I reaction center subunit XII



• Molecule 12: Photosystem one PsaX



• Molecule 12: Photosystem one PsaX



• Molecule 12: Photosystem one PsaX



MET PRO GLY LYS GLU SER THR ALA LEU PRO ARG LEU HIS THR LEU PRO THR SER LEU PRO ALA THR GLN ASN HIS GLU ASN ILE PHE ASN GLU SER SER GLY LEU GLY HIS LEU PHE GLY ILE SER SER GLU VAL VAL LYS LEU LEU GLY VAL HIS HIS PHE MET ALA LYS ALA ASP THR THR

ALA ASP LEU PRO VAL ALA LYS SER THR THR ALA LYS P73 P74 Y75 A80 W81 A82 L83 L84 A87 I88 W89 F90 I91 H98 E101

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C3	Depositor
Number of particles used	178666	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	1.5252	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.251	Depositor
Minimum map value	-0.165	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.0293	Depositor
Map size (\AA)	423.99997, 423.99997, 423.99997	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.06, 1.06, 1.06	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: CL0, LHG, BCR, CA, PQN, LMT, CLA, F6C, LMG, SF4

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.47	0/6112	0.54	0/8325
1	G	0.47	0/6112	0.54	0/8325
1	a	0.47	0/6112	0.54	0/8325
2	B	0.50	0/6131	0.57	1/8380 (0.0%)
2	H	0.50	0/6131	0.57	1/8380 (0.0%)
2	b	0.50	0/6131	0.57	1/8380 (0.0%)
3	C	0.48	0/611	0.68	1/828 (0.1%)
3	N	0.48	0/611	0.68	1/828 (0.1%)
3	c	0.48	0/611	0.68	1/828 (0.1%)
4	D	0.38	0/1116	0.55	0/1505
4	O	0.38	0/1116	0.55	0/1505
4	d	0.38	0/1116	0.55	0/1505
5	E	0.38	0/506	0.52	0/686
5	P	0.38	0/506	0.52	0/686
5	e	0.38	0/506	0.52	0/686
6	F	0.34	0/1084	0.57	1/1470 (0.1%)
6	Q	0.33	0/1084	0.57	1/1470 (0.1%)
6	f	0.34	0/1084	0.57	1/1470 (0.1%)
7	I	0.48	0/365	0.69	0/502
7	R	0.48	0/365	0.69	0/502
7	i	0.48	0/365	0.69	0/502
8	J	0.32	0/353	0.68	0/482
8	S	0.32	0/353	0.68	0/482
8	j	0.32	0/353	0.68	0/482
9	K	0.27	0/122	0.53	0/165
9	T	0.27	0/122	0.53	0/165
9	k	0.27	0/122	0.53	0/165
10	L	0.47	0/1198	0.62	1/1624 (0.1%)
10	U	0.47	0/1198	0.62	1/1624 (0.1%)
10	l	0.47	0/1198	0.62	1/1624 (0.1%)
11	M	0.36	0/250	0.56	0/340
11	V	0.36	0/250	0.56	0/340

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
11	m	0.37	0/250	0.56	0/340
12	W	0.31	0/256	0.57	0/350
12	X	0.31	0/256	0.57	0/350
12	x	0.32	0/256	0.57	0/350
All	All	0.46	0/54312	0.57	12/73971 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	G	0	1
1	a	0	1
6	F	0	1
6	Q	0	1
6	f	0	1
8	J	0	1
8	S	0	1
8	j	0	1
All	All	0	9

There are no bond length outliers.

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	U	26	SER	C-N-CA	6.98	139.15	121.70
10	l	26	SER	C-N-CA	6.96	139.10	121.70
10	L	26	SER	C-N-CA	6.96	139.09	121.70
2	B	222	LEU	CA-CB-CG	6.25	129.67	115.30
2	b	222	LEU	CA-CB-CG	6.24	129.66	115.30

There are no chirality outliers.

5 of 9 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	333	THR	Peptide
6	F	46	ASP	Peptide
1	G	333	THR	Peptide
8	J	35	PHE	Peptide

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Group
6	Q	46	ASP	Peptide

5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	743/788 (94%)	699 (94%)	44 (6%)	0	100	100
1	G	743/788 (94%)	700 (94%)	43 (6%)	0	100	100
1	a	743/788 (94%)	699 (94%)	44 (6%)	0	100	100
2	B	736/741 (99%)	706 (96%)	30 (4%)	0	100	100
2	H	736/741 (99%)	706 (96%)	30 (4%)	0	100	100
2	b	736/741 (99%)	706 (96%)	30 (4%)	0	100	100
3	C	78/81 (96%)	72 (92%)	5 (6%)	1 (1%)	12	47
3	N	78/81 (96%)	72 (92%)	5 (6%)	1 (1%)	12	47
3	c	78/81 (96%)	72 (92%)	5 (6%)	1 (1%)	12	47
4	D	137/159 (86%)	125 (91%)	12 (9%)	0	100	100
4	O	137/159 (86%)	125 (91%)	12 (9%)	0	100	100
4	d	137/159 (86%)	125 (91%)	12 (9%)	0	100	100
5	E	60/72 (83%)	54 (90%)	6 (10%)	0	100	100
5	P	60/72 (83%)	54 (90%)	6 (10%)	0	100	100
5	e	60/72 (83%)	54 (90%)	6 (10%)	0	100	100
6	F	133/159 (84%)	122 (92%)	11 (8%)	0	100	100
6	Q	133/159 (84%)	122 (92%)	11 (8%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	f	133/159 (84%)	122 (92%)	11 (8%)	0	100	100
7	I	40/67 (60%)	33 (82%)	7 (18%)	0	100	100
7	R	40/67 (60%)	33 (82%)	7 (18%)	0	100	100
7	i	40/67 (60%)	33 (82%)	7 (18%)	0	100	100
8	J	41/48 (85%)	36 (88%)	4 (10%)	1 (2%)	6	34
8	S	41/48 (85%)	36 (88%)	4 (10%)	1 (2%)	6	34
8	j	41/48 (85%)	36 (88%)	4 (10%)	1 (2%)	6	34
9	K	16/39 (41%)	16 (100%)	0	0	100	100
9	T	16/39 (41%)	16 (100%)	0	0	100	100
9	k	16/39 (41%)	16 (100%)	0	0	100	100
10	L	152/174 (87%)	140 (92%)	12 (8%)	0	100	100
10	U	152/174 (87%)	140 (92%)	12 (8%)	0	100	100
10	l	152/174 (87%)	140 (92%)	12 (8%)	0	100	100
11	M	29/31 (94%)	27 (93%)	2 (7%)	0	100	100
11	V	29/31 (94%)	27 (93%)	2 (7%)	0	100	100
11	m	29/31 (94%)	27 (93%)	2 (7%)	0	100	100
12	W	27/101 (27%)	25 (93%)	2 (7%)	0	100	100
12	X	27/101 (27%)	25 (93%)	2 (7%)	0	100	100
12	x	27/101 (27%)	25 (93%)	2 (7%)	0	100	100
All	All	6576/7380 (89%)	6166 (94%)	404 (6%)	6 (0%)	54	83

5 of 6 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	C	63	LEU
3	N	63	LEU
3	c	63	LEU
8	J	36	PRO
8	S	36	PRO

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	611/641 (95%)	607 (99%)	4 (1%)	84	94
1	G	611/641 (95%)	607 (99%)	4 (1%)	84	94
1	a	611/641 (95%)	607 (99%)	4 (1%)	84	94
2	B	595/597 (100%)	590 (99%)	5 (1%)	81	93
2	H	595/597 (100%)	590 (99%)	5 (1%)	81	93
2	b	595/597 (100%)	590 (99%)	5 (1%)	81	93
3	C	68/69 (99%)	68 (100%)	0	100	100
3	N	68/69 (99%)	68 (100%)	0	100	100
3	c	68/69 (99%)	68 (100%)	0	100	100
4	D	115/132 (87%)	113 (98%)	2 (2%)	60	83
4	O	115/132 (87%)	113 (98%)	2 (2%)	60	83
4	d	115/132 (87%)	113 (98%)	2 (2%)	60	83
5	E	54/60 (90%)	54 (100%)	0	100	100
5	P	54/60 (90%)	54 (100%)	0	100	100
5	e	54/60 (90%)	54 (100%)	0	100	100
6	F	115/134 (86%)	110 (96%)	5 (4%)	29	64
6	Q	115/134 (86%)	110 (96%)	5 (4%)	29	64
6	f	115/134 (86%)	110 (96%)	5 (4%)	29	64
7	I	37/60 (62%)	37 (100%)	0	100	100
7	R	37/60 (62%)	37 (100%)	0	100	100
7	i	37/60 (62%)	37 (100%)	0	100	100
8	J	36/42 (86%)	35 (97%)	1 (3%)	43	74
8	S	36/42 (86%)	35 (97%)	1 (3%)	43	74
8	j	36/42 (86%)	35 (97%)	1 (3%)	43	74
9	K	11/15 (73%)	11 (100%)	0	100	100
9	T	11/15 (73%)	11 (100%)	0	100	100
9	k	11/15 (73%)	11 (100%)	0	100	100
10	L	121/138 (88%)	119 (98%)	2 (2%)	60	83
10	U	121/138 (88%)	119 (98%)	2 (2%)	60	83
10	l	121/138 (88%)	119 (98%)	2 (2%)	60	83

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
11	M	26/26 (100%)	26 (100%)	0	100	100
11	V	26/26 (100%)	26 (100%)	0	100	100
11	m	26/26 (100%)	26 (100%)	0	100	100
12	W	24/84 (29%)	24 (100%)	0	100	100
12	X	24/84 (29%)	24 (100%)	0	100	100
12	x	24/84 (29%)	24 (100%)	0	100	100
All	All	5439/5994 (91%)	5382 (99%)	57 (1%)	77	90

5 of 57 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	O	22	LEU
10	l	14	LYS
8	S	8	ARG
8	j	8	ARG
6	f	42	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 87 such sidechains are listed below:

Mol	Chain	Res	Type
12	W	89	ASN
1	a	751	GLN
1	a	49	ASN
1	a	379	HIS
2	b	354	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 372 ligands modelled in this entry, 3 are monoatomic - leaving 369 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
14	CLA	a	1115	-	55,63,73	2.41	19 (34%)	64,101,113	2.86	24 (37%)
17	SF4	A	3001	-	0,12,12	-	-	-	-	-
18	BCR	G	4008	-	41,41,41	3.17	9 (21%)	56,56,56	6.33	22 (39%)
18	BCR	B	4014	-	41,41,41	2.99	6 (14%)	56,56,56	6.43	23 (41%)
14	CLA	H	1228	-	45,53,73	2.54	19 (42%)	52,89,113	2.92	23 (44%)
14	CLA	a	1119	-	65,73,73	2.21	18 (27%)	76,113,113	2.48	24 (31%)
18	BCR	H	4009	-	41,41,41	2.92	6 (14%)	56,56,56	6.56	25 (44%)
18	BCR	H	4004	-	41,41,41	2.87	6 (14%)	56,56,56	6.46	25 (44%)
15	F6C	A	1120	-	49,54,74	3.17	24 (48%)	46,90,114	3.91	24 (52%)
14	CLA	B	1205	-	65,73,73	2.17	19 (29%)	76,113,113	2.78	26 (34%)
14	CLA	B	1224	-	65,73,73	2.21	18 (27%)	76,113,113	2.60	25 (32%)
18	BCR	a	4011	-	41,41,41	2.97	7 (17%)	56,56,56	6.52	27 (48%)
14	CLA	B	1022	-	65,73,73	2.17	17 (26%)	76,113,113	2.58	27 (35%)
14	CLA	a	1116	-	55,63,73	2.39	18 (32%)	64,101,113	2.81	26 (40%)
17	SF4	C	3002	-	0,12,12	-	-	-	-	-
18	BCR	H	4013	-	41,41,41	2.82	6 (14%)	56,56,56	6.56	23 (41%)
14	CLA	B	1236	-	45,53,73	2.50	17 (37%)	52,89,113	2.95	19 (36%)
14	CLA	B	1226	-	65,73,73	2.27	18 (27%)	76,113,113	2.57	24 (31%)
14	CLA	A	1013	-	60,68,73	2.35	19 (31%)	70,107,113	2.83	27 (38%)
14	CLA	H	1021	-	65,73,73	2.20	20 (30%)	76,113,113	2.69	28 (36%)
14	CLA	a	1112	-	45,53,73	2.52	20 (44%)	52,89,113	2.89	20 (38%)
17	SF4	c	3003	-	0,12,12	-	-	-	-	-
18	BCR	B	4013	-	41,41,41	2.82	6 (14%)	56,56,56	6.56	24 (42%)
14	CLA	b	1212	-	45,53,73	2.53	18 (40%)	52,89,113	2.96	22 (42%)
14	CLA	b	1239	-	65,73,73	2.22	20 (30%)	76,113,113	2.76	29 (38%)
14	CLA	B	1233	-	45,53,73	2.53	19 (42%)	52,89,113	2.92	21 (40%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
19	LHG	H	5004	-	43,43,48	0.98	2 (4%)	46,49,54	1.19	3 (6%)
14	CLA	H	1234	-	55,63,73	2.31	18 (32%)	64,101,113	2.79	24 (37%)
15	F6C	A	1121	-	49,54,74	3.12	25 (51%)	46,90,114	3.88	25 (54%)
14	CLA	a	1130	-	55,63,73	2.40	18 (32%)	64,101,113	2.70	23 (35%)
14	CLA	H	1201	-	55,63,73	2.37	18 (32%)	64,101,113	2.93	25 (39%)
14	CLA	B	1235	-	60,68,73	2.31	17 (28%)	70,107,113	2.78	25 (35%)
13	CL0	G	1011	-	65,73,73	2.25	21 (32%)	76,113,113	2.81	27 (35%)
14	CLA	b	1236	-	45,53,73	2.48	17 (37%)	52,89,113	2.94	20 (38%)
16	PQN	H	2002	-	34,34,34	1.49	2 (5%)	42,45,45	1.19	1 (2%)
14	CLA	A	1136	-	55,63,73	2.34	20 (36%)	64,101,113	2.93	22 (34%)
14	CLA	G	1122	-	55,63,73	2.38	19 (34%)	64,101,113	2.72	26 (40%)
14	CLA	A	1101	-	45,53,73	2.49	17 (37%)	52,89,113	2.92	23 (44%)
14	CLA	H	1235	-	60,68,73	2.30	18 (30%)	70,107,113	2.78	25 (35%)
14	CLA	l	1501	-	60,68,73	2.29	20 (33%)	70,107,113	2.86	25 (35%)
14	CLA	b	1234	-	55,63,73	2.31	18 (32%)	64,101,113	2.79	24 (37%)
14	CLA	G	1123	-	60,68,73	2.30	19 (31%)	70,107,113	2.69	27 (38%)
18	BCR	I	4020	-	41,41,41	3.16	10 (24%)	56,56,56	6.31	24 (42%)
18	BCR	G	4001	-	41,41,41	2.96	6 (14%)	56,56,56	6.49	25 (44%)
14	CLA	H	1012	-	65,73,73	2.17	17 (26%)	76,113,113	2.57	27 (35%)
14	CLA	H	1221	-	60,68,73	2.27	18 (30%)	70,107,113	2.60	25 (35%)
14	CLA	G	1108	-	45,53,73	2.54	18 (40%)	52,89,113	2.89	21 (40%)
14	CLA	A	1114	-	45,53,73	2.61	20 (44%)	52,89,113	2.91	22 (42%)
14	CLA	a	1127	-	65,73,73	2.25	19 (29%)	76,113,113	2.56	26 (34%)
14	CLA	A	1110	-	45,53,73	2.51	18 (40%)	52,89,113	3.06	20 (38%)
20	LMG	L	5007	-	50,50,55	1.34	7 (14%)	58,58,63	1.09	2 (3%)
20	LMG	U	5007	-	50,50,55	1.34	7 (14%)	58,58,63	1.09	2 (3%)
14	CLA	a	1123	-	60,68,73	2.30	19 (31%)	70,107,113	2.69	27 (38%)
14	CLA	B	1215	-	60,68,73	2.31	18 (30%)	70,107,113	2.67	28 (40%)
14	CLA	B	1202	-	60,68,73	2.24	17 (28%)	70,107,113	2.71	25 (35%)
18	BCR	G	4011	-	41,41,41	2.98	7 (17%)	56,56,56	6.52	26 (46%)
18	BCR	U	4019	-	41,41,41	2.90	6 (14%)	56,56,56	6.54	23 (41%)
18	BCR	A	4002	-	41,41,41	2.95	6 (14%)	56,56,56	6.17	23 (41%)
14	CLA	H	1203	-	65,73,73	2.14	19 (29%)	76,113,113	2.68	26 (34%)
18	BCR	H	4017	-	41,41,41	3.00	7 (17%)	56,56,56	6.59	19 (33%)
14	CLA	H	1217	-	55,63,73	2.38	19 (34%)	64,101,113	2.76	23 (35%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	b	1219	-	45,53,73	2.54	18 (40%)	52,89,113	2.86	21 (40%)
14	CLA	b	1208	-	65,73,73	2.19	19 (29%)	76,113,113	2.56	22 (28%)
14	CLA	G	1140	-	65,73,73	2.19	18 (27%)	76,113,113	2.51	22 (28%)
14	CLA	b	1216	-	55,63,73	2.40	19 (34%)	64,101,113	2.70	26 (40%)
18	BCR	b	4004	-	41,41,41	2.87	6 (14%)	56,56,56	6.46	25 (44%)
14	CLA	H	1216	-	55,63,73	2.39	19 (34%)	64,101,113	2.70	26 (40%)
14	CLA	B	1238	-	65,73,73	2.24	18 (27%)	76,113,113	2.69	29 (38%)
14	CLA	B	1219	-	45,53,73	2.54	18 (40%)	52,89,113	2.86	21 (40%)
14	CLA	B	1201	-	55,63,73	2.37	18 (32%)	64,101,113	2.93	25 (39%)
14	CLA	a	1105	-	45,53,73	2.57	18 (40%)	52,89,113	2.89	20 (38%)
20	LMG	G	5005	-	46,46,55	1.28	5 (10%)	54,54,63	1.15	2 (3%)
14	CLA	B	1239	-	65,73,73	2.21	19 (29%)	76,113,113	2.76	29 (38%)
14	CLA	G	1109	-	45,53,73	2.49	19 (42%)	52,89,113	3.01	21 (40%)
14	CLA	G	1111	-	60,68,73	2.29	20 (33%)	70,107,113	2.73	26 (37%)
14	CLA	H	1206	-	45,53,73	2.52	18 (40%)	52,89,113	2.83	20 (38%)
18	BCR	B	4017	-	41,41,41	3.00	6 (14%)	56,56,56	6.60	19 (33%)
14	CLA	b	1227	-	45,53,73	2.58	18 (40%)	52,89,113	2.75	23 (44%)
14	CLA	A	1129	-	45,53,73	2.54	18 (40%)	52,89,113	2.92	23 (44%)
14	CLA	A	1140	-	65,73,73	2.19	18 (27%)	76,113,113	2.52	22 (28%)
18	BCR	B	4012	-	41,41,41	2.76	6 (14%)	56,56,56	6.63	27 (48%)
21	LMT	A	6001	-	32,32,36	1.30	6 (18%)	43,43,47	1.03	3 (6%)
21	LMT	A	6002	-	29,29,36	1.39	5 (17%)	40,40,47	1.39	8 (20%)
14	CLA	A	1130	-	55,63,73	2.40	18 (32%)	64,101,113	2.70	23 (35%)
15	F6C	G	1120	-	49,54,74	3.17	24 (48%)	46,90,114	3.91	24 (52%)
18	BCR	i	4020	-	41,41,41	3.16	10 (24%)	56,56,56	6.30	25 (44%)
14	CLA	G	1133	-	60,68,73	2.28	19 (31%)	70,107,113	2.75	25 (35%)
14	CLA	H	1208	-	65,73,73	2.19	19 (29%)	76,113,113	2.56	22 (28%)
14	CLA	a	1122	-	55,63,73	2.37	19 (34%)	64,101,113	2.73	26 (40%)
14	CLA	b	1201	-	55,63,73	2.37	18 (32%)	64,101,113	2.93	25 (39%)
14	CLA	b	1214	-	60,68,73	2.32	20 (33%)	70,107,113	2.62	30 (42%)
18	BCR	G	4007	-	41,41,41	3.00	7 (17%)	56,56,56	6.65	24 (42%)
14	CLA	B	1225	-	65,73,73	2.26	20 (30%)	76,113,113	2.40	20 (26%)
14	CLA	T	1401	-	45,53,73	2.58	20 (44%)	52,89,113	2.90	19 (36%)
14	CLA	B	1232	-	45,53,73	2.54	20 (44%)	52,89,113	2.85	22 (42%)
14	CLA	H	1205	-	65,73,73	2.17	19 (29%)	76,113,113	2.78	26 (34%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	B	1214	-	60,68,73	2.32	19 (31%)	70,107,113	2.62	30 (42%)
14	CLA	l	1503	-	65,73,73	2.19	19 (29%)	76,113,113	2.61	26 (34%)
14	CLA	B	1220	-	55,63,73	2.41	19 (34%)	64,101,113	2.82	22 (34%)
14	CLA	B	1228	-	45,53,73	2.54	19 (42%)	52,89,113	2.92	23 (44%)
14	CLA	b	1021	-	65,73,73	2.19	20 (30%)	76,113,113	2.69	28 (36%)
14	CLA	A	1124	-	55,63,73	2.36	18 (32%)	64,101,113	2.81	25 (39%)
14	CLA	a	1135	-	50,58,73	2.55	20 (40%)	58,95,113	3.01	25 (43%)
14	CLA	A	1107	-	45,53,73	2.49	17 (37%)	52,89,113	2.77	20 (38%)
18	BCR	a	4001	-	41,41,41	2.97	6 (14%)	56,56,56	6.48	25 (44%)
14	CLA	H	1222	-	65,73,73	2.23	19 (29%)	76,113,113	2.68	29 (38%)
14	CLA	A	1131	-	60,68,73	2.27	18 (30%)	70,107,113	2.68	21 (30%)
14	CLA	G	1105	-	45,53,73	2.57	18 (40%)	52,89,113	2.88	20 (38%)
14	CLA	b	1203	-	65,73,73	2.14	19 (29%)	76,113,113	2.67	25 (32%)
13	CL0	A	1011	-	65,73,73	2.25	21 (32%)	76,113,113	2.81	26 (34%)
14	CLA	H	1238	-	65,73,73	2.25	18 (27%)	76,113,113	2.69	29 (38%)
15	F6C	G	1121	-	49,54,74	3.12	25 (51%)	46,90,114	3.87	25 (54%)
14	CLA	A	1138	-	60,68,73	2.30	18 (30%)	70,107,113	2.68	27 (38%)
14	CLA	b	1224	-	65,73,73	2.21	18 (27%)	76,113,113	2.60	26 (34%)
18	BCR	L	4022	-	41,41,41	3.07	9 (21%)	56,56,56	6.47	24 (42%)
14	CLA	G	1106	-	45,53,73	2.50	18 (40%)	52,89,113	3.03	22 (42%)
14	CLA	b	1022	-	65,73,73	2.17	18 (27%)	76,113,113	2.57	27 (35%)
14	CLA	H	1210	-	65,73,73	2.22	21 (32%)	76,113,113	2.67	29 (38%)
14	CLA	A	1126	-	60,68,73	2.33	17 (28%)	70,107,113	2.66	24 (34%)
14	CLA	H	1220	-	55,63,73	2.40	19 (34%)	64,101,113	2.81	23 (35%)
14	CLA	H	1023	-	65,73,73	2.19	20 (30%)	76,113,113	2.92	29 (38%)
20	LMG	a	5005	-	46,46,55	1.29	5 (10%)	54,54,63	1.15	2 (3%)
14	CLA	H	1209	-	45,53,73	2.52	19 (42%)	52,89,113	2.89	21 (40%)
18	BCR	R	4018	-	41,41,41	3.12	8 (19%)	56,56,56	6.69	23 (41%)
14	CLA	G	1101	-	45,53,73	2.49	17 (37%)	52,89,113	2.91	23 (44%)
14	CLA	B	1209	-	45,53,73	2.52	19 (42%)	52,89,113	2.89	21 (40%)
14	CLA	x	1701	-	45,53,73	2.51	17 (37%)	52,89,113	2.88	20 (38%)
18	BCR	l	4019	-	41,41,41	2.90	6 (14%)	56,56,56	6.55	23 (41%)
18	BCR	B	4016	-	41,41,41	2.86	6 (14%)	56,56,56	6.49	21 (37%)
18	BCR	l	4022	-	41,41,41	3.07	9 (21%)	56,56,56	6.47	24 (42%)
14	CLA	G	1127	-	65,73,73	2.24	19 (29%)	76,113,113	2.56	26 (34%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	b	1206	-	45,53,73	2.52	17 (37%)	52,89,113	2.82	20 (38%)
14	CLA	G	1107	-	45,53,73	2.49	17 (37%)	52,89,113	2.76	20 (38%)
14	CLA	G	1114	-	45,53,73	2.61	20 (44%)	52,89,113	2.91	22 (42%)
18	BCR	V	4021	-	41,41,41	2.95	6 (14%)	56,56,56	6.55	23 (41%)
21	LMT	a	6002	-	29,29,36	1.40	5 (17%)	40,40,47	1.39	8 (20%)
14	CLA	B	1206	-	45,53,73	2.52	17 (37%)	52,89,113	2.83	20 (38%)
15	F6C	a	1120	-	49,54,74	3.17	24 (48%)	46,90,114	3.91	24 (52%)
14	CLA	b	1235	-	60,68,73	2.31	17 (28%)	70,107,113	2.78	25 (35%)
14	CLA	B	1203	-	65,73,73	2.13	19 (29%)	76,113,113	2.68	25 (32%)
15	F6C	B	1230	-	49,54,74	3.16	25 (51%)	46,90,114	3.76	26 (56%)
14	CLA	A	1133	-	60,68,73	2.28	19 (31%)	70,107,113	2.74	25 (35%)
14	CLA	B	1218	-	45,53,73	2.54	17 (37%)	52,89,113	2.99	21 (40%)
14	CLA	b	1213	-	55,63,73	2.41	19 (34%)	64,101,113	2.85	25 (39%)
14	CLA	A	1103	-	60,68,73	2.22	17 (28%)	70,107,113	2.76	24 (34%)
18	BCR	A	4003	-	41,41,41	2.91	6 (14%)	56,56,56	6.49	24 (42%)
14	CLA	A	1132	-	65,73,73	2.18	18 (27%)	76,113,113	2.59	24 (31%)
14	CLA	b	1221	-	60,68,73	2.27	18 (30%)	70,107,113	2.60	25 (35%)
14	CLA	A	1012	-	65,73,73	2.18	18 (27%)	76,113,113	2.60	25 (32%)
16	PQN	b	2002	-	34,34,34	1.49	2 (5%)	42,45,45	1.18	1 (2%)
18	BCR	a	4008	-	41,41,41	3.16	9 (21%)	56,56,56	6.32	22 (39%)
14	CLA	A	1104	-	65,73,73	2.15	19 (29%)	76,113,113	2.67	25 (32%)
14	CLA	A	1108	-	45,53,73	2.54	18 (40%)	52,89,113	2.91	21 (40%)
14	CLA	L	1501	-	60,68,73	2.29	20 (33%)	70,107,113	2.87	25 (35%)
17	SF4	N	3003	-	0,12,12	-	-	-	-	-
14	CLA	b	1233	-	45,53,73	2.54	19 (42%)	52,89,113	2.93	21 (40%)
14	CLA	H	1236	-	45,53,73	2.49	17 (37%)	52,89,113	2.95	19 (36%)
14	CLA	B	1221	-	60,68,73	2.27	19 (31%)	70,107,113	2.60	25 (35%)
14	CLA	H	1204	-	65,73,73	2.22	18 (27%)	76,113,113	2.57	25 (32%)
14	CLA	A	1125	-	65,73,73	2.18	19 (29%)	76,113,113	2.70	26 (34%)
14	CLA	b	1232	-	45,53,73	2.54	20 (44%)	52,89,113	2.85	22 (42%)
14	CLA	a	1133	-	60,68,73	2.28	19 (31%)	70,107,113	2.74	25 (35%)
14	CLA	b	1202	-	60,68,73	2.24	18 (30%)	70,107,113	2.71	25 (35%)
15	F6C	b	1237	-	64,69,74	2.81	26 (40%)	64,108,114	3.38	28 (43%)
14	CLA	a	1129	-	45,53,73	2.55	18 (40%)	52,89,113	2.92	22 (42%)
14	CLA	B	1234	-	55,63,73	2.32	18 (32%)	64,101,113	2.79	24 (37%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	a	1128	-	60,68,73	2.34	19 (31%)	70,107,113	2.69	24 (34%)
20	LMG	H	5002	-	46,46,55	1.27	5 (10%)	54,54,63	1.17	3 (5%)
14	CLA	a	1136	-	55,63,73	2.33	20 (36%)	64,101,113	2.92	22 (34%)
14	CLA	H	1218	-	45,53,73	2.54	17 (37%)	52,89,113	3.00	21 (40%)
14	CLA	a	1101	-	45,53,73	2.48	17 (37%)	52,89,113	2.91	23 (44%)
14	CLA	B	1231	-	55,63,73	2.44	19 (34%)	64,101,113	2.79	24 (37%)
18	BCR	b	4017	-	41,41,41	3.00	6 (14%)	56,56,56	6.59	19 (33%)
15	F6C	b	1230	-	49,54,74	3.15	25 (51%)	46,90,114	3.78	26 (56%)
14	CLA	A	1117	-	65,73,73	2.19	19 (29%)	76,113,113	2.55	26 (34%)
14	CLA	A	1102	-	60,68,73	2.34	18 (30%)	70,107,113	2.74	23 (32%)
17	SF4	c	3002	-	0,12,12	-	-	-	-	-
16	PQN	a	2001	-	34,34,34	1.44	2 (5%)	42,45,45	1.10	1 (2%)
14	CLA	B	1213	-	55,63,73	2.41	19 (34%)	64,101,113	2.85	25 (39%)
14	CLA	b	1222	-	65,73,73	2.23	19 (29%)	76,113,113	2.69	29 (38%)
18	BCR	i	4018	-	41,41,41	3.12	8 (19%)	56,56,56	6.69	23 (41%)
14	CLA	A	1112	-	45,53,73	2.52	20 (44%)	52,89,113	2.89	20 (38%)
14	CLA	b	1223	-	65,73,73	2.20	20 (30%)	76,113,113	2.58	24 (31%)
18	BCR	b	4013	-	41,41,41	2.83	6 (14%)	56,56,56	6.56	24 (42%)
14	CLA	G	1112	-	45,53,73	2.52	20 (44%)	52,89,113	2.89	20 (38%)
14	CLA	a	1110	-	45,53,73	2.50	18 (40%)	52,89,113	3.05	20 (38%)
17	SF4	a	3001	-	0,12,12	-	-	-	-	-
14	CLA	G	1103	-	60,68,73	2.22	17 (28%)	70,107,113	2.75	24 (34%)
14	CLA	b	1211	-	65,73,73	2.21	19 (29%)	76,113,113	2.49	23 (30%)
18	BCR	H	4005	-	41,41,41	2.87	7 (17%)	56,56,56	6.62	28 (50%)
14	CLA	A	1118	-	55,63,73	2.36	18 (32%)	64,101,113	2.87	27 (42%)
14	CLA	b	1229	-	60,68,73	2.31	19 (31%)	70,107,113	2.77	23 (32%)
14	CLA	b	1238	-	65,73,73	2.24	18 (27%)	76,113,113	2.69	29 (38%)
14	CLA	a	1104	-	65,73,73	2.15	19 (29%)	76,113,113	2.68	25 (32%)
14	CLA	a	1118	-	55,63,73	2.36	18 (32%)	64,101,113	2.87	27 (42%)
14	CLA	H	1219	-	45,53,73	2.54	18 (40%)	52,89,113	2.87	21 (40%)
14	CLA	a	1013	-	60,68,73	2.35	19 (31%)	70,107,113	2.83	27 (38%)
14	CLA	H	1239	-	65,73,73	2.21	20 (30%)	76,113,113	2.76	29 (38%)
14	CLA	b	1023	-	65,73,73	2.19	20 (30%)	76,113,113	2.92	29 (38%)
15	F6C	a	1121	-	49,54,74	3.13	24 (48%)	46,90,114	3.88	25 (54%)
14	CLA	a	1140	-	65,73,73	2.18	18 (27%)	76,113,113	2.51	22 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	G	1110	-	45,53,73	2.50	18 (40%)	52,89,113	3.05	20 (38%)
18	BCR	b	4010	-	41,41,41	2.99	7 (17%)	56,56,56	6.57	22 (39%)
14	CLA	H	1231	-	55,63,73	2.44	19 (34%)	64,101,113	2.80	24 (37%)
14	CLA	G	1132	-	65,73,73	2.18	18 (27%)	76,113,113	2.59	24 (31%)
14	CLA	a	1106	-	45,53,73	2.50	18 (40%)	52,89,113	3.04	22 (42%)
14	CLA	b	1210	-	65,73,73	2.22	21 (32%)	76,113,113	2.66	28 (36%)
14	CLA	K	1401	-	45,53,73	2.58	20 (44%)	52,89,113	2.89	19 (36%)
14	CLA	B	1211	-	65,73,73	2.21	19 (29%)	76,113,113	2.50	24 (31%)
18	BCR	m	4021	-	41,41,41	2.95	6 (14%)	56,56,56	6.55	23 (41%)
14	CLA	B	1207	-	45,53,73	2.50	17 (37%)	52,89,113	2.96	19 (36%)
14	CLA	G	1138	-	60,68,73	2.30	19 (31%)	70,107,113	2.68	27 (38%)
18	BCR	B	4006	-	41,41,41	2.85	6 (14%)	56,56,56	6.53	22 (39%)
14	CLA	G	1102	-	60,68,73	2.34	18 (30%)	70,107,113	2.74	22 (31%)
14	CLA	b	1226	-	65,73,73	2.27	18 (27%)	76,113,113	2.57	24 (31%)
18	BCR	I	4018	-	41,41,41	3.12	9 (21%)	56,56,56	6.69	23 (41%)
14	CLA	G	1012	-	65,73,73	2.17	17 (26%)	76,113,113	2.60	25 (32%)
18	BCR	a	4002	-	41,41,41	2.96	6 (14%)	56,56,56	6.17	23 (41%)
14	CLA	W	1701	-	45,53,73	2.50	17 (37%)	52,89,113	2.87	21 (40%)
14	CLA	G	1136	-	55,63,73	2.33	20 (36%)	64,101,113	2.92	22 (34%)
14	CLA	a	1126	-	60,68,73	2.33	17 (28%)	70,107,113	2.66	24 (34%)
14	CLA	G	1124	-	55,63,73	2.37	18 (32%)	64,101,113	2.80	25 (39%)
18	BCR	H	4010	-	41,41,41	2.99	7 (17%)	56,56,56	6.57	23 (41%)
14	CLA	a	1114	-	45,53,73	2.61	20 (44%)	52,89,113	2.91	22 (42%)
14	CLA	G	1117	-	65,73,73	2.19	19 (29%)	76,113,113	2.57	26 (34%)
18	BCR	b	4014	-	41,41,41	2.98	6 (14%)	56,56,56	6.44	24 (42%)
16	PQN	G	2001	-	34,34,34	1.45	2 (5%)	42,45,45	1.10	1 (2%)
18	BCR	A	4011	-	41,41,41	2.97	7 (17%)	56,56,56	6.52	27 (48%)
20	LMG	i	5006	-	37,37,55	1.13	3 (8%)	45,45,63	1.20	4 (8%)
14	CLA	b	1228	-	45,53,73	2.54	19 (42%)	52,89,113	2.91	23 (44%)
14	CLA	b	1204	-	65,73,73	2.22	18 (27%)	76,113,113	2.57	25 (32%)
14	CLA	a	1107	-	45,53,73	2.49	17 (37%)	52,89,113	2.77	20 (38%)
15	F6C	H	1237	-	64,69,74	2.81	26 (40%)	64,108,114	3.37	28 (43%)
17	SF4	G	3001	-	0,12,12	-	-	-	-	-
14	CLA	A	1115	-	55,63,73	2.41	19 (34%)	64,101,113	2.86	25 (39%)
18	BCR	B	4010	-	41,41,41	2.99	7 (17%)	56,56,56	6.57	22 (39%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	A	1123	-	60,68,73	2.31	19 (31%)	70,107,113	2.70	27 (38%)
14	CLA	b	1207	-	45,53,73	2.50	17 (37%)	52,89,113	2.97	19 (36%)
14	CLA	a	1139	-	45,53,73	2.50	17 (37%)	52,89,113	2.83	20 (38%)
20	LMG	b	5002	-	46,46,55	1.26	5 (10%)	54,54,63	1.17	3 (5%)
14	CLA	B	1204	-	65,73,73	2.22	18 (27%)	76,113,113	2.56	24 (31%)
14	CLA	B	1210	-	65,73,73	2.22	21 (32%)	76,113,113	2.66	28 (36%)
14	CLA	U	1501	-	60,68,73	2.29	20 (33%)	70,107,113	2.87	25 (35%)
14	CLA	H	1207	-	45,53,73	2.50	17 (37%)	52,89,113	2.97	19 (36%)
18	BCR	H	4006	-	41,41,41	2.86	6 (14%)	56,56,56	6.54	22 (39%)
14	CLA	A	1116	-	55,63,73	2.39	18 (32%)	64,101,113	2.81	26 (40%)
14	CLA	G	1013	-	60,68,73	2.36	19 (31%)	70,107,113	2.83	28 (40%)
18	BCR	M	4021	-	41,41,41	2.95	6 (14%)	56,56,56	6.56	23 (41%)
13	CL0	a	1011	-	65,73,73	2.25	21 (32%)	76,113,113	2.81	27 (35%)
14	CLA	a	1131	-	60,68,73	2.27	18 (30%)	70,107,113	2.68	21 (30%)
14	CLA	l	1502	-	60,68,73	2.24	19 (31%)	70,107,113	2.76	23 (32%)
14	CLA	b	1220	-	55,63,73	2.41	19 (34%)	64,101,113	2.82	23 (35%)
14	CLA	a	1103	-	60,68,73	2.21	18 (30%)	70,107,113	2.75	24 (34%)
14	CLA	B	1222	-	65,73,73	2.24	19 (29%)	76,113,113	2.69	29 (38%)
18	BCR	B	4005	-	41,41,41	2.86	7 (17%)	56,56,56	6.62	27 (48%)
20	LMG	A	5005	-	46,46,55	1.28	5 (10%)	54,54,63	1.15	2 (3%)
18	BCR	A	4001	-	41,41,41	2.97	6 (14%)	56,56,56	6.48	25 (44%)
14	CLA	A	1139	-	45,53,73	2.50	17 (37%)	52,89,113	2.84	20 (38%)
18	BCR	b	4009	-	41,41,41	2.92	6 (14%)	56,56,56	6.57	25 (44%)
14	CLA	U	1503	-	65,73,73	2.18	18 (27%)	76,113,113	2.61	25 (32%)
14	CLA	a	1109	-	45,53,73	2.48	19 (42%)	52,89,113	3.00	20 (38%)
14	CLA	b	1209	-	45,53,73	2.52	19 (42%)	52,89,113	2.90	21 (40%)
14	CLA	a	1117	-	65,73,73	2.19	20 (30%)	76,113,113	2.56	26 (34%)
18	BCR	b	4016	-	41,41,41	2.86	6 (14%)	56,56,56	6.49	21 (37%)
18	BCR	H	4016	-	41,41,41	2.86	6 (14%)	56,56,56	6.49	21 (37%)
14	CLA	A	1113	-	45,53,73	2.54	18 (40%)	52,89,113	3.00	21 (40%)
14	CLA	H	1226	-	65,73,73	2.27	18 (27%)	76,113,113	2.57	24 (31%)
14	CLA	b	1215	-	60,68,73	2.31	19 (31%)	70,107,113	2.66	28 (40%)
18	BCR	G	4002	-	41,41,41	2.95	6 (14%)	56,56,56	6.17	24 (42%)
14	CLA	B	1227	-	45,53,73	2.59	18 (40%)	52,89,113	2.75	23 (44%)
14	CLA	a	1138	-	60,68,73	2.31	19 (31%)	70,107,113	2.68	27 (38%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	G	1125	-	65,73,73	2.18	19 (29%)	76,113,113	2.71	26 (34%)
17	SF4	C	3003	-	0,12,12	-	-	-	-	-
21	LMT	a	6001	-	32,32,36	1.30	6 (18%)	43,43,47	1.03	4 (9%)
14	CLA	H	1233	-	45,53,73	2.53	19 (42%)	52,89,113	2.92	21 (40%)
14	CLA	G	1137	-	45,53,73	2.52	17 (37%)	52,89,113	3.12	23 (44%)
15	F6C	H	1230	-	49,54,74	3.16	25 (51%)	46,90,114	3.75	26 (56%)
19	LHG	A	5001	-	41,41,48	1.01	2 (4%)	44,47,54	1.11	4 (9%)
14	CLA	A	1109	-	45,53,73	2.49	19 (42%)	52,89,113	3.01	21 (40%)
18	BCR	A	4008	-	41,41,41	3.17	9 (21%)	56,56,56	6.33	22 (39%)
14	CLA	A	1127	-	65,73,73	2.25	19 (29%)	76,113,113	2.56	26 (34%)
14	CLA	B	1212	-	45,53,73	2.54	18 (40%)	52,89,113	2.98	22 (42%)
14	CLA	G	1139	-	45,53,73	2.51	17 (37%)	52,89,113	2.83	20 (38%)
14	CLA	b	1205	-	65,73,73	2.17	19 (29%)	76,113,113	2.78	26 (34%)
14	CLA	G	1135	-	50,58,73	2.56	21 (42%)	58,95,113	3.02	26 (44%)
14	CLA	a	1132	-	65,73,73	2.18	18 (27%)	76,113,113	2.59	24 (31%)
14	CLA	a	1137	-	45,53,73	2.51	17 (37%)	52,89,113	3.11	23 (44%)
14	CLA	A	1119	-	65,73,73	2.21	18 (27%)	76,113,113	2.49	24 (31%)
14	CLA	H	1213	-	55,63,73	2.41	19 (34%)	64,101,113	2.85	25 (39%)
19	LHG	a	5001	-	41,41,48	1.02	2 (4%)	44,47,54	1.11	4 (9%)
14	CLA	U	1502	-	60,68,73	2.24	19 (31%)	70,107,113	2.75	23 (32%)
14	CLA	G	1115	-	55,63,73	2.41	19 (34%)	64,101,113	2.85	25 (39%)
18	BCR	H	4012	-	41,41,41	2.77	6 (14%)	56,56,56	6.63	27 (48%)
14	CLA	b	1218	-	45,53,73	2.53	17 (37%)	52,89,113	2.99	21 (40%)
14	CLA	a	1124	-	55,63,73	2.37	18 (32%)	64,101,113	2.80	25 (39%)
18	BCR	a	4003	-	41,41,41	2.91	6 (14%)	56,56,56	6.50	24 (42%)
14	CLA	a	1012	-	65,73,73	2.17	18 (27%)	76,113,113	2.60	25 (32%)
14	CLA	A	1135	-	50,58,73	2.56	20 (40%)	58,95,113	3.02	25 (43%)
14	CLA	b	1231	-	55,63,73	2.44	18 (32%)	64,101,113	2.80	24 (37%)
14	CLA	G	1131	-	60,68,73	2.27	18 (30%)	70,107,113	2.68	22 (31%)
20	LMG	I	5006	-	37,37,55	1.13	3 (8%)	45,45,63	1.20	4 (8%)
14	CLA	L	1503	-	65,73,73	2.18	19 (29%)	76,113,113	2.60	25 (32%)
14	CLA	k	1401	-	45,53,73	2.58	20 (44%)	52,89,113	2.90	19 (36%)
14	CLA	a	1125	-	65,73,73	2.18	19 (29%)	76,113,113	2.71	26 (34%)
18	BCR	b	4006	-	41,41,41	2.85	6 (14%)	56,56,56	6.54	22 (39%)
16	PQN	B	2002	-	34,34,34	1.49	2 (5%)	42,45,45	1.19	1 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	A	1105	-	45,53,73	2.56	19 (42%)	52,89,113	2.89	20 (38%)
21	LMT	G	6001	-	32,32,36	1.29	6 (18%)	43,43,47	1.03	3 (6%)
18	BCR	A	4007	-	41,41,41	3.00	7 (17%)	56,56,56	6.65	24 (42%)
18	BCR	U	4022	-	41,41,41	3.07	9 (21%)	56,56,56	6.46	24 (42%)
14	CLA	B	1217	-	55,63,73	2.38	19 (34%)	64,101,113	2.76	23 (35%)
14	CLA	H	1223	-	65,73,73	2.20	19 (29%)	76,113,113	2.59	24 (31%)
14	CLA	a	1108	-	45,53,73	2.53	18 (40%)	52,89,113	2.89	21 (40%)
14	CLA	H	1225	-	65,73,73	2.25	20 (30%)	76,113,113	2.40	20 (26%)
14	CLA	B	1208	-	65,73,73	2.19	19 (29%)	76,113,113	2.56	22 (28%)
14	CLA	A	1137	-	45,53,73	2.51	17 (37%)	52,89,113	3.11	23 (44%)
17	SF4	N	3002	-	0,12,12	-	-	-	-	-
18	BCR	b	4005	-	41,41,41	2.87	7 (17%)	56,56,56	6.62	28 (50%)
14	CLA	H	1202	-	60,68,73	2.24	18 (30%)	70,107,113	2.71	24 (34%)
21	LMT	G	6002	-	29,29,36	1.39	5 (17%)	40,40,47	1.39	8 (20%)
14	CLA	A	1111	-	60,68,73	2.28	20 (33%)	70,107,113	2.73	27 (38%)
14	CLA	B	1216	-	55,63,73	2.39	19 (34%)	64,101,113	2.70	27 (42%)
14	CLA	A	1122	-	55,63,73	2.37	19 (34%)	64,101,113	2.71	26 (40%)
14	CLA	G	1116	-	55,63,73	2.39	18 (32%)	64,101,113	2.82	26 (40%)
14	CLA	H	1212	-	45,53,73	2.53	18 (40%)	52,89,113	2.97	22 (42%)
18	BCR	G	4003	-	41,41,41	2.91	6 (14%)	56,56,56	6.50	24 (42%)
14	CLA	b	1225	-	65,73,73	2.25	20 (30%)	76,113,113	2.40	20 (26%)
19	LHG	G	5001	-	41,41,48	1.01	2 (4%)	44,47,54	1.10	4 (9%)
14	CLA	G	1128	-	60,68,73	2.34	19 (31%)	70,107,113	2.70	24 (34%)
19	LHG	b	5004	-	43,43,48	0.98	2 (4%)	46,49,54	1.19	3 (6%)
14	CLA	H	1211	-	65,73,73	2.21	19 (29%)	76,113,113	2.49	23 (30%)
14	CLA	H	1224	-	65,73,73	2.21	18 (27%)	76,113,113	2.60	26 (34%)
14	CLA	b	1217	-	55,63,73	2.38	19 (34%)	64,101,113	2.76	23 (35%)
14	CLA	G	1126	-	60,68,73	2.32	18 (30%)	70,107,113	2.66	24 (34%)
14	CLA	a	1111	-	60,68,73	2.29	20 (33%)	70,107,113	2.73	26 (37%)
14	CLA	A	1106	-	45,53,73	2.50	18 (40%)	52,89,113	3.04	21 (40%)
14	CLA	G	1119	-	65,73,73	2.22	18 (27%)	76,113,113	2.48	24 (31%)
14	CLA	G	1129	-	45,53,73	2.55	18 (40%)	52,89,113	2.92	22 (42%)
14	CLA	H	1232	-	45,53,73	2.54	19 (42%)	52,89,113	2.85	22 (42%)
20	LMG	l	5007	-	50,50,55	1.34	7 (14%)	58,58,63	1.09	2 (3%)
19	LHG	B	5004	-	43,43,48	0.97	2 (4%)	46,49,54	1.19	3 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	G	1113	-	45,53,73	2.54	18 (40%)	52,89,113	2.99	21 (40%)
18	BCR	B	4004	-	41,41,41	2.87	6 (14%)	56,56,56	6.46	25 (44%)
14	CLA	H	1229	-	60,68,73	2.32	20 (33%)	70,107,113	2.77	23 (32%)
15	F6C	B	1237	-	64,69,74	2.81	26 (40%)	64,108,114	3.38	28 (43%)
18	BCR	H	4014	-	41,41,41	2.98	6 (14%)	56,56,56	6.44	24 (42%)
14	CLA	H	1214	-	60,68,73	2.32	20 (33%)	70,107,113	2.62	30 (42%)
14	CLA	B	1229	-	60,68,73	2.31	19 (31%)	70,107,113	2.77	23 (32%)
18	BCR	B	4009	-	41,41,41	2.92	6 (14%)	56,56,56	6.56	24 (42%)
18	BCR	L	4019	-	41,41,41	2.89	6 (14%)	56,56,56	6.55	23 (41%)
18	BCR	b	4012	-	41,41,41	2.76	6 (14%)	56,56,56	6.62	27 (48%)
14	CLA	X	1701	-	45,53,73	2.51	17 (37%)	52,89,113	2.87	20 (38%)
14	CLA	B	1021	-	65,73,73	2.20	20 (30%)	76,113,113	2.69	28 (36%)
14	CLA	A	1128	-	60,68,73	2.34	18 (30%)	70,107,113	2.70	25 (35%)
14	CLA	a	1113	-	45,53,73	2.55	19 (42%)	52,89,113	3.00	21 (40%)
14	CLA	B	1023	-	65,73,73	2.19	20 (30%)	76,113,113	2.93	29 (38%)
14	CLA	a	1102	-	60,68,73	2.34	18 (30%)	70,107,113	2.75	23 (32%)
14	CLA	H	1227	-	45,53,73	2.58	18 (40%)	52,89,113	2.76	23 (44%)
14	CLA	B	1223	-	65,73,73	2.20	20 (30%)	76,113,113	2.58	24 (31%)
20	LMG	R	5006	-	37,37,55	1.13	3 (8%)	45,45,63	1.20	4 (8%)
14	CLA	G	1104	-	65,73,73	2.15	19 (29%)	76,113,113	2.67	25 (32%)
14	CLA	G	1130	-	55,63,73	2.40	18 (32%)	64,101,113	2.70	23 (35%)
14	CLA	G	1118	-	55,63,73	2.36	18 (32%)	64,101,113	2.87	27 (42%)
16	PQN	A	2001	-	34,34,34	1.45	2 (5%)	42,45,45	1.10	1 (2%)
18	BCR	a	4007	-	41,41,41	2.99	7 (17%)	56,56,56	6.65	24 (42%)
14	CLA	L	1502	-	60,68,73	2.24	19 (31%)	70,107,113	2.76	23 (32%)
18	BCR	R	4020	-	41,41,41	3.16	10 (24%)	56,56,56	6.31	25 (44%)
14	CLA	H	1215	-	60,68,73	2.31	19 (31%)	70,107,113	2.67	28 (40%)
20	LMG	B	5002	-	46,46,55	1.27	5 (10%)	54,54,63	1.17	3 (5%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	a	1115	-	1/1/13/20	9/25/103/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
17	SF4	A	3001	-	-	-	0/6/5/5
18	BCR	G	4008	-	-	10/29/63/63	0/2/2/2
18	BCR	B	4014	-	-	11/29/63/63	0/2/2/2
14	CLA	H	1228	-	1/1/11/20	7/13/91/115	-
14	CLA	a	1119	-	1/1/15/20	17/37/115/115	-
18	BCR	H	4009	-	-	5/29/63/63	0/2/2/2
18	BCR	H	4004	-	-	9/29/63/63	0/2/2/2
15	F6C	A	1120	-	-	9/17/73/97	-
14	CLA	B	1205	-	1/1/15/20	15/37/115/115	-
14	CLA	B	1224	-	1/1/15/20	12/37/115/115	-
18	BCR	a	4011	-	-	15/29/63/63	0/2/2/2
14	CLA	B	1022	-	1/1/15/20	16/37/115/115	-
14	CLA	a	1116	-	1/1/13/20	10/25/103/115	-
17	SF4	C	3002	-	-	-	0/6/5/5
18	BCR	H	4013	-	-	19/29/63/63	0/2/2/2
14	CLA	B	1236	-	1/1/11/20	7/13/91/115	-
14	CLA	B	1226	-	1/1/15/20	18/37/115/115	-
14	CLA	A	1013	-	1/1/14/20	13/31/109/115	-
14	CLA	H	1021	-	1/1/15/20	16/37/115/115	-
14	CLA	a	1112	-	1/1/11/20	4/13/91/115	-
17	SF4	c	3003	-	-	-	0/6/5/5
18	BCR	B	4013	-	-	19/29/63/63	0/2/2/2
14	CLA	b	1212	-	1/1/11/20	9/13/91/115	-
14	CLA	b	1239	-	1/1/15/20	18/37/115/115	-
14	CLA	B	1233	-	1/1/11/20	7/13/91/115	-
19	LHG	H	5004	-	-	21/48/48/53	-
14	CLA	H	1234	-	1/1/13/20	9/25/103/115	-
15	F6C	A	1121	-	-	8/17/73/97	-
14	CLA	a	1130	-	1/1/13/20	8/25/103/115	-
14	CLA	H	1201	-	1/1/13/20	12/25/103/115	-
14	CLA	B	1235	-	1/1/14/20	9/31/109/115	-
13	CL0	G	1011	-	3/3/20/25	9/37/135/135	-
14	CLA	b	1236	-	1/1/11/20	7/13/91/115	-
16	PQN	H	2002	-	-	12/23/43/43	0/2/2/2
14	CLA	A	1136	-	1/1/13/20	14/25/103/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	G	1122	-	1/1/13/20	10/25/103/115	-
14	CLA	A	1101	-	1/1/11/20	6/13/91/115	-
14	CLA	H	1235	-	1/1/14/20	9/31/109/115	-
14	CLA	l	1501	-	1/1/14/20	12/31/109/115	-
14	CLA	b	1234	-	1/1/13/20	9/25/103/115	-
14	CLA	G	1123	-	1/1/14/20	8/31/109/115	-
18	BCR	I	4020	-	-	11/29/63/63	0/2/2/2
18	BCR	G	4001	-	-	12/29/63/63	0/2/2/2
14	CLA	H	1012	-	1/1/15/20	16/37/115/115	-
14	CLA	H	1221	-	1/1/14/20	12/31/109/115	-
14	CLA	G	1108	-	1/1/11/20	6/13/91/115	-
14	CLA	A	1114	-	1/1/11/20	7/13/91/115	-
14	CLA	a	1127	-	1/1/15/20	18/37/115/115	-
14	CLA	A	1110	-	1/1/11/20	6/13/91/115	-
20	LMG	L	5007	-	-	13/45/65/70	0/1/1/1
20	LMG	U	5007	-	-	13/45/65/70	0/1/1/1
14	CLA	a	1123	-	1/1/14/20	8/31/109/115	-
14	CLA	B	1215	-	1/1/14/20	18/31/109/115	-
14	CLA	B	1202	-	1/1/14/20	11/31/109/115	-
18	BCR	G	4011	-	-	15/29/63/63	0/2/2/2
18	BCR	U	4019	-	-	8/29/63/63	0/2/2/2
18	BCR	A	4002	-	-	9/29/63/63	0/2/2/2
14	CLA	H	1203	-	1/1/15/20	17/37/115/115	-
18	BCR	H	4017	-	-	12/29/63/63	0/2/2/2
14	CLA	H	1217	-	1/1/13/20	10/25/103/115	-
14	CLA	b	1219	-	1/1/11/20	7/13/91/115	-
14	CLA	b	1208	-	1/1/15/20	11/37/115/115	-
14	CLA	G	1140	-	1/1/15/20	20/37/115/115	-
14	CLA	b	1216	-	1/1/13/20	10/25/103/115	-
18	BCR	b	4004	-	-	8/29/63/63	0/2/2/2
14	CLA	H	1216	-	1/1/13/20	10/25/103/115	-
14	CLA	B	1238	-	1/1/15/20	16/37/115/115	-
14	CLA	B	1219	-	1/1/11/20	7/13/91/115	-
14	CLA	B	1201	-	1/1/13/20	12/25/103/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	a	1105	-	1/1/11/20	5/13/91/115	-
20	LMG	G	5005	-	-	16/41/61/70	0/1/1/1
14	CLA	B	1239	-	1/1/15/20	18/37/115/115	-
14	CLA	G	1109	-	1/1/11/20	5/13/91/115	-
14	CLA	G	1111	-	1/1/14/20	13/31/109/115	-
14	CLA	H	1206	-	1/1/11/20	6/13/91/115	-
18	BCR	B	4017	-	-	12/29/63/63	0/2/2/2
14	CLA	b	1227	-	1/1/11/20	6/13/91/115	-
14	CLA	A	1129	-	1/1/11/20	4/13/91/115	-
14	CLA	A	1140	-	1/1/15/20	20/37/115/115	-
18	BCR	B	4012	-	-	20/29/63/63	0/2/2/2
21	LMT	A	6001	-	-	9/17/57/61	0/2/2/2
21	LMT	A	6002	-	-	3/14/54/61	0/2/2/2
14	CLA	A	1130	-	1/1/13/20	8/25/103/115	-
15	F6C	G	1120	-	-	9/17/73/97	-
18	BCR	i	4020	-	-	11/29/63/63	0/2/2/2
14	CLA	G	1133	-	1/1/14/20	17/31/109/115	-
14	CLA	H	1208	-	1/1/15/20	10/37/115/115	-
14	CLA	a	1122	-	1/1/13/20	10/25/103/115	-
14	CLA	b	1201	-	1/1/13/20	12/25/103/115	-
14	CLA	b	1214	-	1/1/14/20	16/31/109/115	-
18	BCR	G	4007	-	-	14/29/63/63	0/2/2/2
14	CLA	B	1225	-	1/1/15/20	16/37/115/115	-
14	CLA	T	1401	-	1/1/11/20	7/13/91/115	-
14	CLA	B	1232	-	1/1/11/20	3/13/91/115	-
14	CLA	H	1205	-	1/1/15/20	15/37/115/115	-
14	CLA	B	1214	-	1/1/14/20	16/31/109/115	-
14	CLA	l	1503	-	1/1/15/20	12/37/115/115	-
14	CLA	B	1220	-	1/1/13/20	12/25/103/115	-
14	CLA	B	1228	-	1/1/11/20	7/13/91/115	-
14	CLA	b	1021	-	1/1/15/20	16/37/115/115	-
14	CLA	A	1124	-	1/1/13/20	7/25/103/115	-
14	CLA	a	1135	-	1/1/12/20	4/19/97/115	-
14	CLA	A	1107	-	1/1/11/20	3/13/91/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
18	BCR	a	4001	-	-	12/29/63/63	0/2/2/2
14	CLA	H	1222	-	1/1/15/20	16/37/115/115	-
14	CLA	A	1131	-	1/1/14/20	15/31/109/115	-
14	CLA	G	1105	-	1/1/11/20	5/13/91/115	-
14	CLA	b	1203	-	1/1/15/20	17/37/115/115	-
13	CL0	A	1011	-	3/3/20/25	9/37/135/135	-
14	CLA	H	1238	-	1/1/15/20	15/37/115/115	-
15	F6C	G	1121	-	-	8/17/73/97	-
14	CLA	A	1138	-	1/1/14/20	15/31/109/115	-
14	CLA	b	1224	-	1/1/15/20	11/37/115/115	-
18	BCR	L	4022	-	-	7/29/63/63	0/2/2/2
14	CLA	G	1106	-	1/1/11/20	7/13/91/115	-
14	CLA	b	1022	-	1/1/15/20	16/37/115/115	-
14	CLA	H	1210	-	1/1/15/20	11/37/115/115	-
14	CLA	A	1126	-	1/1/14/20	24/31/109/115	-
14	CLA	H	1220	-	1/1/13/20	12/25/103/115	-
14	CLA	H	1023	-	1/1/15/20	15/37/115/115	-
20	LMG	a	5005	-	-	16/41/61/70	0/1/1/1
14	CLA	H	1209	-	1/1/11/20	2/13/91/115	-
18	BCR	R	4018	-	-	11/29/63/63	0/2/2/2
14	CLA	G	1101	-	1/1/11/20	6/13/91/115	-
14	CLA	B	1209	-	1/1/11/20	2/13/91/115	-
14	CLA	x	1701	-	1/1/11/20	6/13/91/115	-
18	BCR	l	4019	-	-	8/29/63/63	0/2/2/2
18	BCR	B	4016	-	-	15/29/63/63	0/2/2/2
18	BCR	l	4022	-	-	7/29/63/63	0/2/2/2
14	CLA	G	1127	-	1/1/15/20	18/37/115/115	-
14	CLA	b	1206	-	1/1/11/20	6/13/91/115	-
14	CLA	G	1107	-	1/1/11/20	3/13/91/115	-
14	CLA	G	1114	-	1/1/11/20	7/13/91/115	-
18	BCR	V	4021	-	-	12/29/63/63	0/2/2/2
21	LMT	a	6002	-	-	3/14/54/61	0/2/2/2
14	CLA	B	1206	-	1/1/11/20	6/13/91/115	-
15	F6C	a	1120	-	-	9/17/73/97	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	b	1235	-	1/1/14/20	9/31/109/115	-
14	CLA	B	1203	-	1/1/15/20	17/37/115/115	-
15	F6C	B	1230	-	-	8/17/73/97	-
14	CLA	A	1133	-	1/1/14/20	17/31/109/115	-
14	CLA	B	1218	-	1/1/11/20	6/13/91/115	-
14	CLA	b	1213	-	1/1/13/20	14/25/103/115	-
14	CLA	A	1103	-	1/1/14/20	18/31/109/115	-
18	BCR	A	4003	-	-	14/29/63/63	0/2/2/2
14	CLA	A	1132	-	1/1/15/20	18/37/115/115	-
14	CLA	b	1221	-	1/1/14/20	12/31/109/115	-
14	CLA	A	1012	-	1/1/15/20	15/37/115/115	-
16	PQN	b	2002	-	-	12/23/43/43	0/2/2/2
18	BCR	a	4008	-	-	10/29/63/63	0/2/2/2
14	CLA	A	1104	-	1/1/15/20	12/37/115/115	-
14	CLA	A	1108	-	1/1/11/20	6/13/91/115	-
14	CLA	L	1501	-	1/1/14/20	12/31/109/115	-
17	SF4	N	3003	-	-	-	0/6/5/5
14	CLA	b	1233	-	1/1/11/20	7/13/91/115	-
14	CLA	H	1236	-	1/1/11/20	7/13/91/115	-
14	CLA	B	1221	-	1/1/14/20	12/31/109/115	-
14	CLA	H	1204	-	1/1/15/20	20/37/115/115	-
14	CLA	A	1125	-	1/1/15/20	22/37/115/115	-
14	CLA	b	1232	-	1/1/11/20	3/13/91/115	-
14	CLA	a	1133	-	1/1/14/20	17/31/109/115	-
14	CLA	b	1202	-	1/1/14/20	11/31/109/115	-
15	F6C	b	1237	-	-	19/35/91/97	-
14	CLA	a	1129	-	1/1/11/20	4/13/91/115	-
14	CLA	B	1234	-	1/1/13/20	9/25/103/115	-
14	CLA	a	1128	-	1/1/14/20	11/31/109/115	-
20	LMG	H	5002	-	-	17/41/61/70	0/1/1/1
14	CLA	a	1136	-	1/1/13/20	14/25/103/115	-
14	CLA	H	1218	-	1/1/11/20	6/13/91/115	-
14	CLA	a	1101	-	1/1/11/20	6/13/91/115	-
14	CLA	B	1231	-	1/1/13/20	5/25/103/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
18	BCR	b	4017	-	-	12/29/63/63	0/2/2/2
15	F6C	b	1230	-	-	3/17/73/97	-
14	CLA	A	1117	-	1/1/15/20	17/37/115/115	-
14	CLA	A	1102	-	1/1/14/20	13/31/109/115	-
17	SF4	c	3002	-	-	-	0/6/5/5
16	PQN	a	2001	-	-	9/23/43/43	0/2/2/2
14	CLA	B	1213	-	1/1/13/20	14/25/103/115	-
14	CLA	b	1222	-	1/1/15/20	16/37/115/115	-
18	BCR	i	4018	-	-	11/29/63/63	0/2/2/2
14	CLA	A	1112	-	1/1/11/20	4/13/91/115	-
14	CLA	b	1223	-	1/1/15/20	11/37/115/115	-
18	BCR	b	4013	-	-	19/29/63/63	0/2/2/2
14	CLA	G	1112	-	1/1/11/20	4/13/91/115	-
14	CLA	a	1110	-	1/1/11/20	6/13/91/115	-
17	SF4	a	3001	-	-	-	0/6/5/5
14	CLA	G	1103	-	1/1/14/20	18/31/109/115	-
14	CLA	b	1211	-	1/1/15/20	17/37/115/115	-
18	BCR	H	4005	-	-	4/29/63/63	0/2/2/2
14	CLA	A	1118	-	1/1/13/20	12/25/103/115	-
14	CLA	b	1229	-	1/1/14/20	15/31/109/115	-
14	CLA	b	1238	-	1/1/15/20	16/37/115/115	-
14	CLA	a	1104	-	1/1/15/20	12/37/115/115	-
14	CLA	a	1118	-	1/1/13/20	12/25/103/115	-
14	CLA	H	1219	-	1/1/11/20	7/13/91/115	-
14	CLA	a	1013	-	1/1/14/20	13/31/109/115	-
14	CLA	H	1239	-	1/1/15/20	18/37/115/115	-
14	CLA	b	1023	-	1/1/15/20	15/37/115/115	-
15	F6C	a	1121	-	-	8/17/73/97	-
14	CLA	a	1140	-	1/1/15/20	20/37/115/115	-
14	CLA	G	1110	-	1/1/11/20	6/13/91/115	-
18	BCR	b	4010	-	-	8/29/63/63	0/2/2/2
14	CLA	H	1231	-	1/1/13/20	5/25/103/115	-
14	CLA	G	1132	-	1/1/15/20	18/37/115/115	-
14	CLA	a	1106	-	1/1/11/20	7/13/91/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	b	1210	-	1/1/15/20	11/37/115/115	-
14	CLA	K	1401	-	1/1/11/20	7/13/91/115	-
14	CLA	B	1211	-	1/1/15/20	17/37/115/115	-
18	BCR	m	4021	-	-	12/29/63/63	0/2/2/2
14	CLA	B	1207	-	1/1/11/20	9/13/91/115	-
14	CLA	G	1138	-	1/1/14/20	15/31/109/115	-
18	BCR	B	4006	-	-	11/29/63/63	0/2/2/2
14	CLA	G	1102	-	1/1/14/20	13/31/109/115	-
14	CLA	b	1226	-	1/1/15/20	18/37/115/115	-
18	BCR	I	4018	-	-	10/29/63/63	0/2/2/2
14	CLA	G	1012	-	1/1/15/20	15/37/115/115	-
18	BCR	a	4002	-	-	9/29/63/63	0/2/2/2
14	CLA	W	1701	-	1/1/11/20	6/13/91/115	-
14	CLA	G	1136	-	1/1/13/20	14/25/103/115	-
14	CLA	a	1126	-	1/1/14/20	24/31/109/115	-
14	CLA	G	1124	-	1/1/13/20	7/25/103/115	-
18	BCR	H	4010	-	-	9/29/63/63	0/2/2/2
14	CLA	a	1114	-	1/1/11/20	7/13/91/115	-
14	CLA	G	1117	-	1/1/15/20	17/37/115/115	-
18	BCR	b	4014	-	-	11/29/63/63	0/2/2/2
16	PQN	G	2001	-	-	9/23/43/43	0/2/2/2
18	BCR	A	4011	-	-	15/29/63/63	0/2/2/2
20	LMG	i	5006	-	-	13/32/52/70	0/1/1/1
14	CLA	b	1228	-	1/1/11/20	7/13/91/115	-
14	CLA	b	1204	-	1/1/15/20	20/37/115/115	-
14	CLA	a	1107	-	1/1/11/20	3/13/91/115	-
15	F6C	H	1237	-	-	19/35/91/97	-
17	SF4	G	3001	-	-	-	0/6/5/5
14	CLA	A	1115	-	1/1/13/20	9/25/103/115	-
18	BCR	B	4010	-	-	8/29/63/63	0/2/2/2
14	CLA	A	1123	-	1/1/14/20	8/31/109/115	-
14	CLA	b	1207	-	1/1/11/20	9/13/91/115	-
14	CLA	a	1139	-	1/1/11/20	4/13/91/115	-
20	LMG	b	5002	-	-	17/41/61/70	0/1/1/1

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	B	1204	-	1/1/15/20	20/37/115/115	-
14	CLA	B	1210	-	1/1/15/20	11/37/115/115	-
14	CLA	U	1501	-	1/1/14/20	12/31/109/115	-
14	CLA	H	1207	-	1/1/11/20	9/13/91/115	-
18	BCR	H	4006	-	-	11/29/63/63	0/2/2/2
14	CLA	A	1116	-	1/1/13/20	10/25/103/115	-
14	CLA	G	1013	-	1/1/14/20	13/31/109/115	-
18	BCR	M	4021	-	-	12/29/63/63	0/2/2/2
13	CL0	a	1011	-	3/3/20/25	9/37/135/135	-
14	CLA	a	1131	-	1/1/14/20	15/31/109/115	-
14	CLA	l	1502	-	1/1/14/20	12/31/109/115	-
14	CLA	b	1220	-	1/1/13/20	12/25/103/115	-
14	CLA	a	1103	-	1/1/14/20	18/31/109/115	-
14	CLA	B	1222	-	1/1/15/20	16/37/115/115	-
18	BCR	B	4005	-	-	4/29/63/63	0/2/2/2
20	LMG	A	5005	-	-	16/41/61/70	0/1/1/1
18	BCR	A	4001	-	-	12/29/63/63	0/2/2/2
14	CLA	A	1139	-	1/1/11/20	4/13/91/115	-
18	BCR	b	4009	-	-	5/29/63/63	0/2/2/2
14	CLA	U	1503	-	1/1/15/20	12/37/115/115	-
14	CLA	a	1109	-	1/1/11/20	5/13/91/115	-
14	CLA	b	1209	-	1/1/11/20	2/13/91/115	-
14	CLA	a	1117	-	1/1/15/20	17/37/115/115	-
18	BCR	b	4016	-	-	15/29/63/63	0/2/2/2
18	BCR	H	4016	-	-	15/29/63/63	0/2/2/2
14	CLA	A	1113	-	1/1/11/20	7/13/91/115	-
14	CLA	H	1226	-	1/1/15/20	18/37/115/115	-
14	CLA	b	1215	-	1/1/14/20	18/31/109/115	-
18	BCR	G	4002	-	-	9/29/63/63	0/2/2/2
14	CLA	B	1227	-	1/1/11/20	6/13/91/115	-
14	CLA	a	1138	-	1/1/14/20	15/31/109/115	-
14	CLA	G	1125	-	1/1/15/20	22/37/115/115	-
17	SF4	C	3003	-	-	-	0/6/5/5
21	LMT	a	6001	-	-	9/17/57/61	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	H	1233	-	1/1/11/20	7/13/91/115	-
14	CLA	G	1137	-	1/1/11/20	7/13/91/115	-
15	F6C	H	1230	-	-	5/17/73/97	-
19	LHG	A	5001	-	-	22/46/46/53	-
14	CLA	A	1109	-	1/1/11/20	5/13/91/115	-
18	BCR	A	4008	-	-	10/29/63/63	0/2/2/2
14	CLA	A	1127	-	1/1/15/20	18/37/115/115	-
14	CLA	B	1212	-	1/1/11/20	9/13/91/115	-
14	CLA	G	1139	-	1/1/11/20	4/13/91/115	-
14	CLA	b	1205	-	1/1/15/20	15/37/115/115	-
14	CLA	G	1135	-	1/1/12/20	4/19/97/115	-
14	CLA	a	1132	-	1/1/15/20	18/37/115/115	-
14	CLA	a	1137	-	1/1/11/20	7/13/91/115	-
14	CLA	A	1119	-	1/1/15/20	17/37/115/115	-
14	CLA	H	1213	-	1/1/13/20	14/25/103/115	-
19	LHG	a	5001	-	-	22/46/46/53	-
14	CLA	U	1502	-	1/1/14/20	12/31/109/115	-
14	CLA	G	1115	-	1/1/13/20	9/25/103/115	-
18	BCR	H	4012	-	-	20/29/63/63	0/2/2/2
14	CLA	b	1218	-	1/1/11/20	6/13/91/115	-
14	CLA	a	1124	-	1/1/13/20	7/25/103/115	-
18	BCR	a	4003	-	-	14/29/63/63	0/2/2/2
14	CLA	a	1012	-	1/1/15/20	15/37/115/115	-
14	CLA	A	1135	-	1/1/12/20	4/19/97/115	-
14	CLA	b	1231	-	1/1/13/20	5/25/103/115	-
14	CLA	G	1131	-	1/1/14/20	15/31/109/115	-
20	LMG	I	5006	-	-	13/32/52/70	0/1/1/1
14	CLA	L	1503	-	1/1/15/20	12/37/115/115	-
14	CLA	k	1401	-	1/1/11/20	7/13/91/115	-
14	CLA	a	1125	-	1/1/15/20	22/37/115/115	-
18	BCR	b	4006	-	-	11/29/63/63	0/2/2/2
16	PQN	B	2002	-	-	12/23/43/43	0/2/2/2
14	CLA	A	1105	-	1/1/11/20	5/13/91/115	-
21	LMT	G	6001	-	-	9/17/57/61	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
18	BCR	A	4007	-	-	13/29/63/63	0/2/2/2
18	BCR	U	4022	-	-	7/29/63/63	0/2/2/2
14	CLA	B	1217	-	1/1/13/20	10/25/103/115	-
14	CLA	H	1223	-	1/1/15/20	11/37/115/115	-
14	CLA	a	1108	-	1/1/11/20	6/13/91/115	-
14	CLA	H	1225	-	1/1/15/20	16/37/115/115	-
14	CLA	B	1208	-	1/1/15/20	10/37/115/115	-
14	CLA	A	1137	-	1/1/11/20	7/13/91/115	-
18	BCR	b	4005	-	-	4/29/63/63	0/2/2/2
17	SF4	N	3002	-	-	-	0/6/5/5
14	CLA	H	1202	-	1/1/14/20	11/31/109/115	-
21	LMT	G	6002	-	-	3/14/54/61	0/2/2/2
14	CLA	A	1111	-	1/1/14/20	13/31/109/115	-
14	CLA	B	1216	-	1/1/13/20	10/25/103/115	-
14	CLA	A	1122	-	1/1/13/20	10/25/103/115	-
14	CLA	G	1116	-	1/1/13/20	10/25/103/115	-
14	CLA	H	1212	-	1/1/11/20	9/13/91/115	-
18	BCR	G	4003	-	-	14/29/63/63	0/2/2/2
14	CLA	b	1225	-	1/1/15/20	16/37/115/115	-
19	LHG	G	5001	-	-	22/46/46/53	-
14	CLA	G	1128	-	1/1/14/20	11/31/109/115	-
19	LHG	b	5004	-	-	21/48/48/53	-
14	CLA	H	1211	-	1/1/15/20	17/37/115/115	-
14	CLA	H	1224	-	1/1/15/20	11/37/115/115	-
14	CLA	b	1217	-	1/1/13/20	10/25/103/115	-
14	CLA	G	1126	-	1/1/14/20	24/31/109/115	-
14	CLA	a	1111	-	1/1/14/20	13/31/109/115	-
14	CLA	A	1106	-	1/1/11/20	7/13/91/115	-
14	CLA	G	1119	-	1/1/15/20	17/37/115/115	-
14	CLA	G	1129	-	1/1/11/20	4/13/91/115	-
14	CLA	H	1232	-	1/1/11/20	3/13/91/115	-
20	LMG	l	5007	-	-	13/45/65/70	0/1/1/1
19	LHG	B	5004	-	-	21/48/48/53	-
14	CLA	G	1113	-	1/1/11/20	7/13/91/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
18	BCR	B	4004	-	-	8/29/63/63	0/2/2/2
14	CLA	H	1229	-	1/1/14/20	15/31/109/115	-
15	F6C	B	1237	-	-	19/35/91/97	-
18	BCR	H	4014	-	-	11/29/63/63	0/2/2/2
14	CLA	H	1214	-	1/1/14/20	16/31/109/115	-
14	CLA	B	1229	-	1/1/14/20	15/31/109/115	-
18	BCR	B	4009	-	-	5/29/63/63	0/2/2/2
18	BCR	L	4019	-	-	8/29/63/63	0/2/2/2
18	BCR	b	4012	-	-	20/29/63/63	0/2/2/2
14	CLA	X	1701	-	1/1/11/20	6/13/91/115	-
14	CLA	B	1021	-	1/1/15/20	16/37/115/115	-
14	CLA	A	1128	-	1/1/14/20	11/31/109/115	-
14	CLA	a	1113	-	1/1/11/20	7/13/91/115	-
14	CLA	B	1023	-	1/1/15/20	15/37/115/115	-
14	CLA	a	1102	-	1/1/14/20	13/31/109/115	-
14	CLA	H	1227	-	1/1/11/20	6/13/91/115	-
14	CLA	B	1223	-	1/1/15/20	11/37/115/115	-
20	LMG	R	5006	-	-	13/32/52/70	0/1/1/1
14	CLA	G	1104	-	1/1/15/20	12/37/115/115	-
14	CLA	G	1130	-	1/1/13/20	8/25/103/115	-
14	CLA	G	1118	-	1/1/13/20	12/25/103/115	-
16	PQN	A	2001	-	-	9/23/43/43	0/2/2/2
18	BCR	a	4007	-	-	14/29/63/63	0/2/2/2
14	CLA	L	1502	-	1/1/14/20	12/31/109/115	-
18	BCR	R	4020	-	-	11/29/63/63	0/2/2/2
14	CLA	H	1215	-	1/1/14/20	18/31/109/115	-
20	LMG	B	5002	-	-	17/41/61/70	0/1/1/1

The worst 5 of 5584 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
18	R	4020	BCR	C10-C9	-9.32	1.23	1.35
18	i	4020	BCR	C10-C9	-9.31	1.23	1.35
18	I	4020	BCR	C10-C9	-9.30	1.23	1.35
18	A	4008	BCR	C10-C9	-9.22	1.23	1.35
18	G	4008	BCR	C10-C9	-9.20	1.23	1.35

The worst 5 of 7996 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
18	H	4010	BCR	C16-C17-C18	25.08	163.10	127.31
18	B	4010	BCR	C16-C17-C18	25.06	163.08	127.31
18	b	4010	BCR	C16-C17-C18	25.04	163.05	127.31
18	B	4017	BCR	C20-C21-C22	23.50	160.85	127.31
18	b	4017	BCR	C20-C21-C22	23.48	160.81	127.31

5 of 261 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
13	A	1011	CL0	ND
13	A	1011	CL0	NC
13	A	1011	CL0	NA
13	G	1011	CL0	ND
13	G	1011	CL0	NC

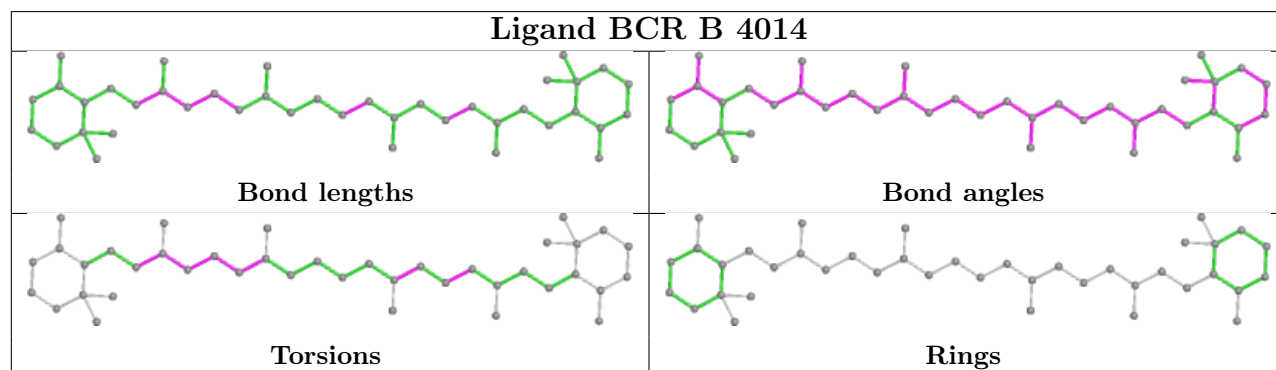
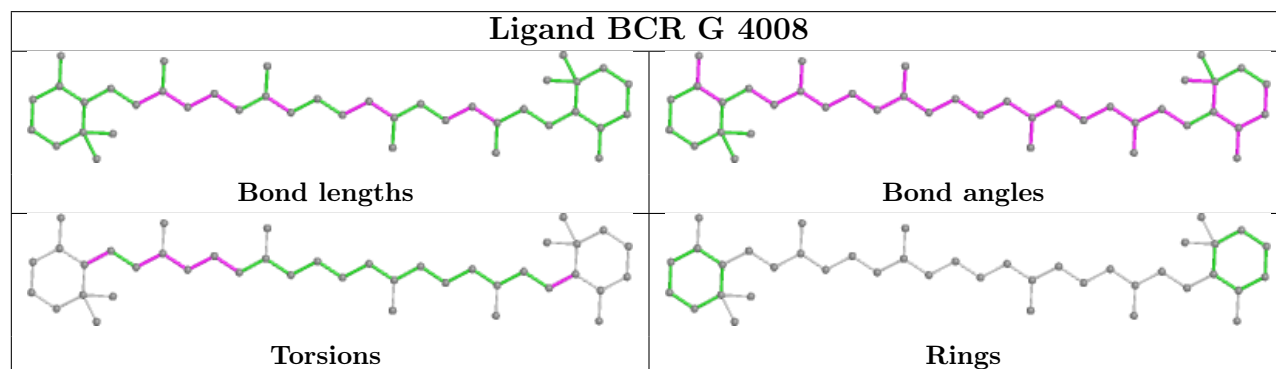
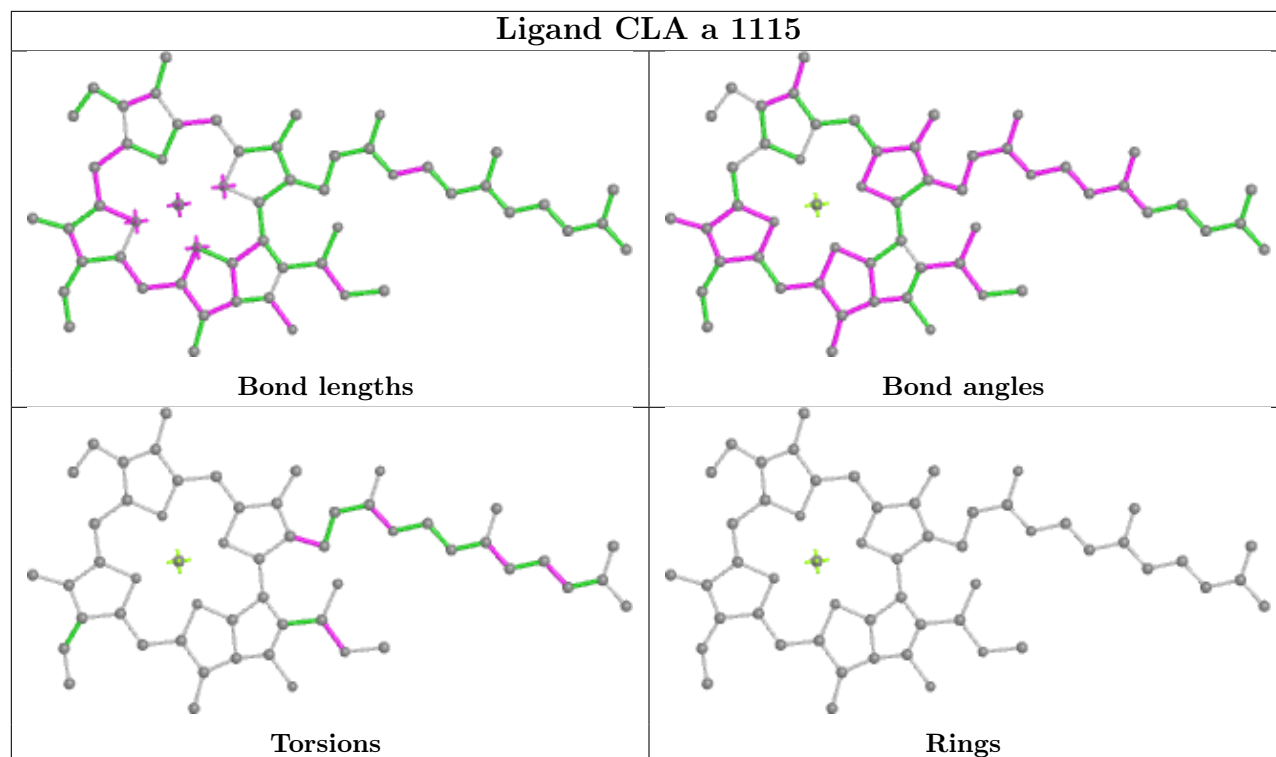
5 of 4100 torsion outliers are listed below:

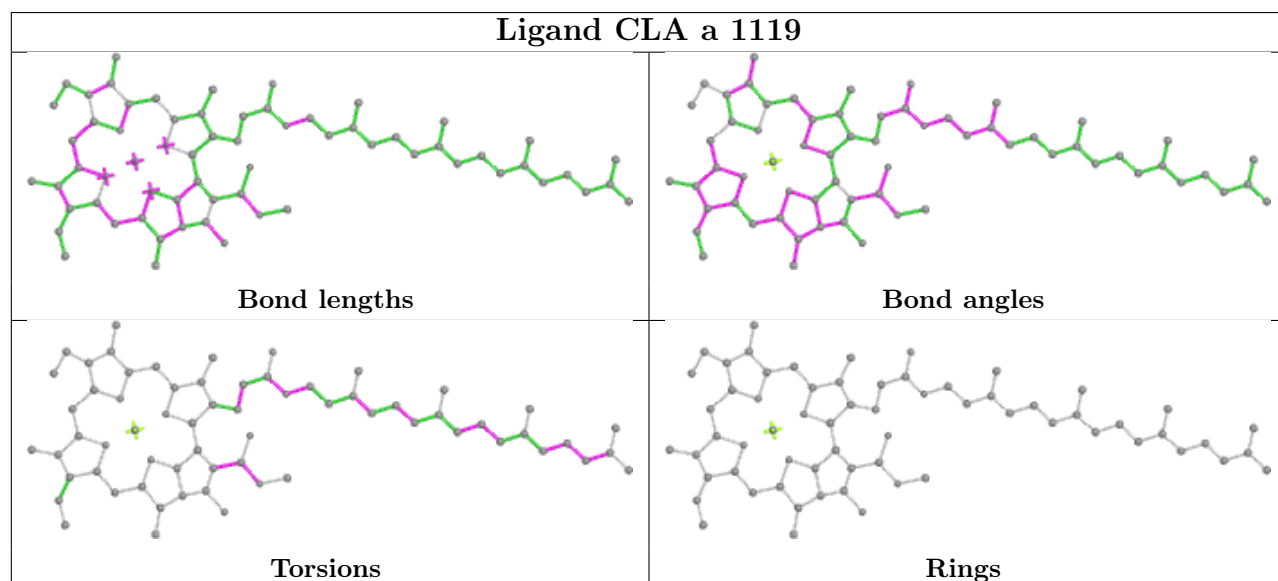
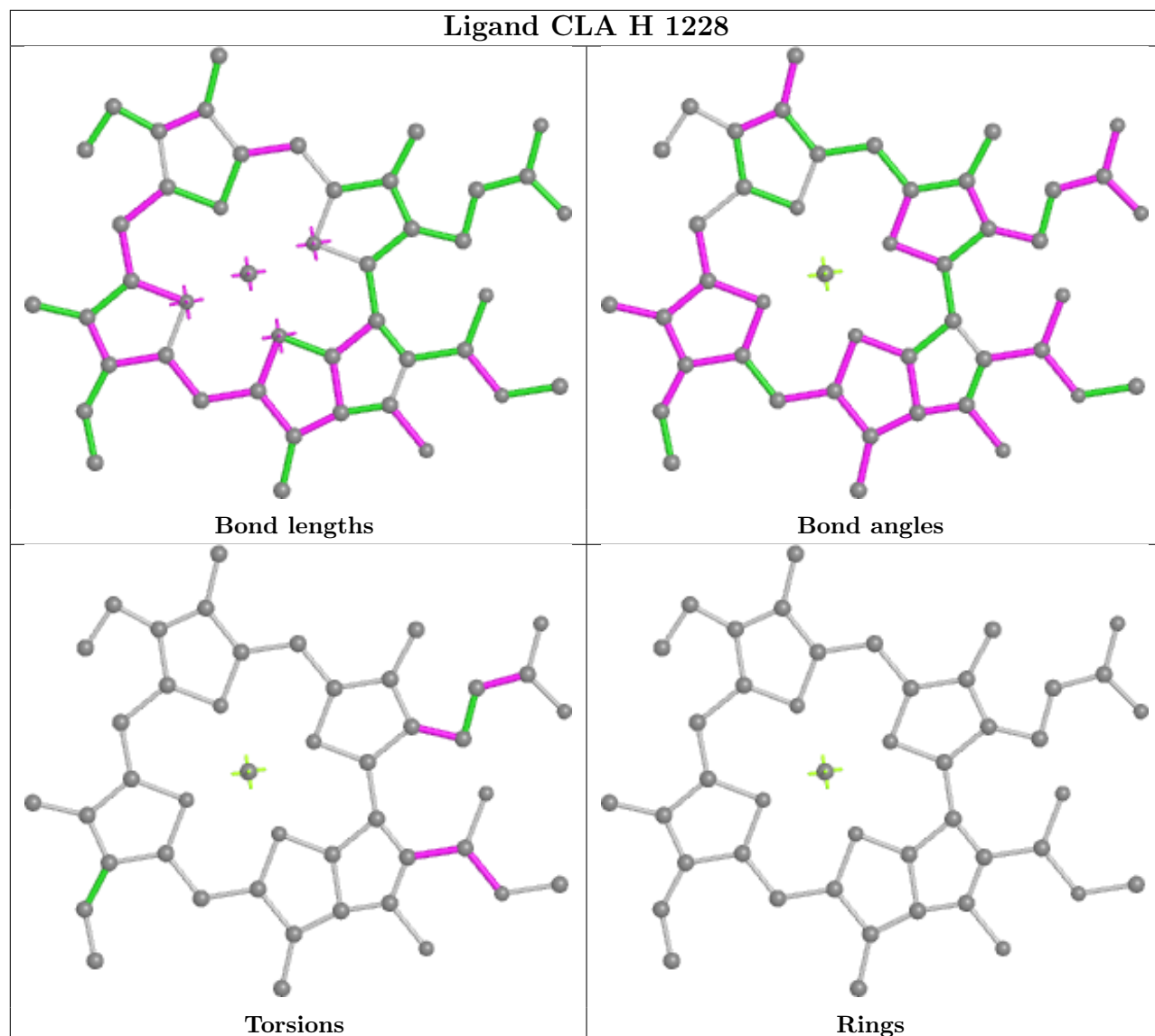
Mol	Chain	Res	Type	Atoms
13	A	1011	CL0	C2-C1-O2A-CGA
13	G	1011	CL0	C2-C1-O2A-CGA
13	a	1011	CL0	C2-C1-O2A-CGA
14	A	1012	CLA	CHA-CBD-CGD-O1D
14	A	1012	CLA	CHA-CBD-CGD-O2D

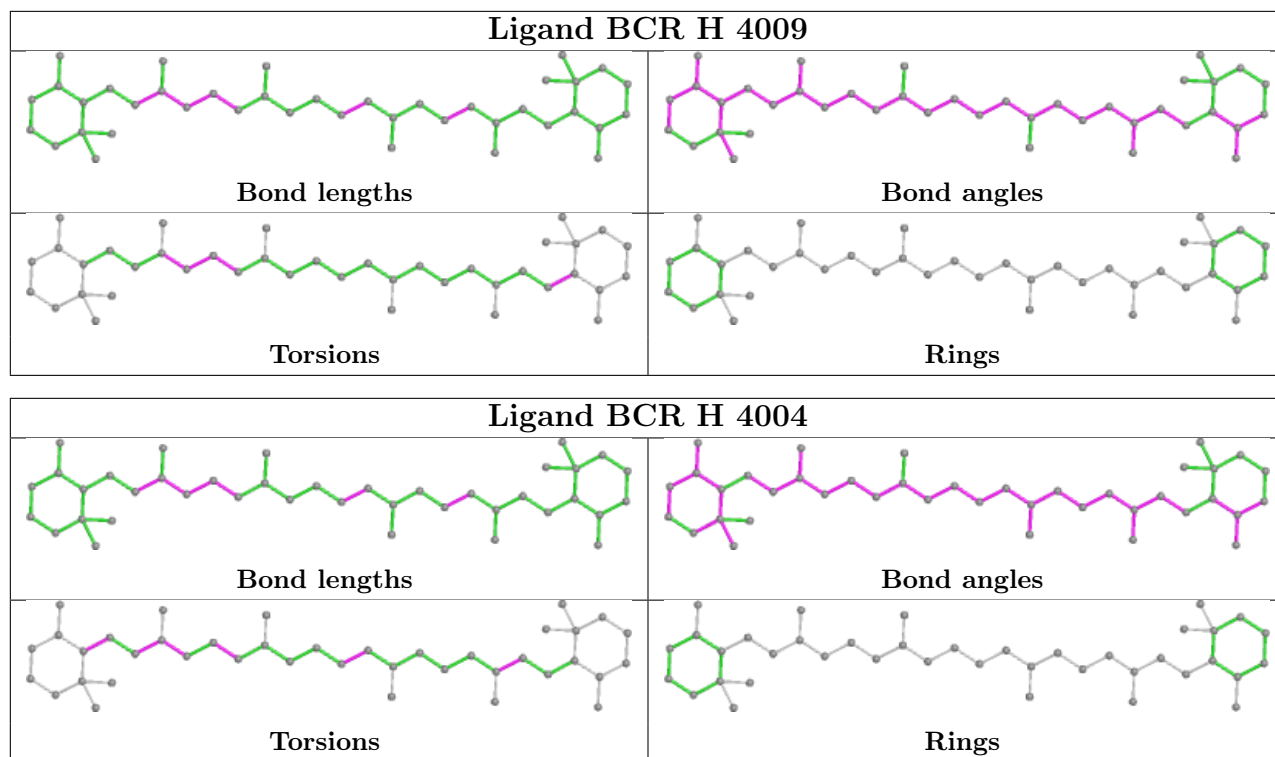
There are no ring outliers.

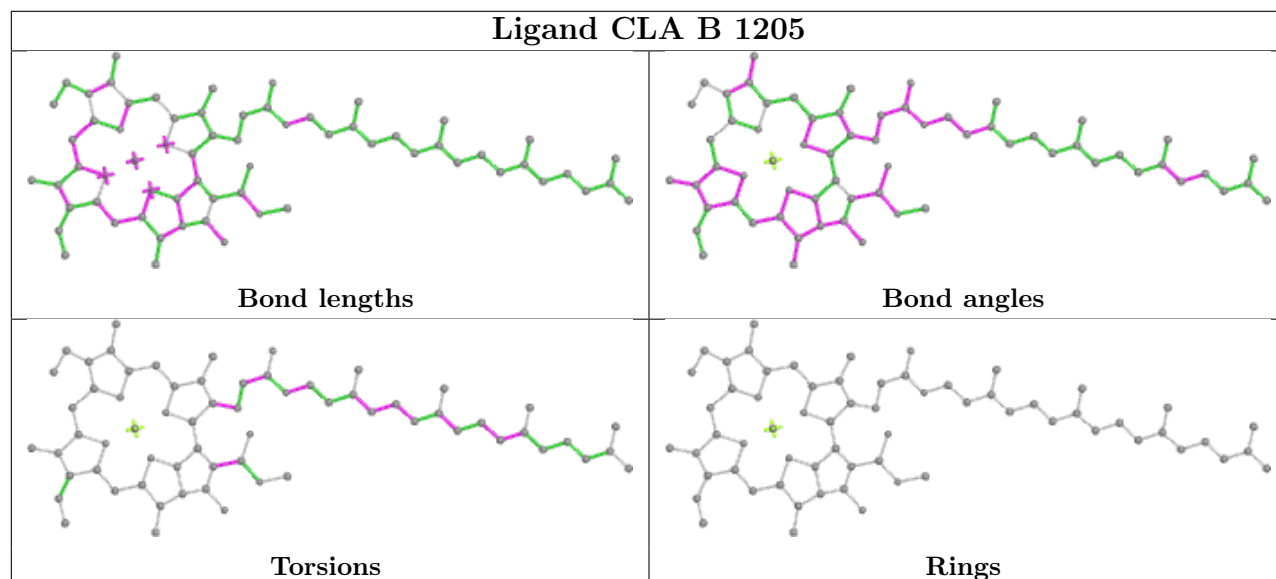
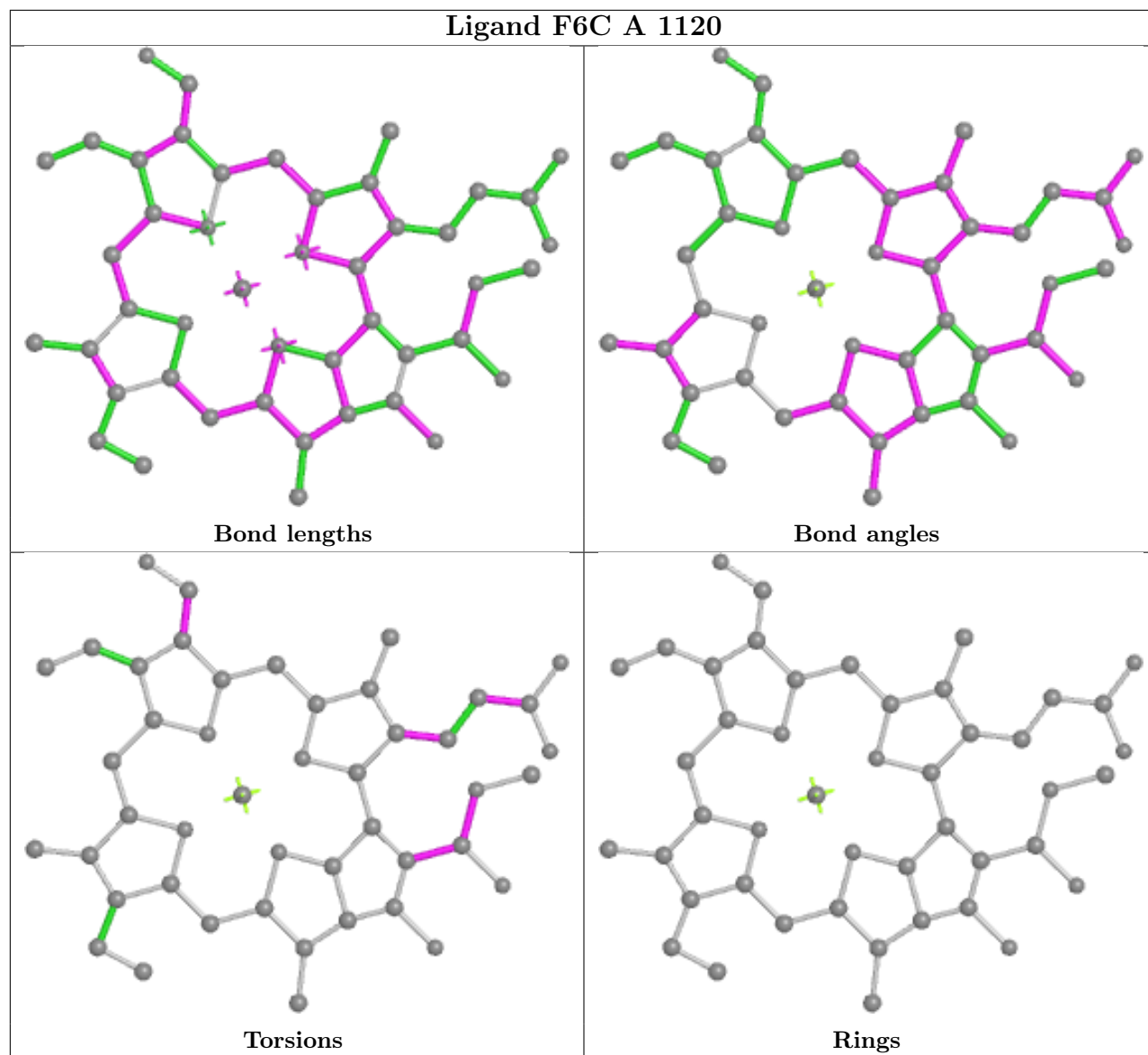
No monomer is involved in short contacts.

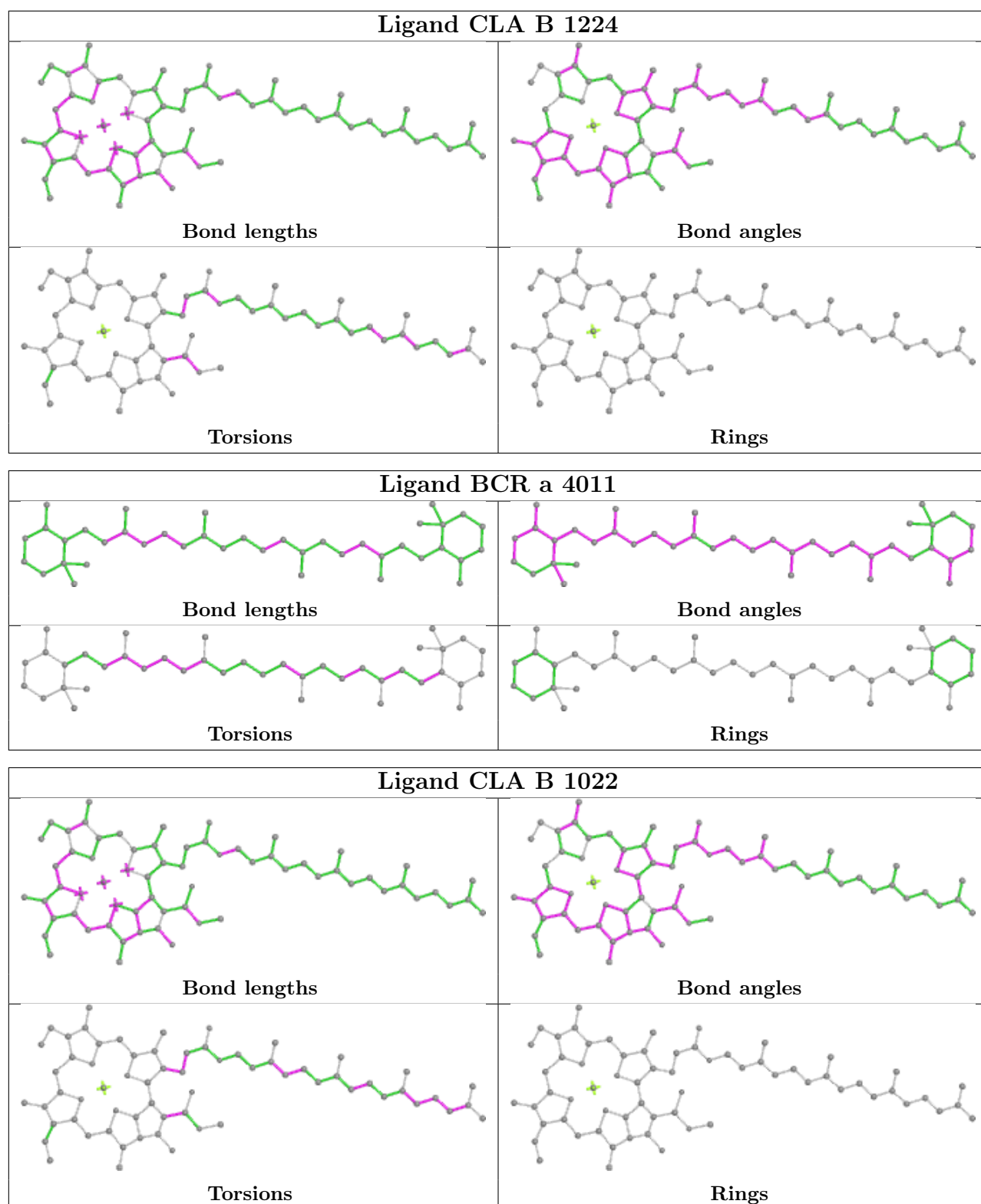
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

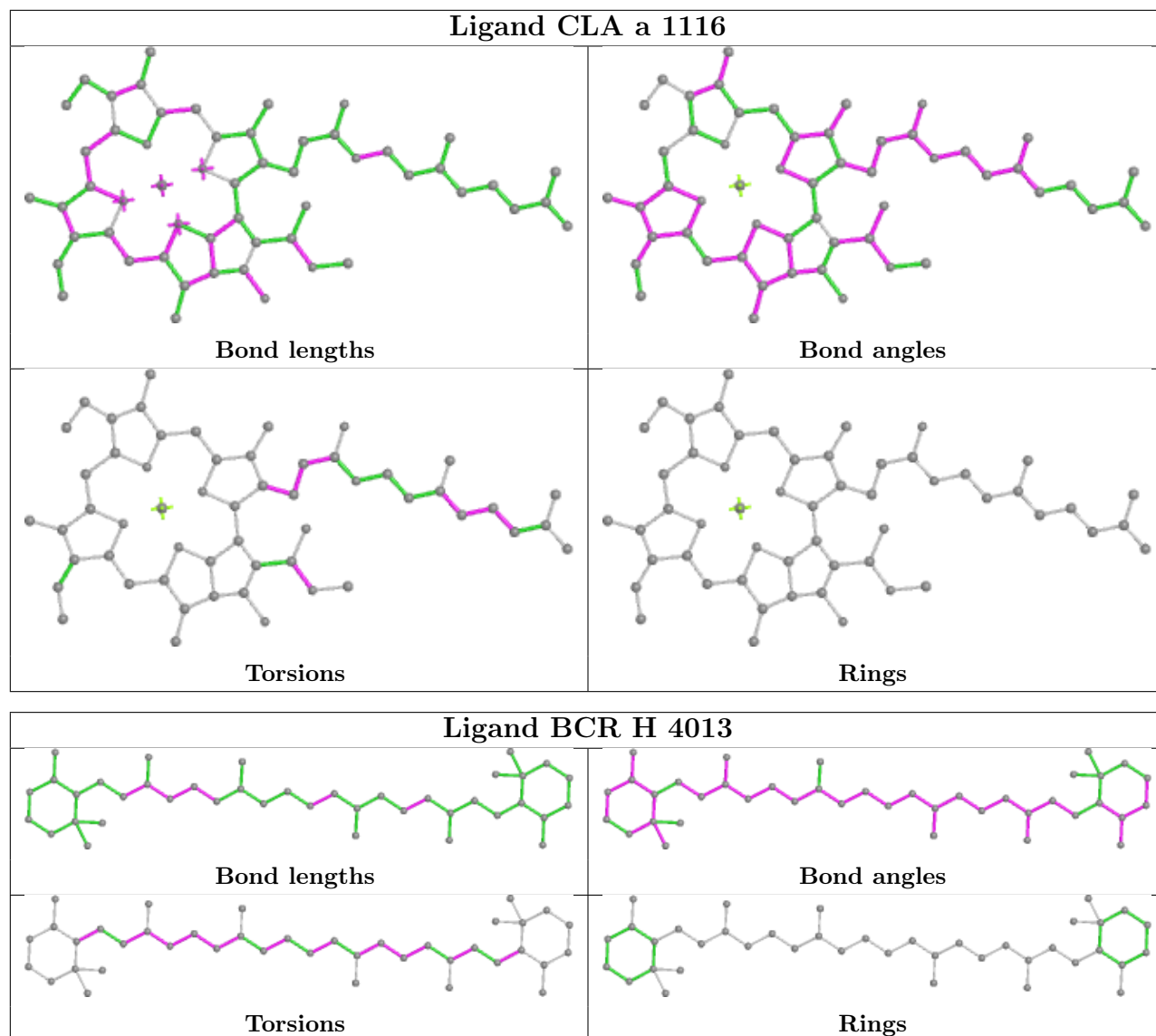


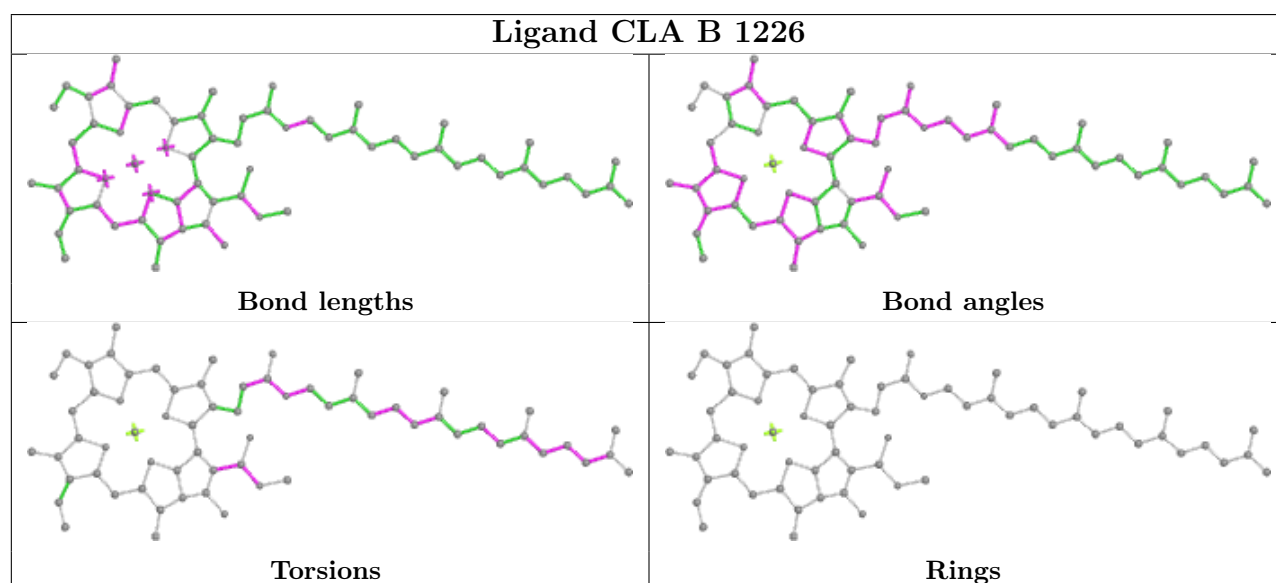
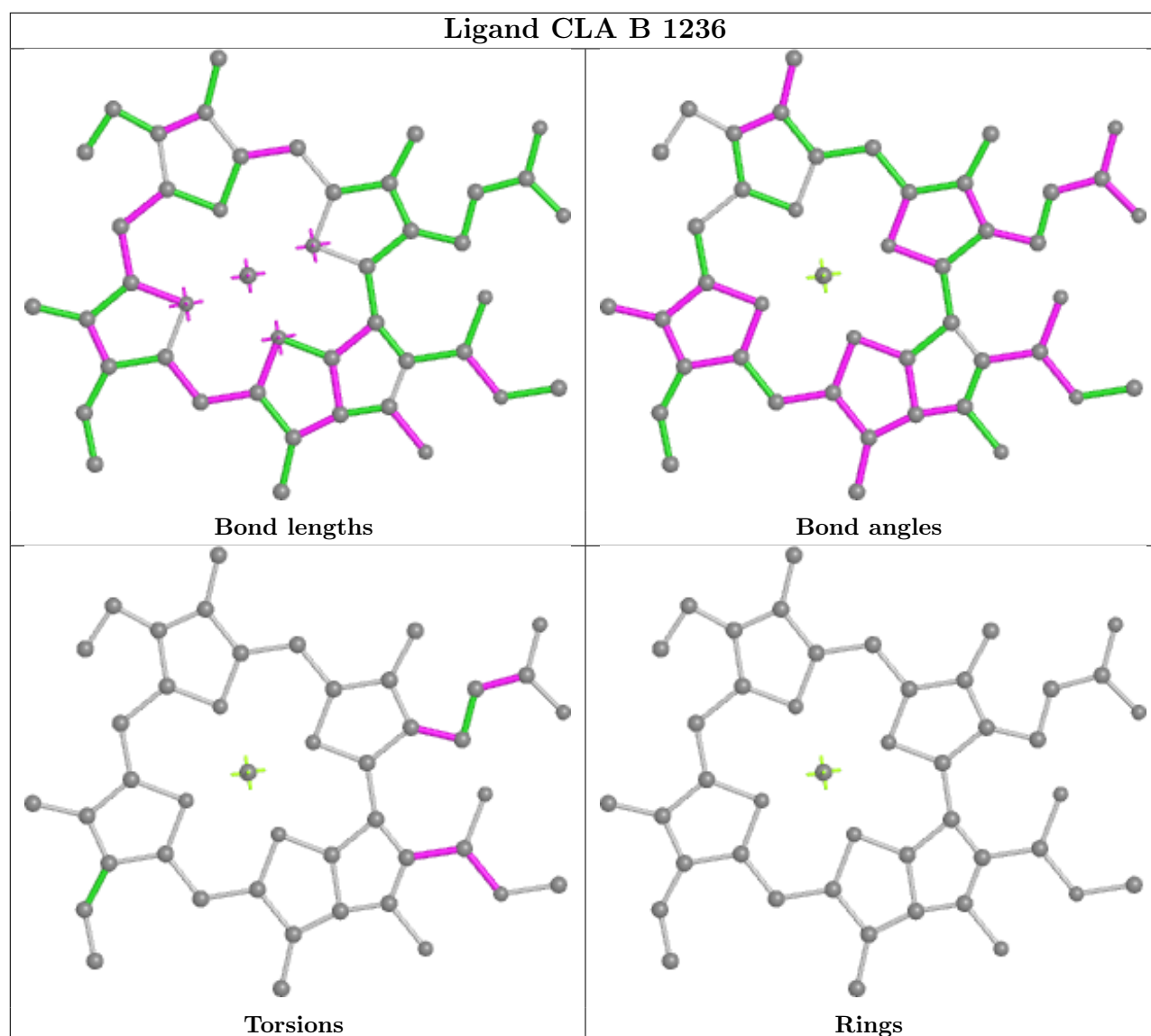


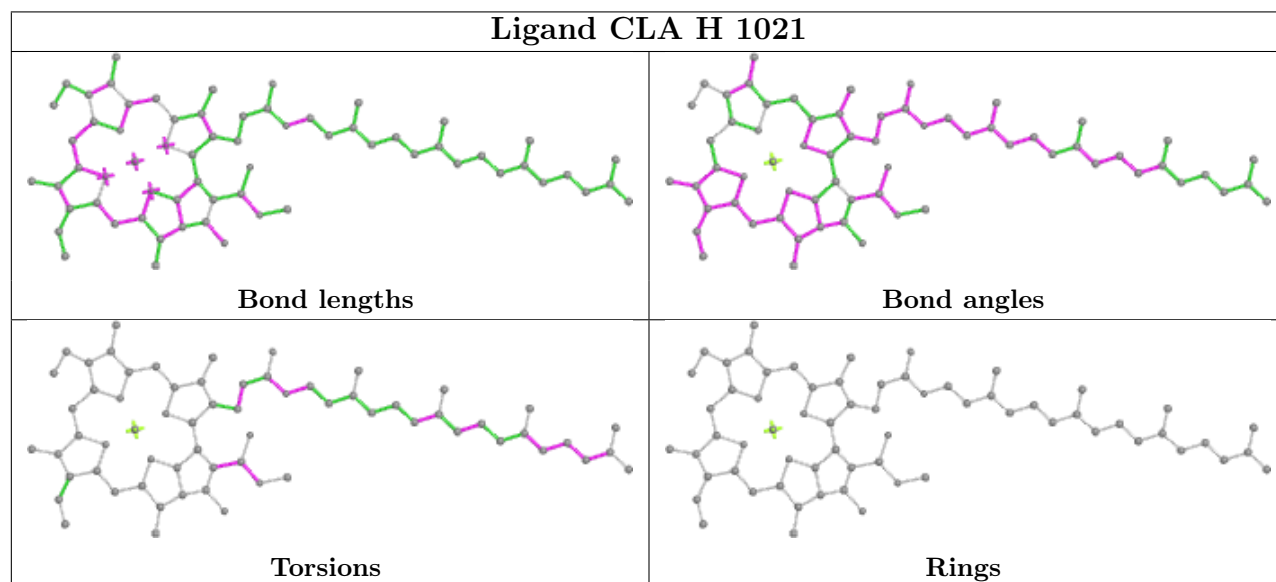
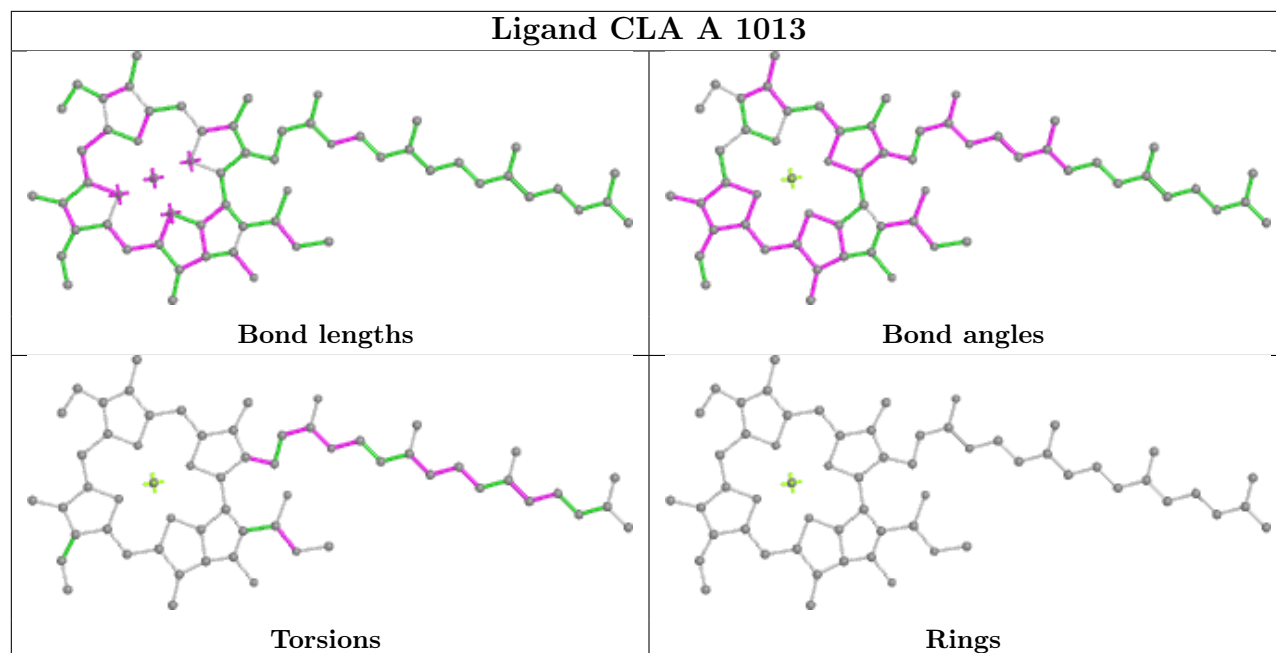


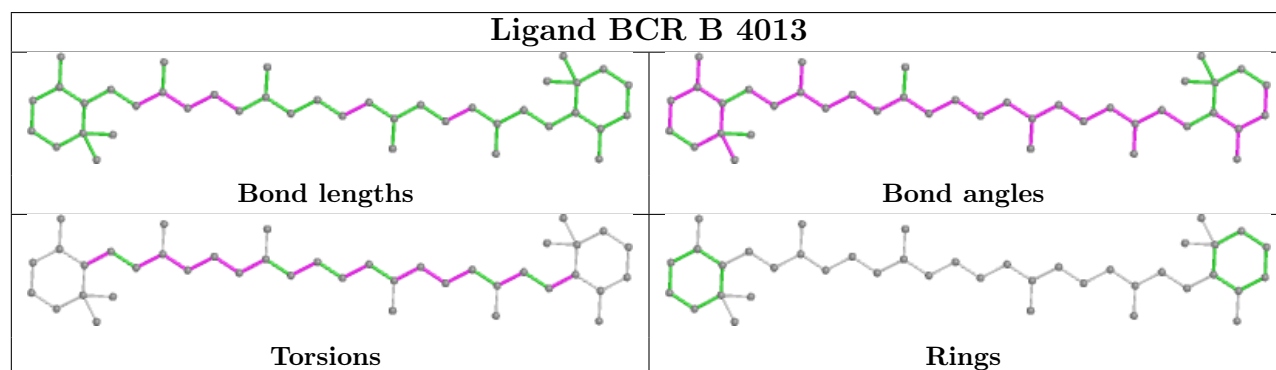
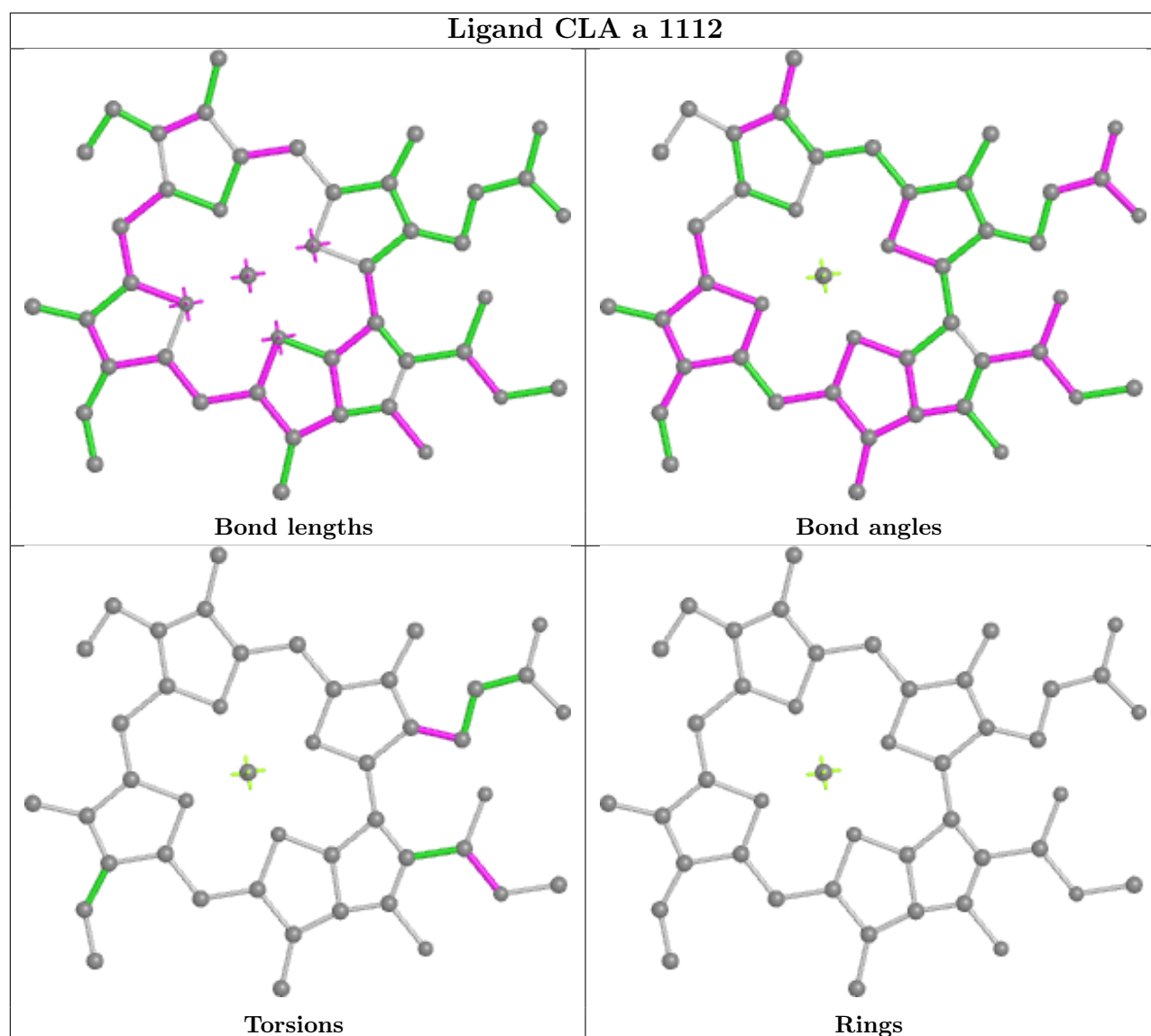


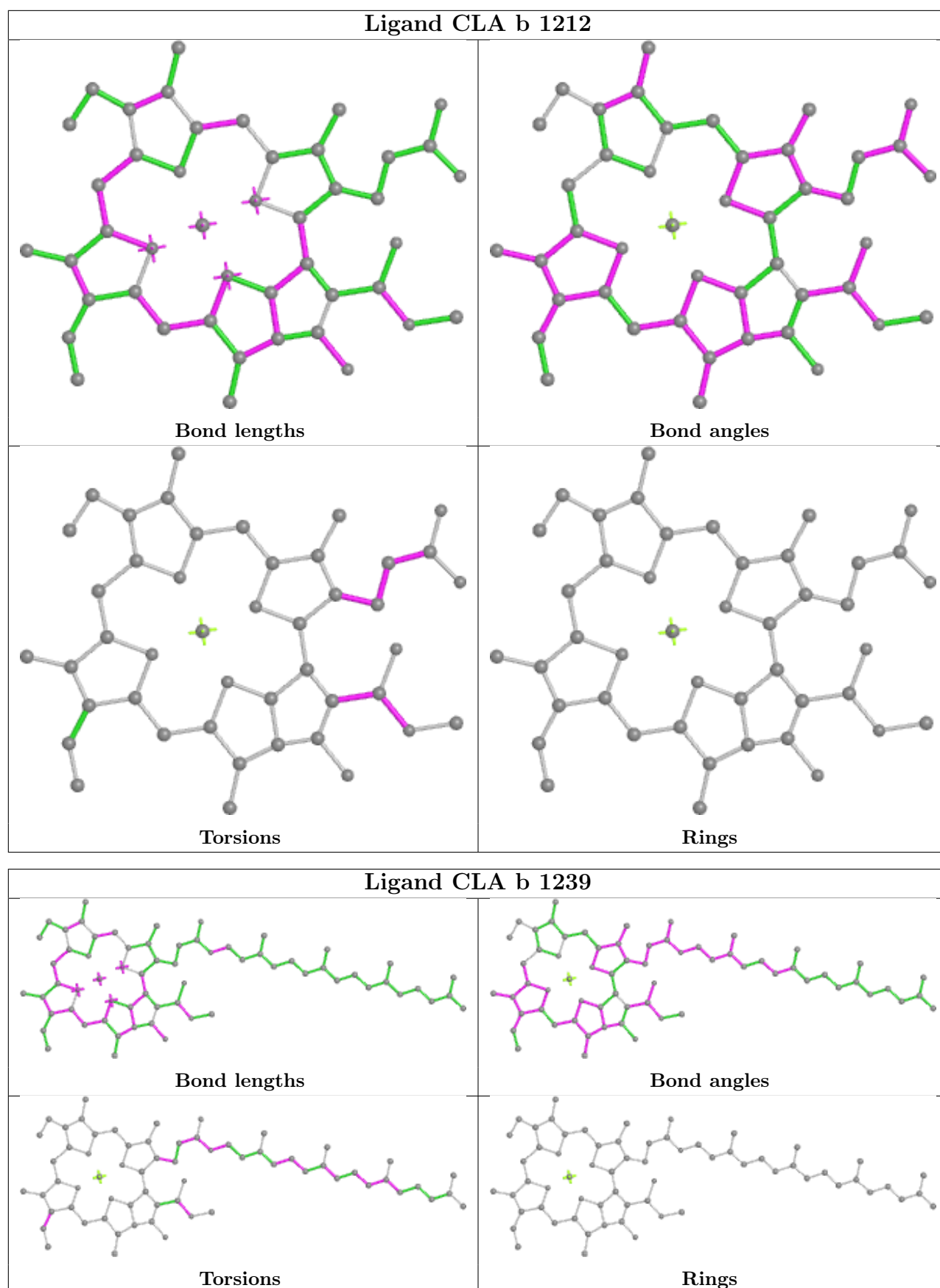


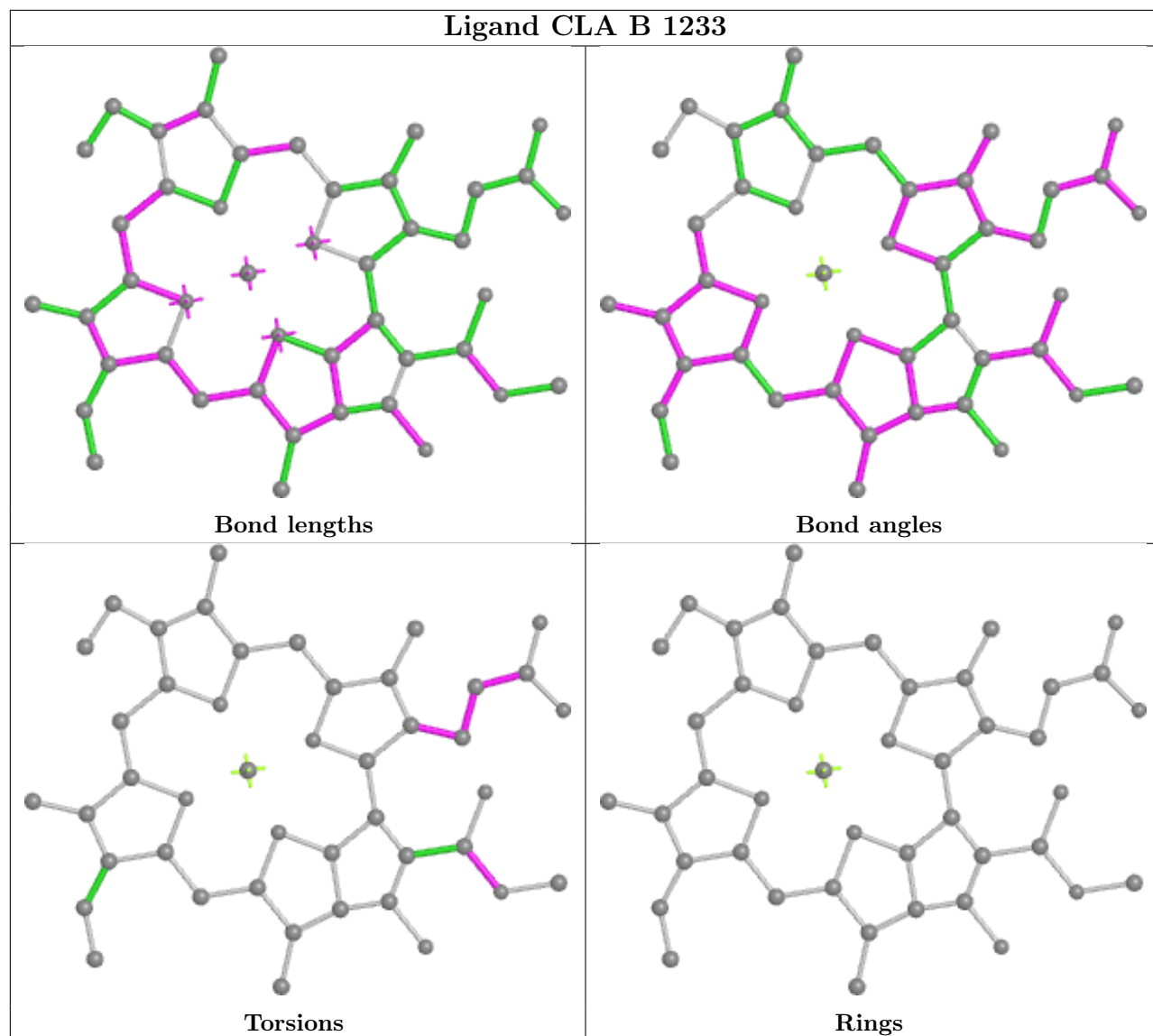


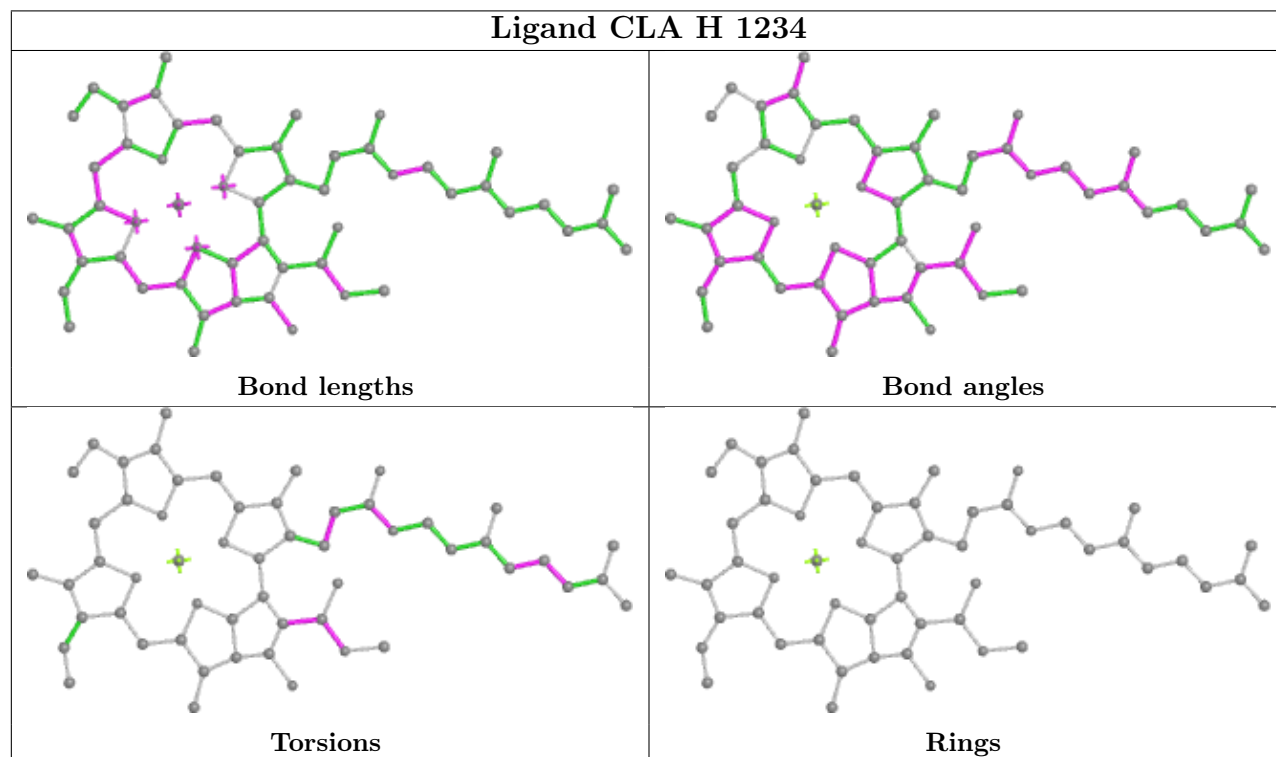
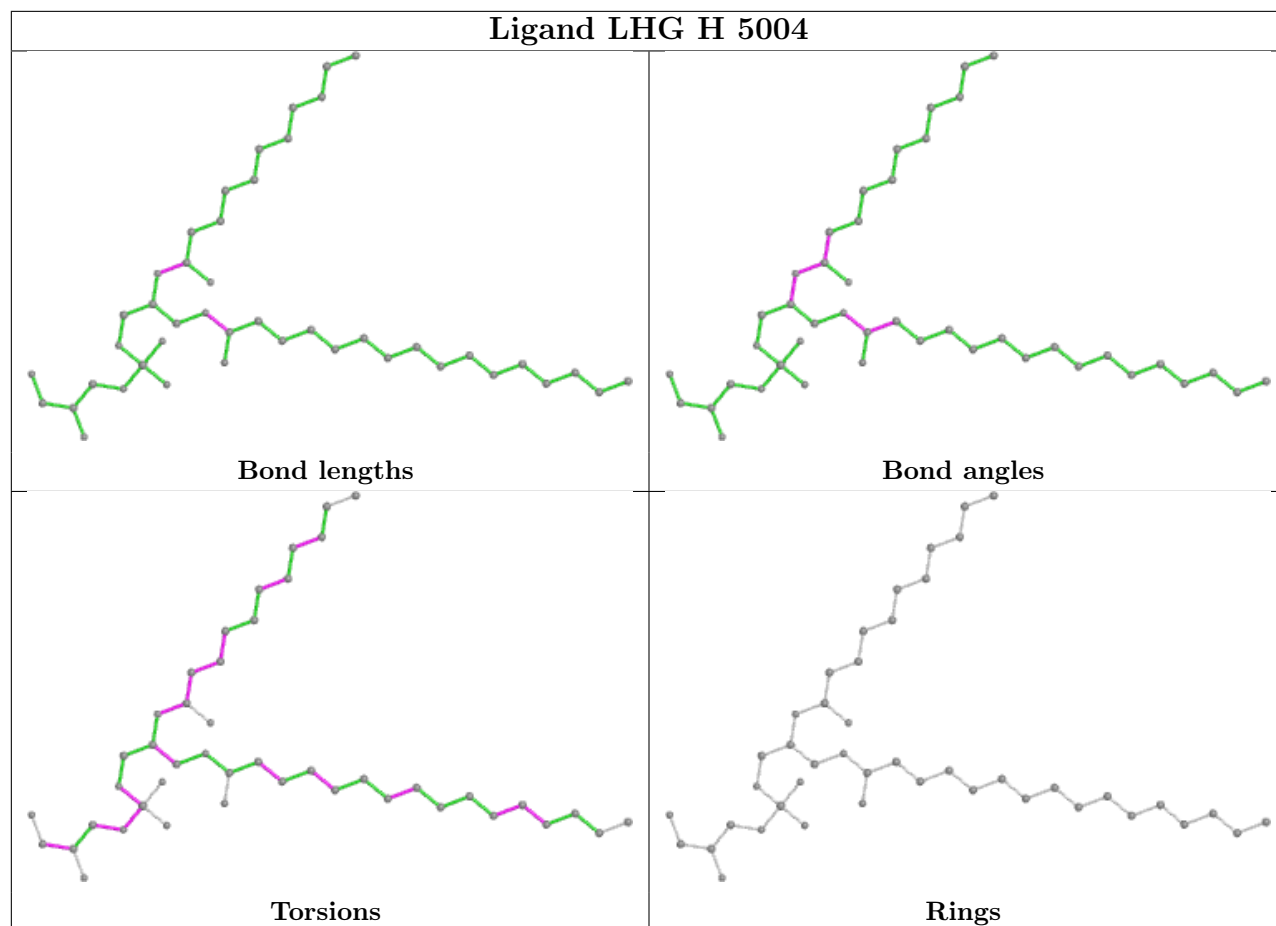


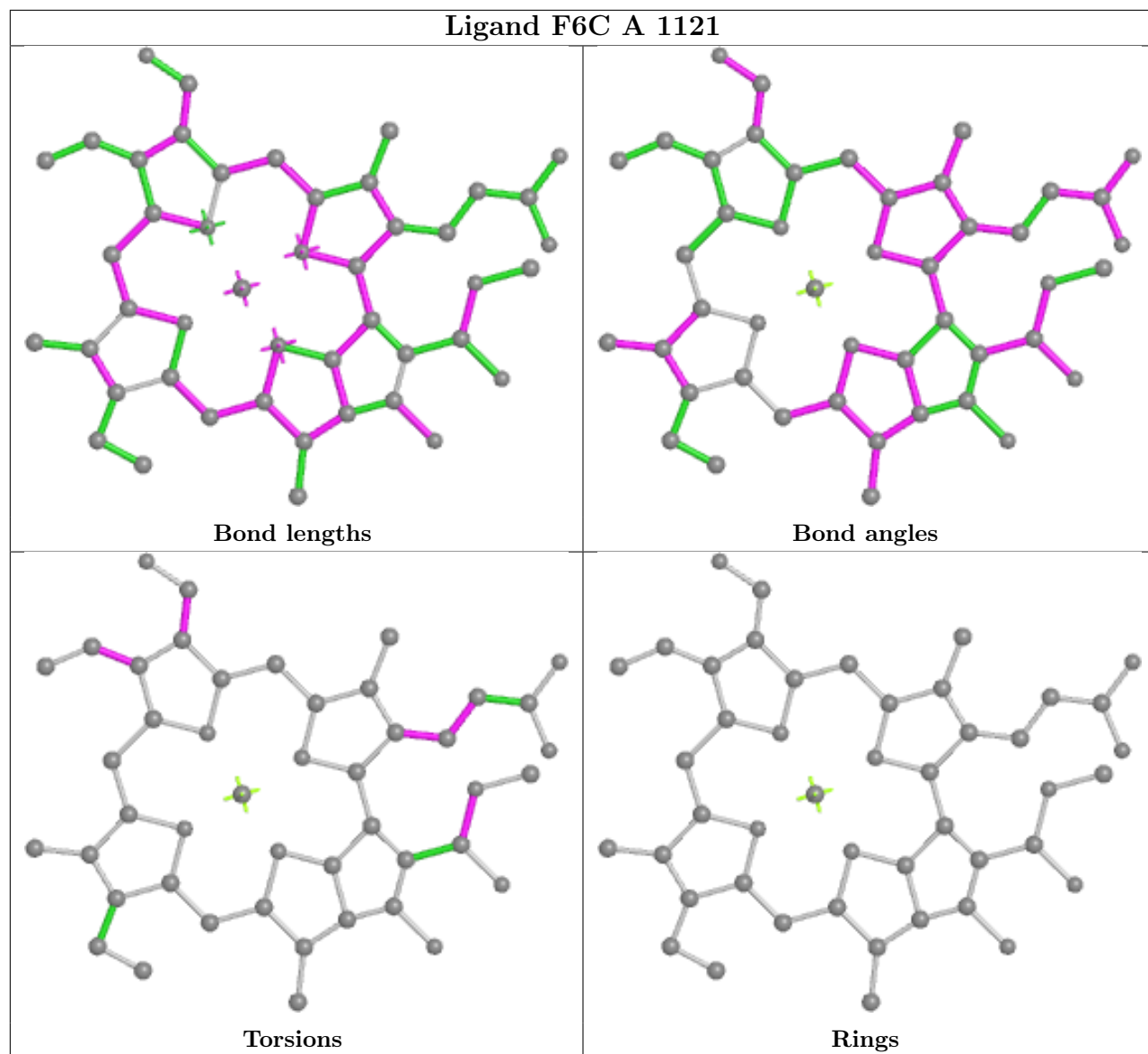


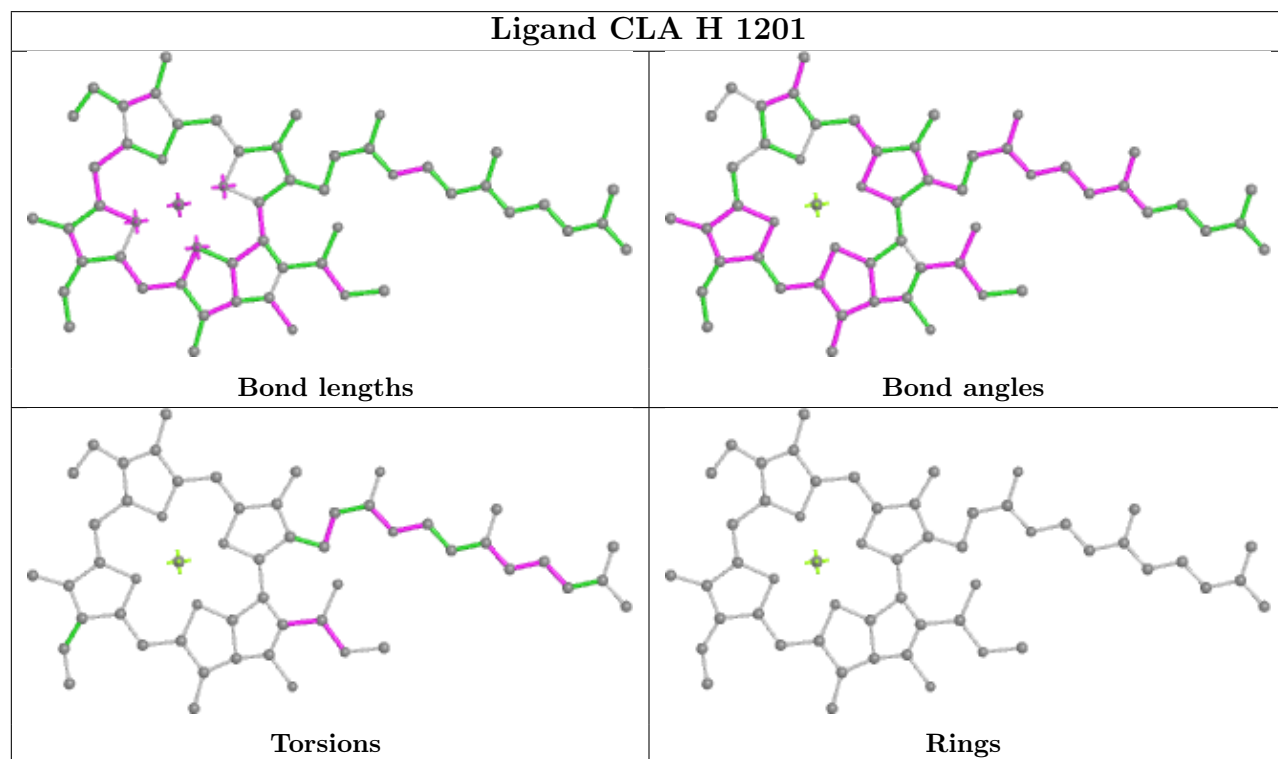
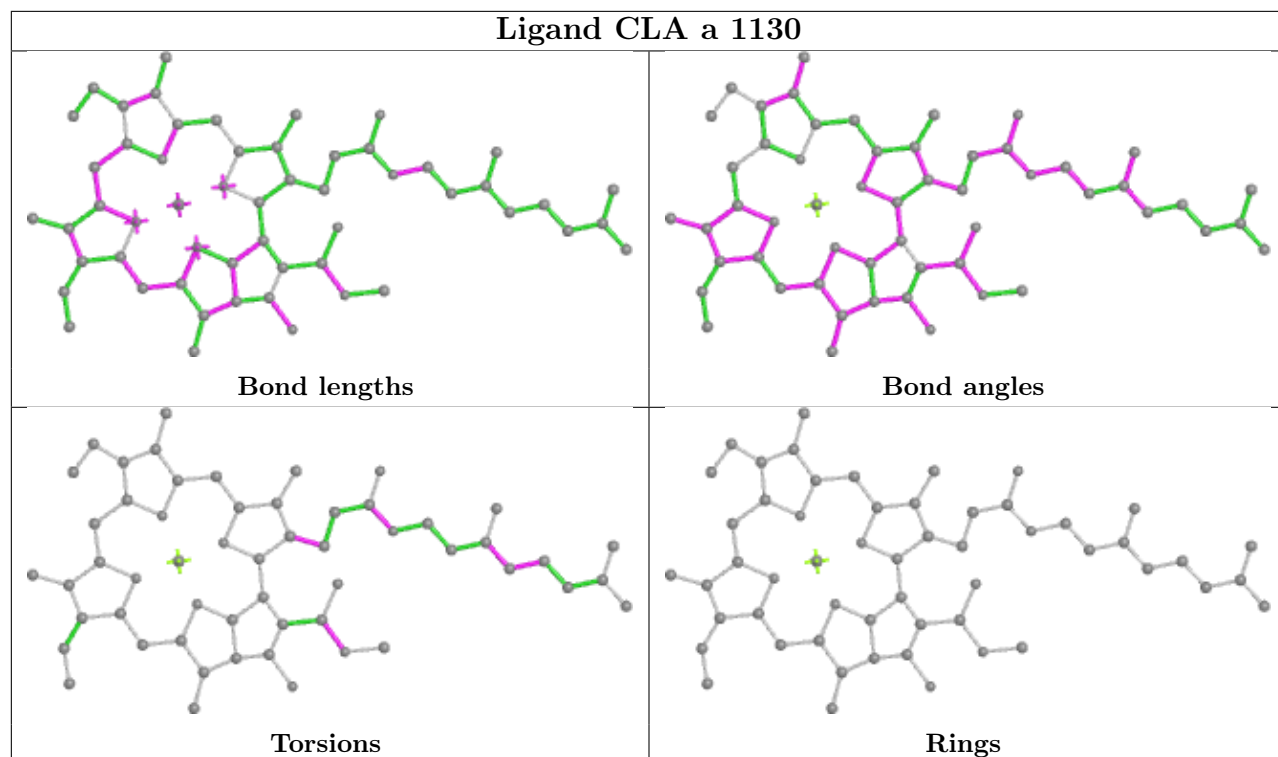


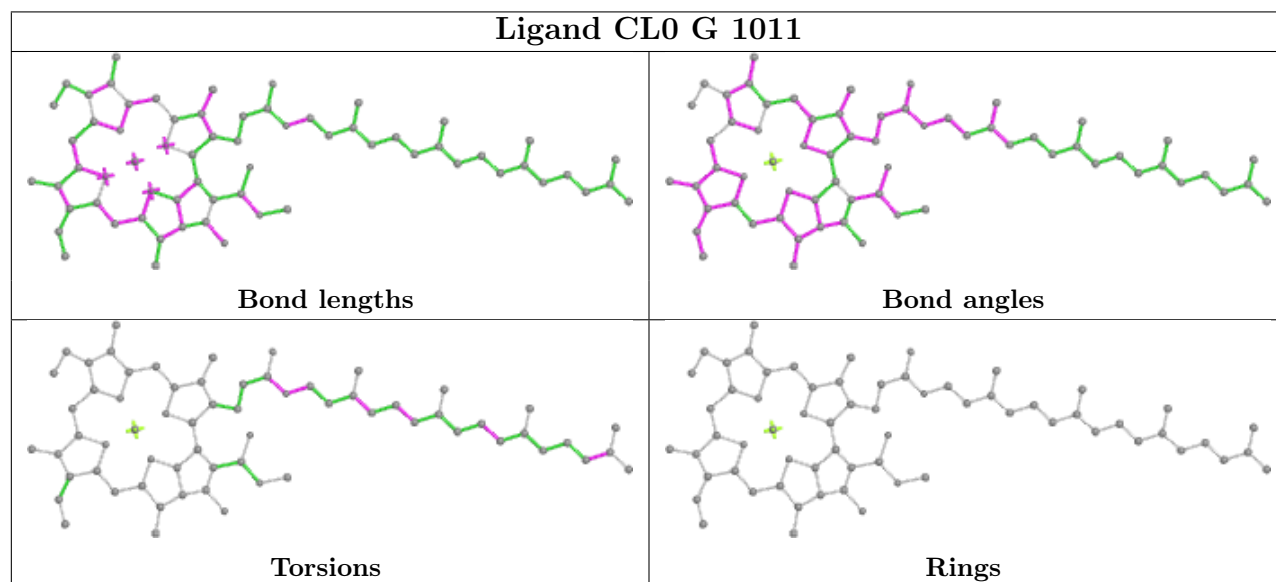
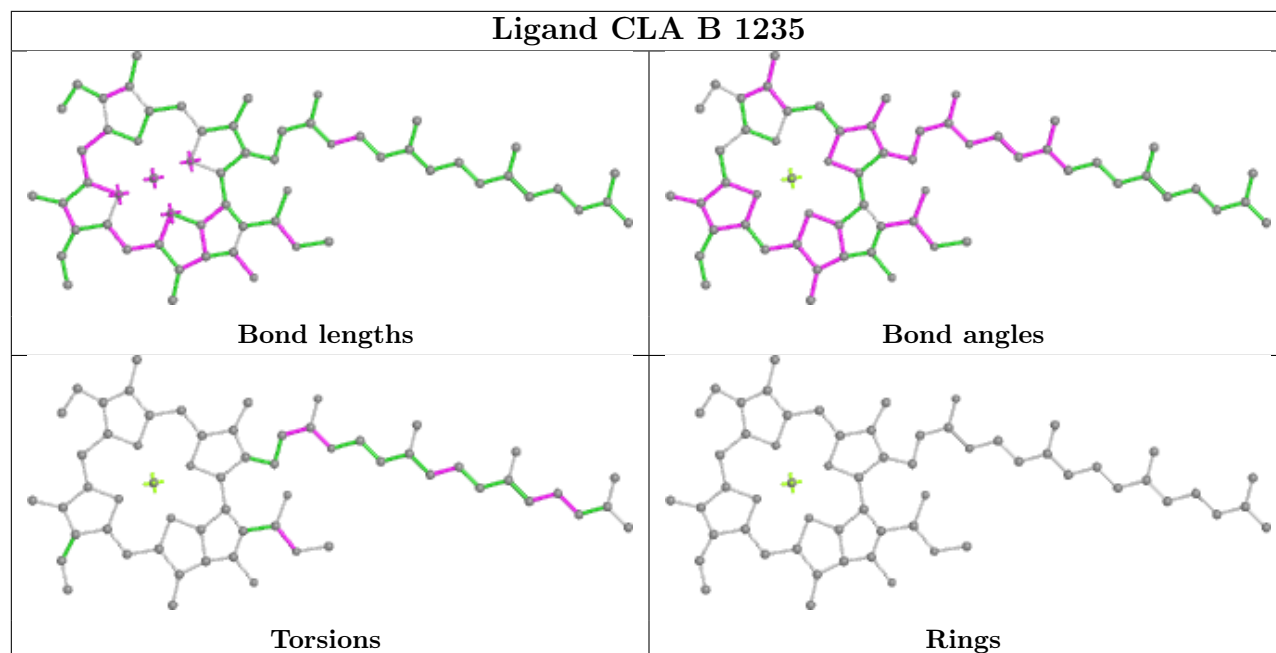


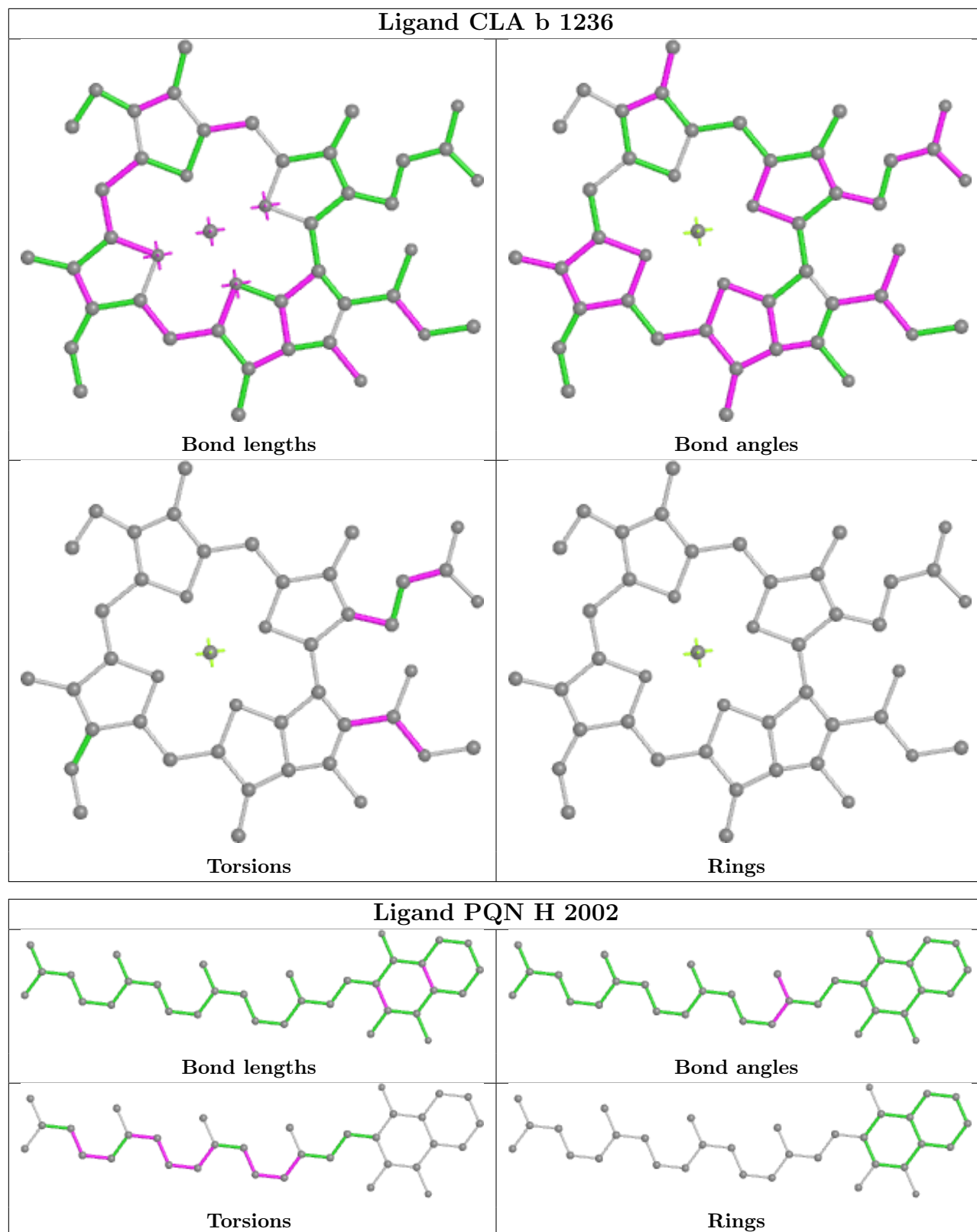


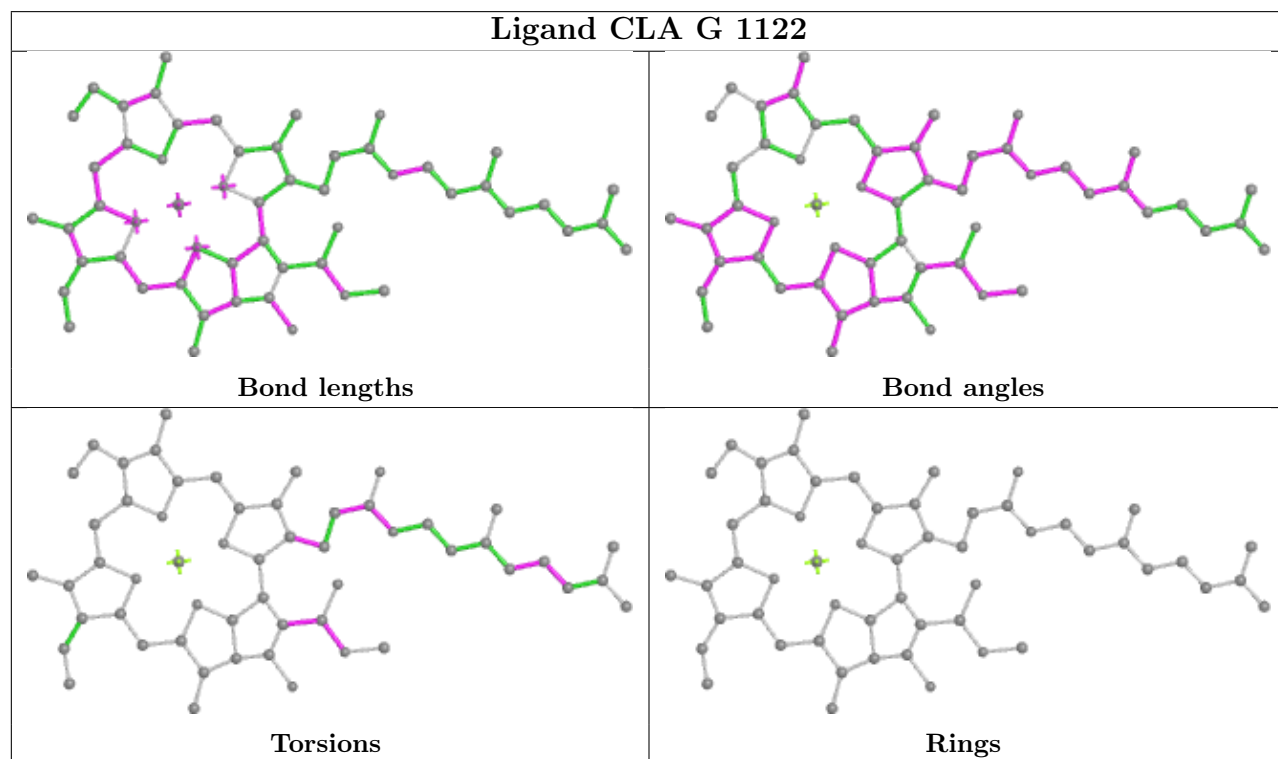
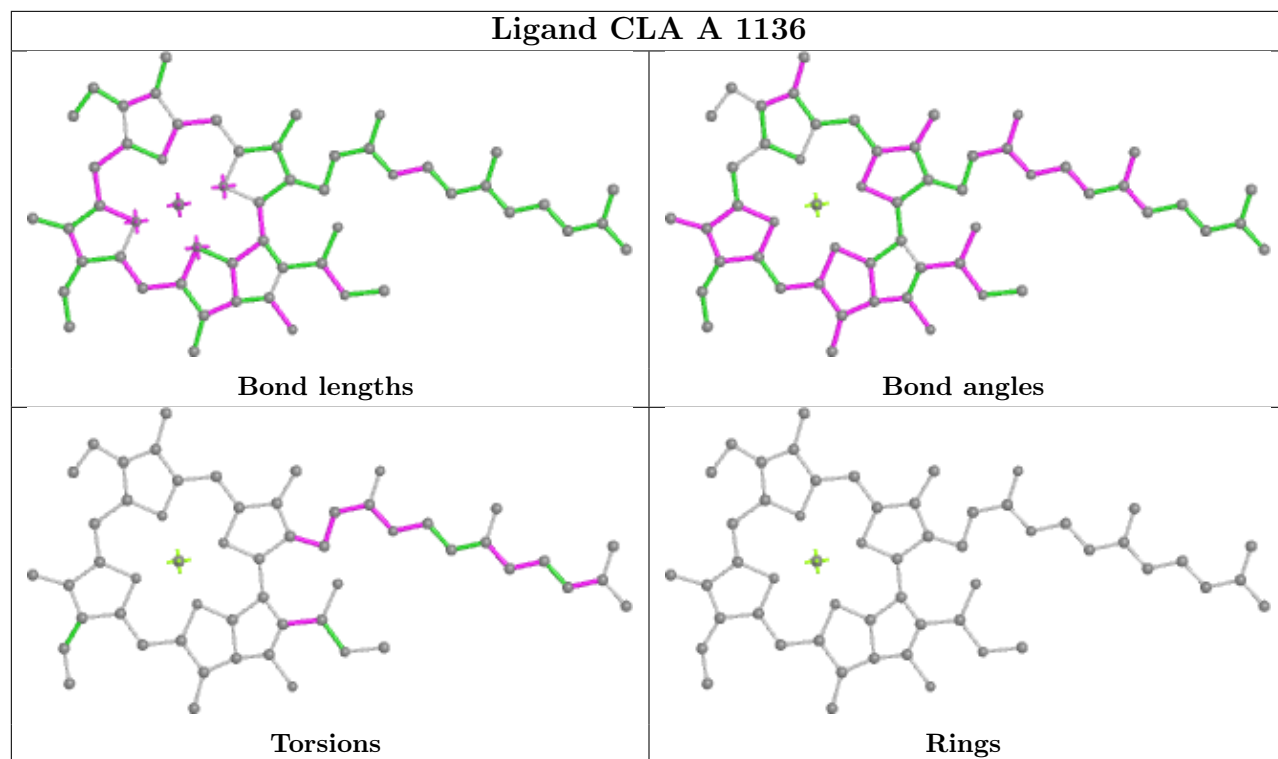


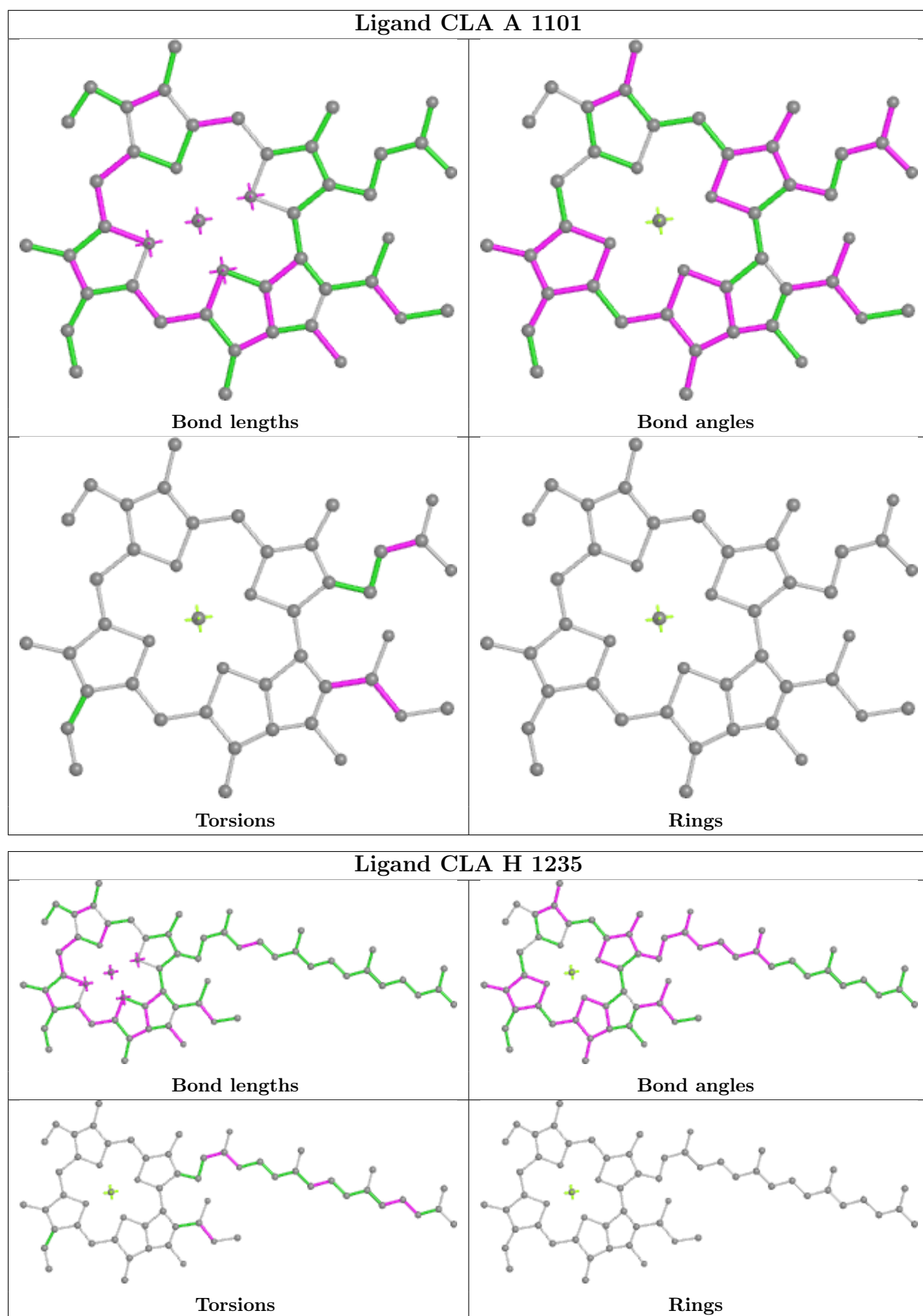


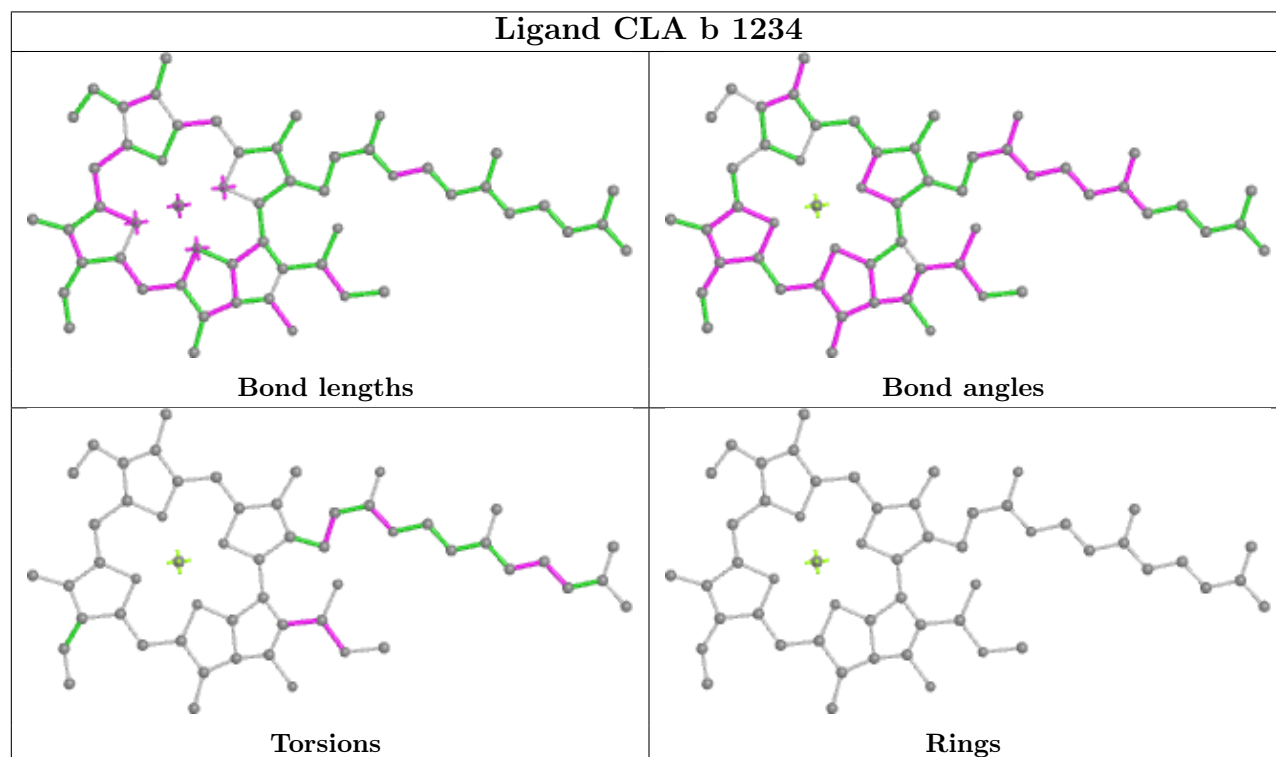
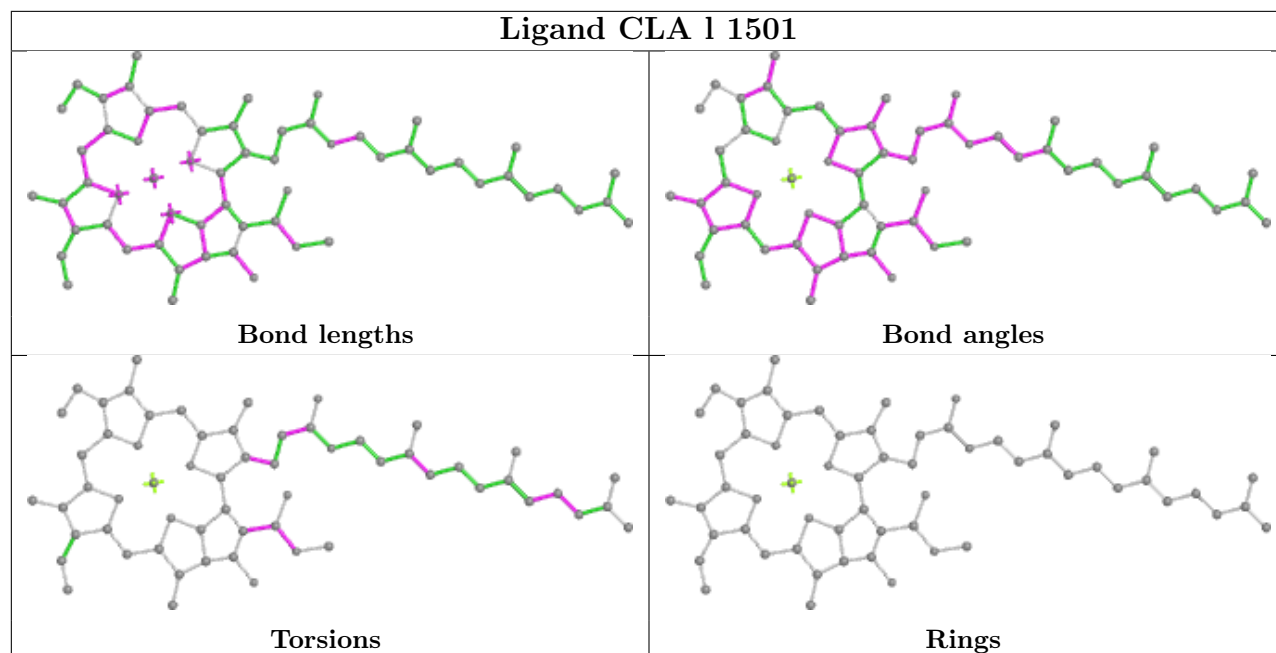


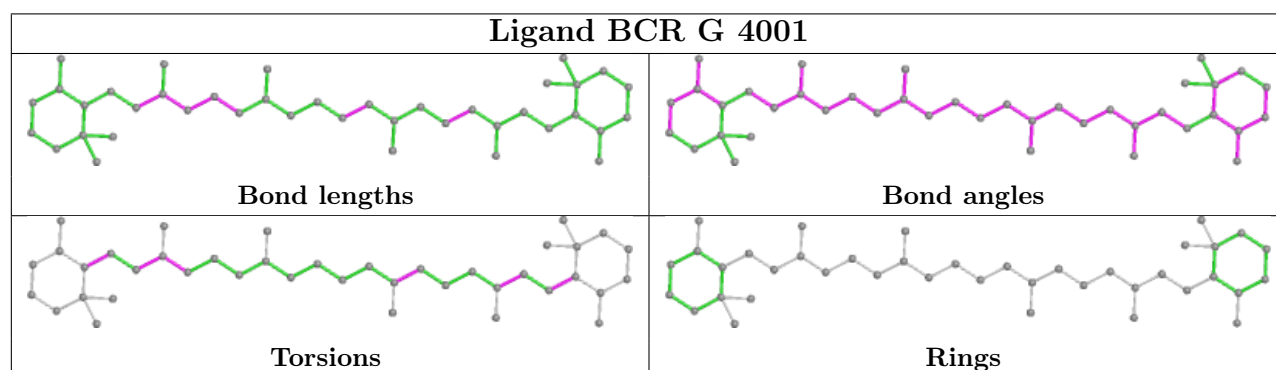
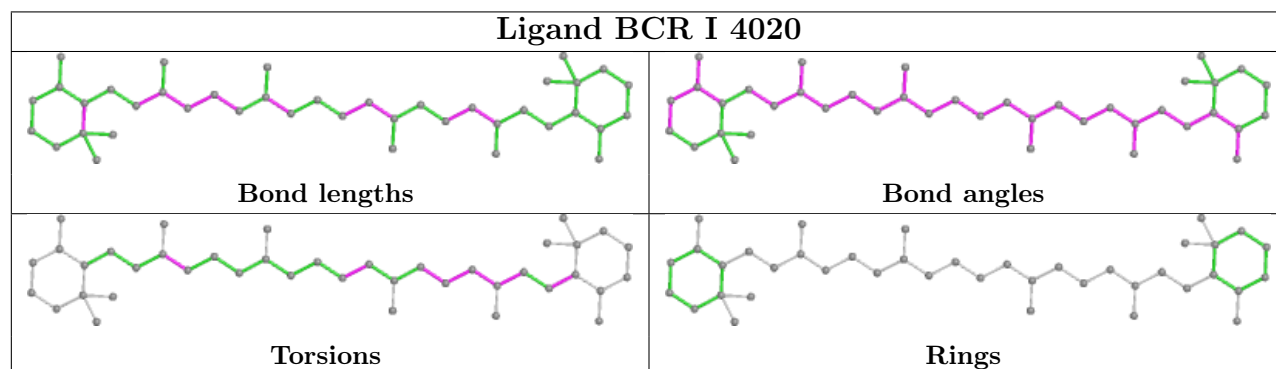
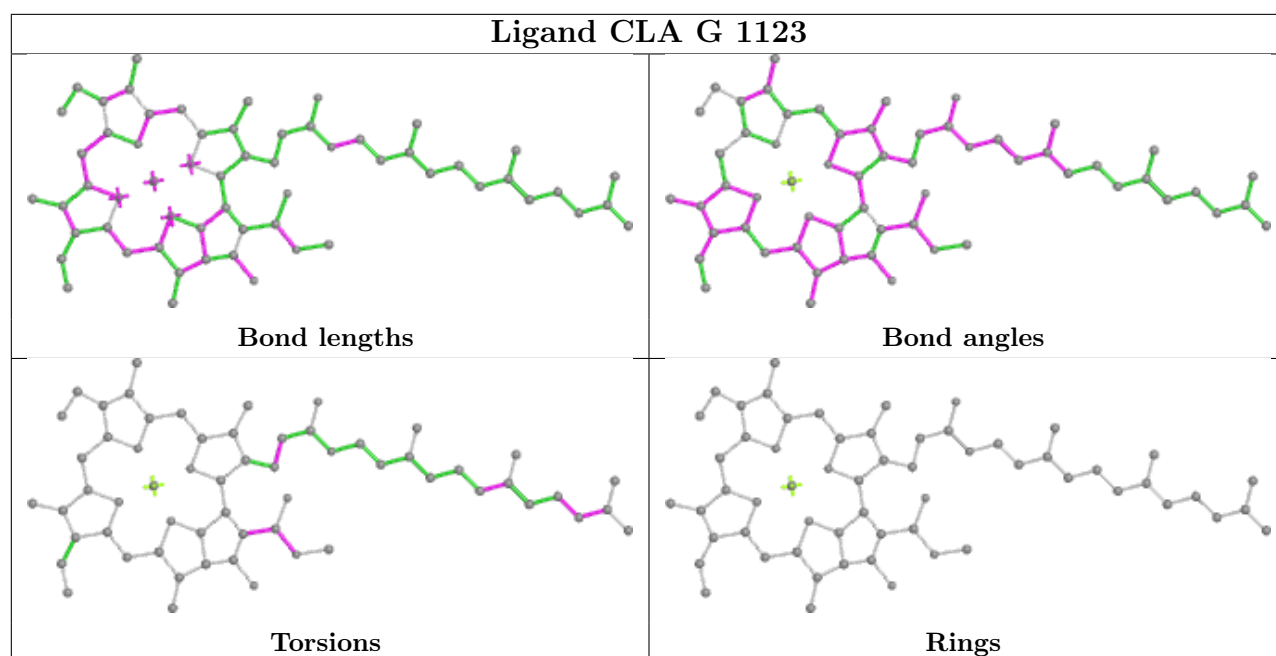


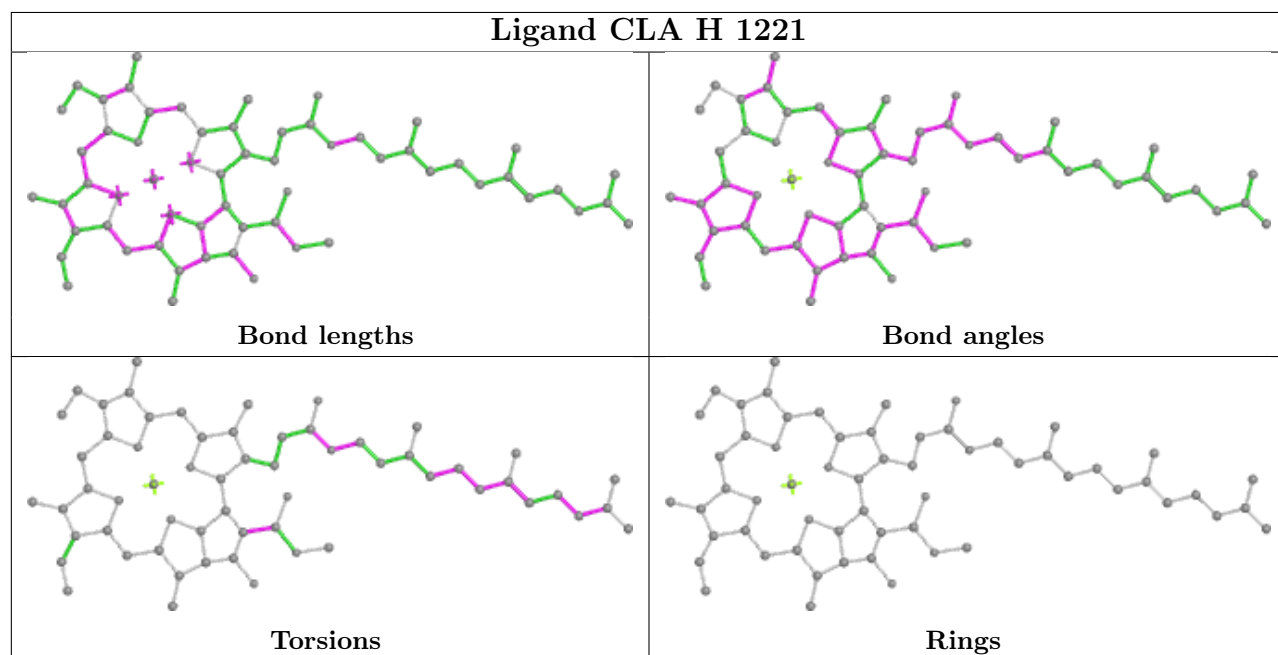
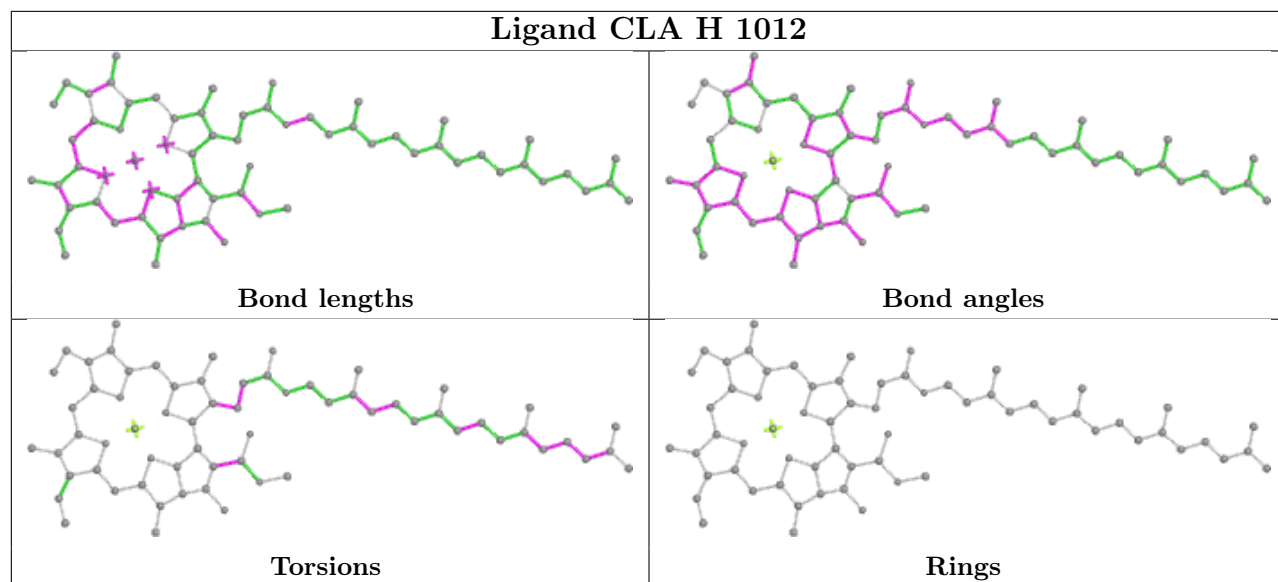


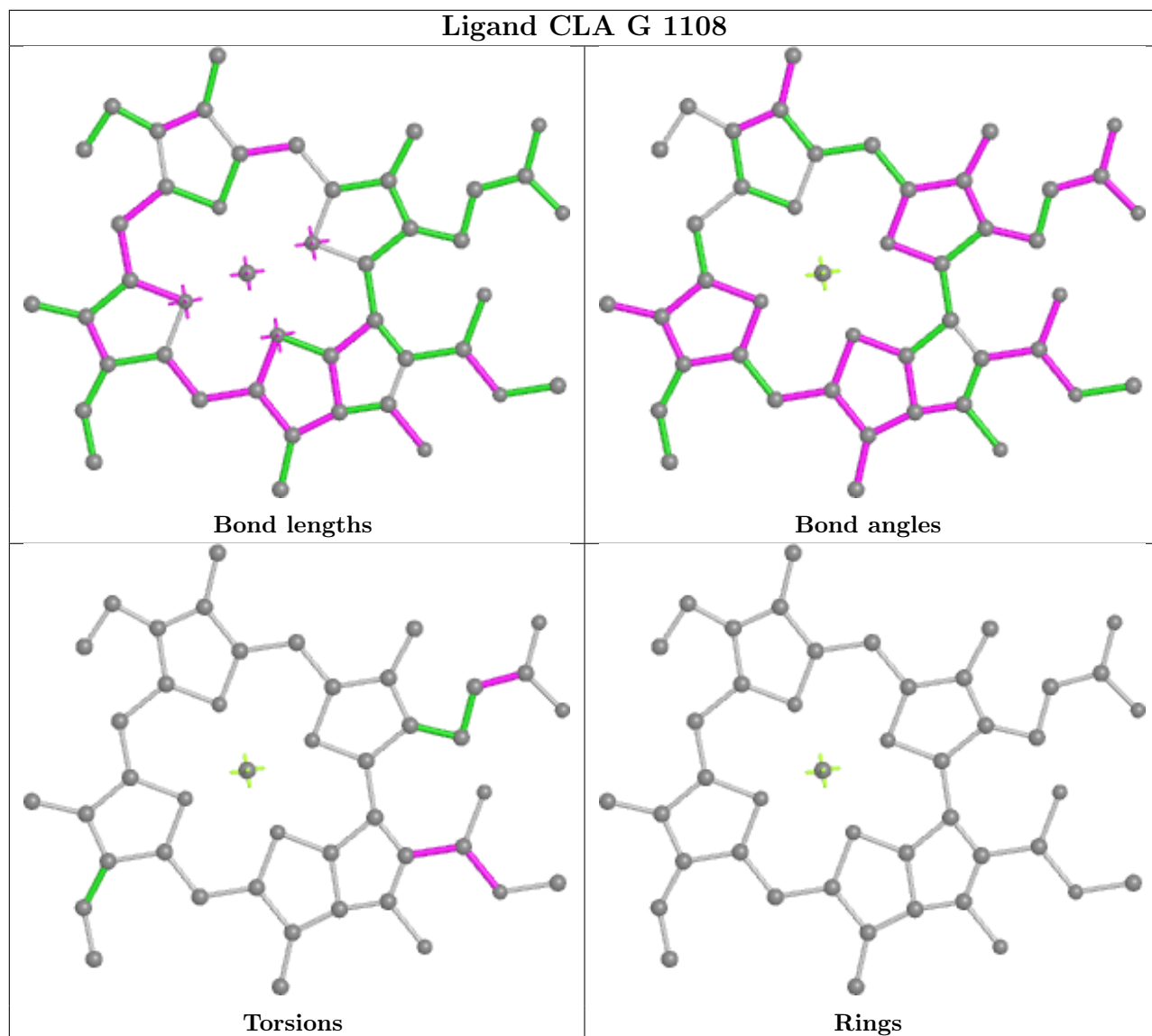


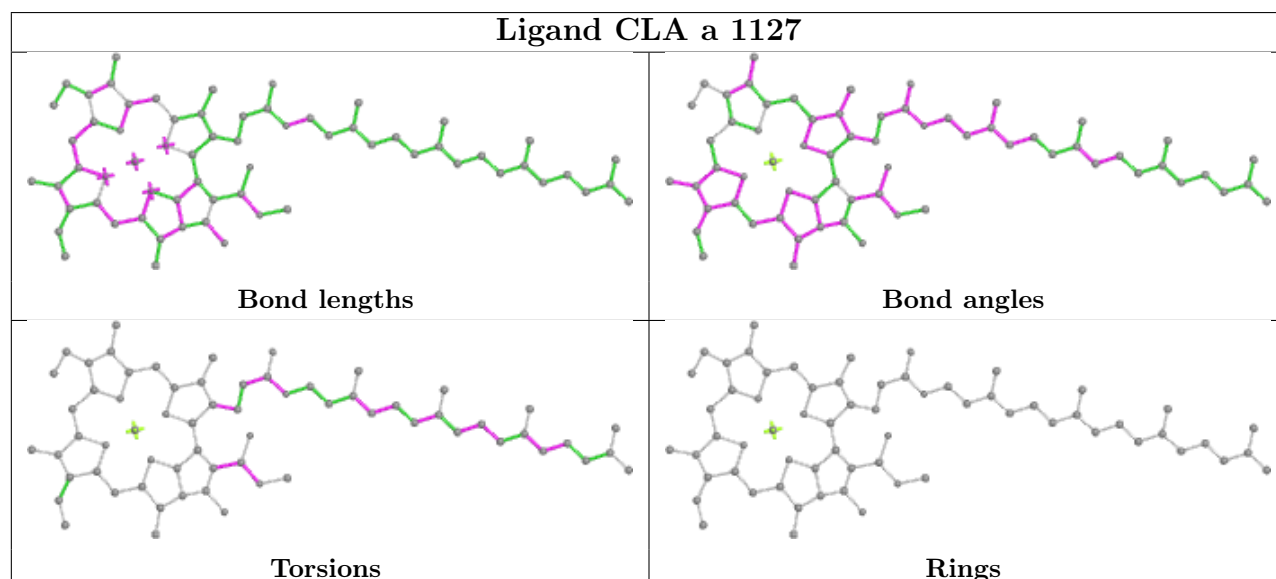
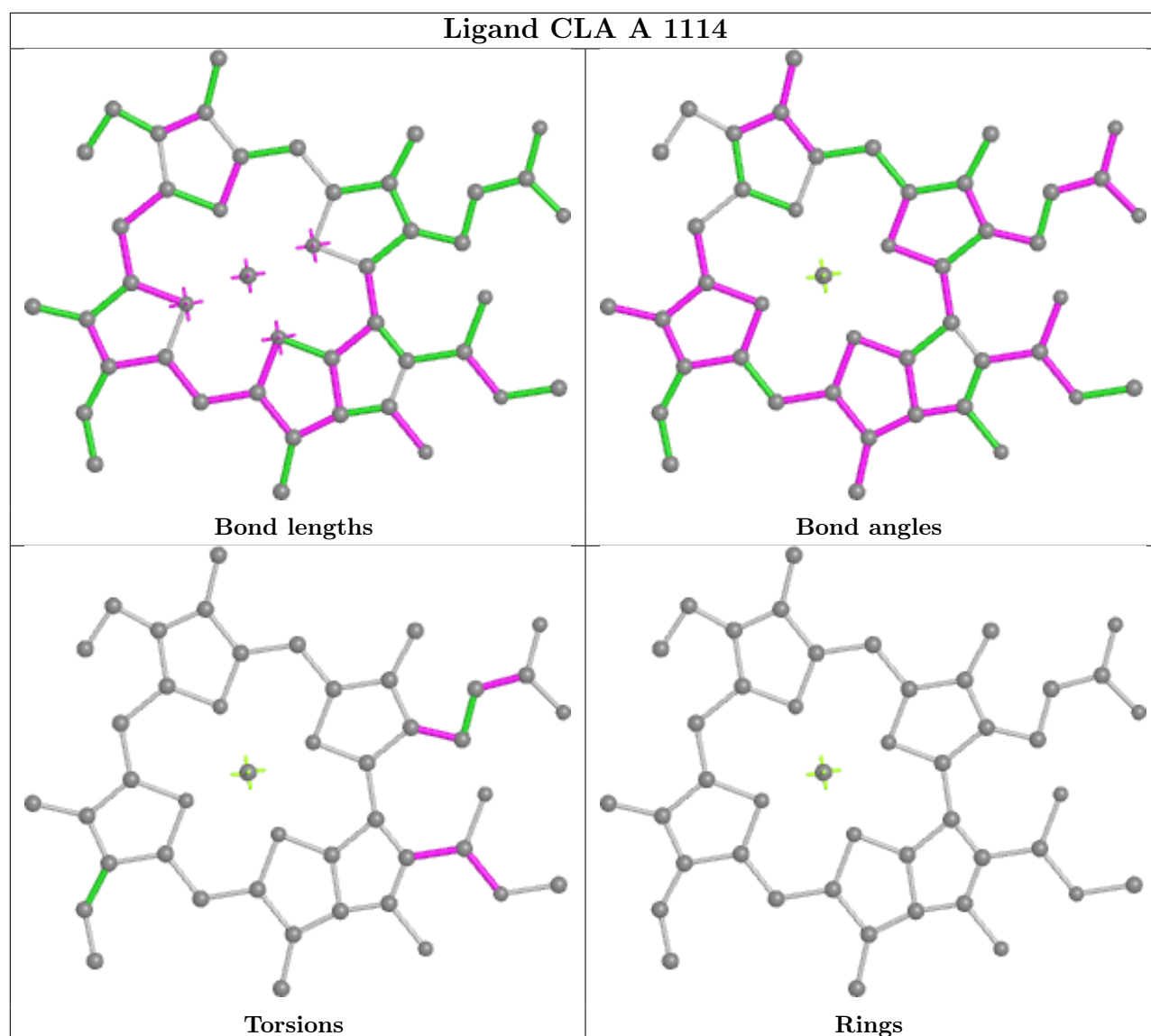


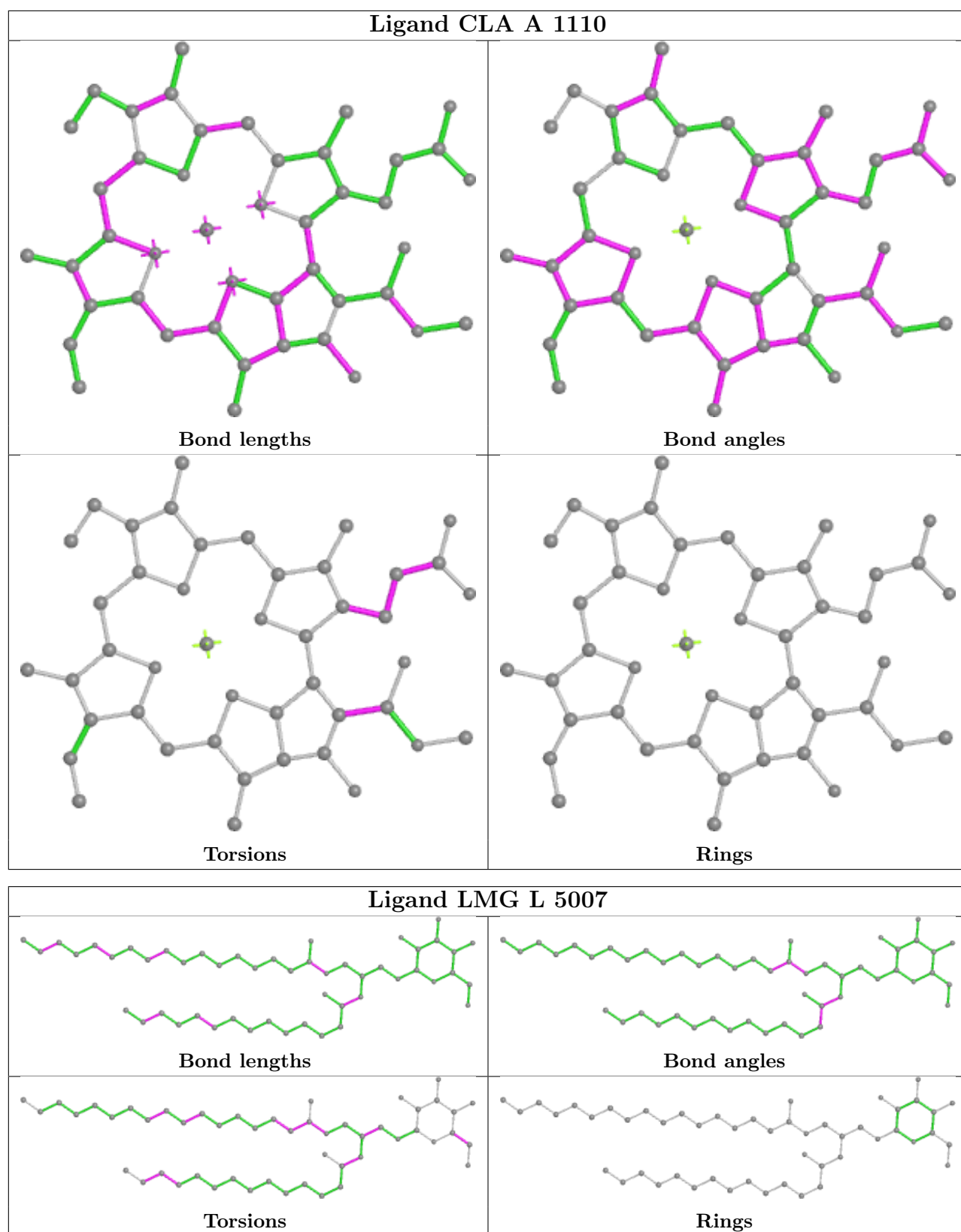


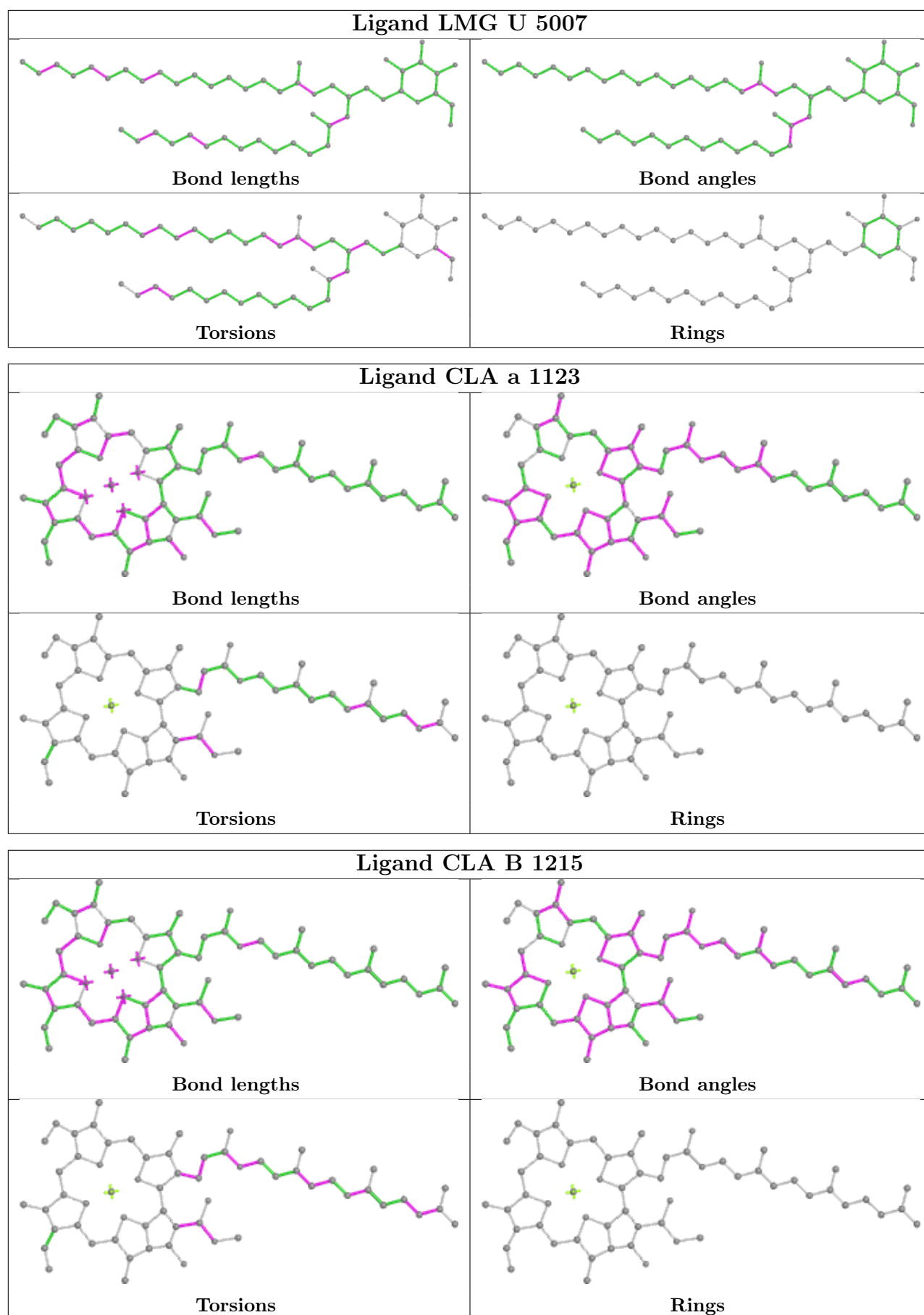


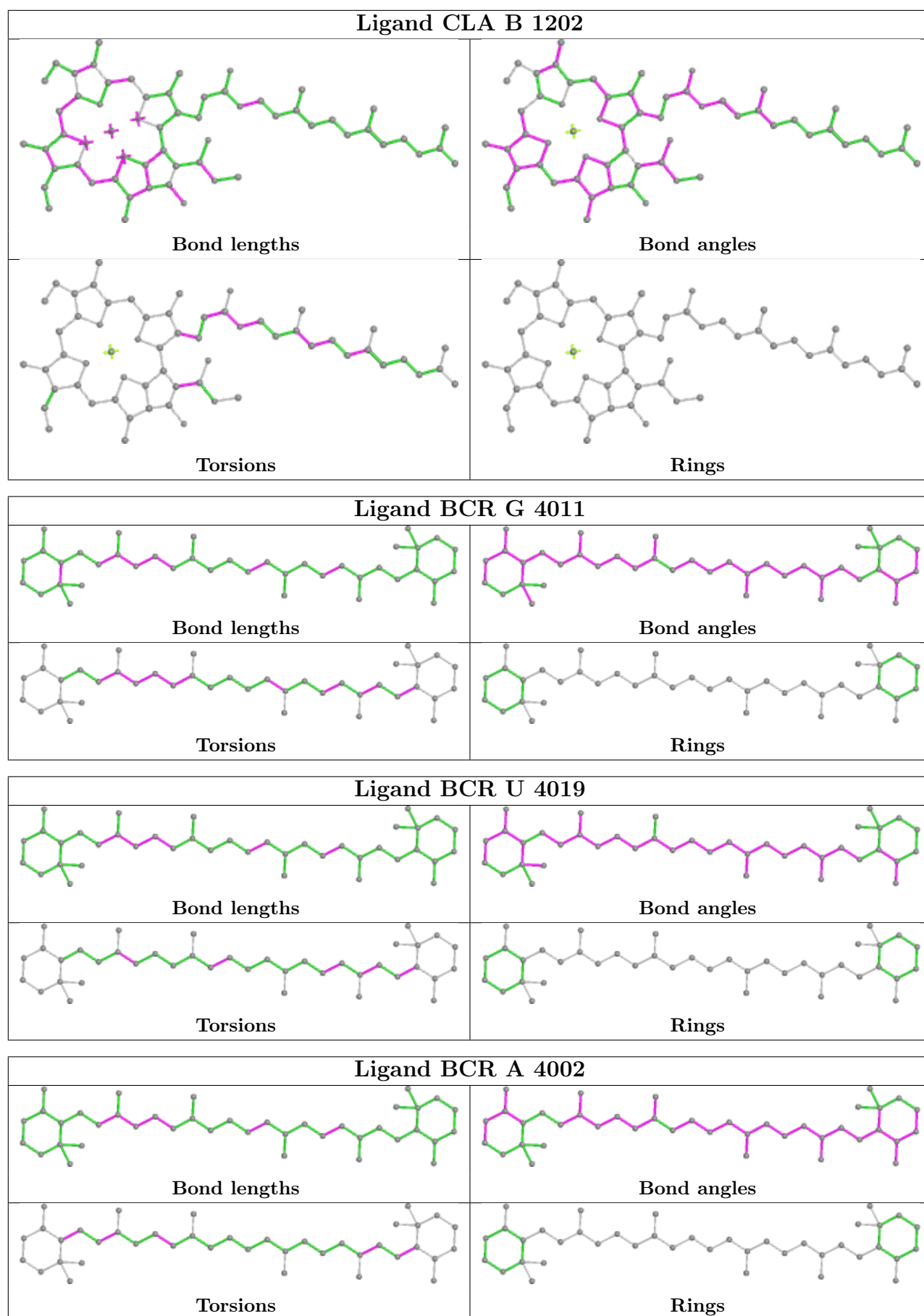


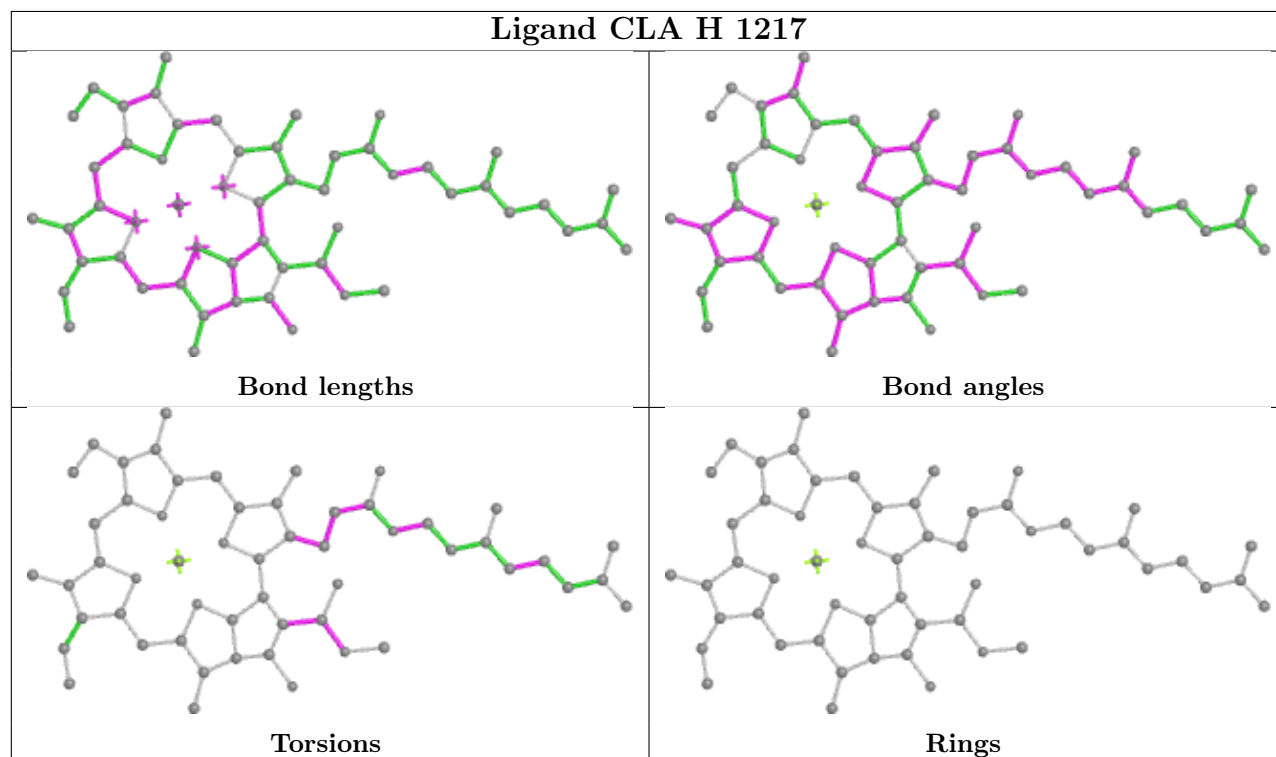
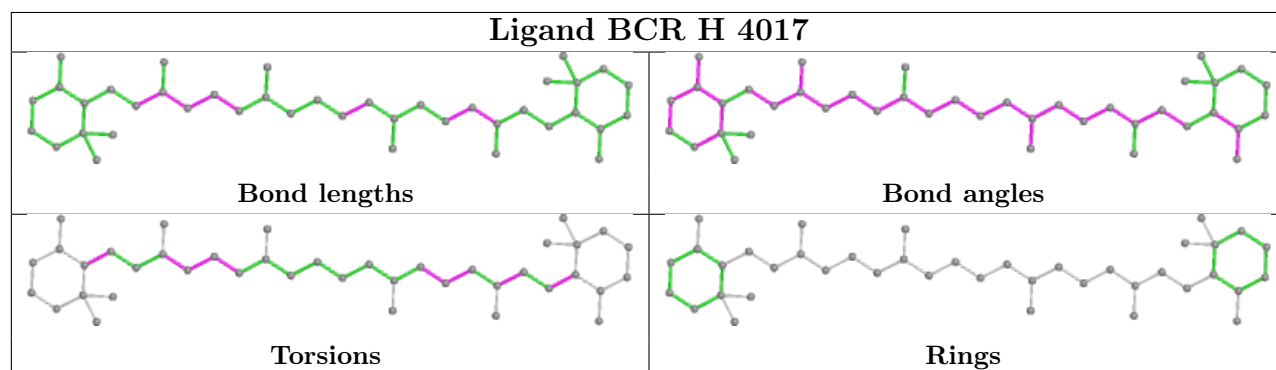
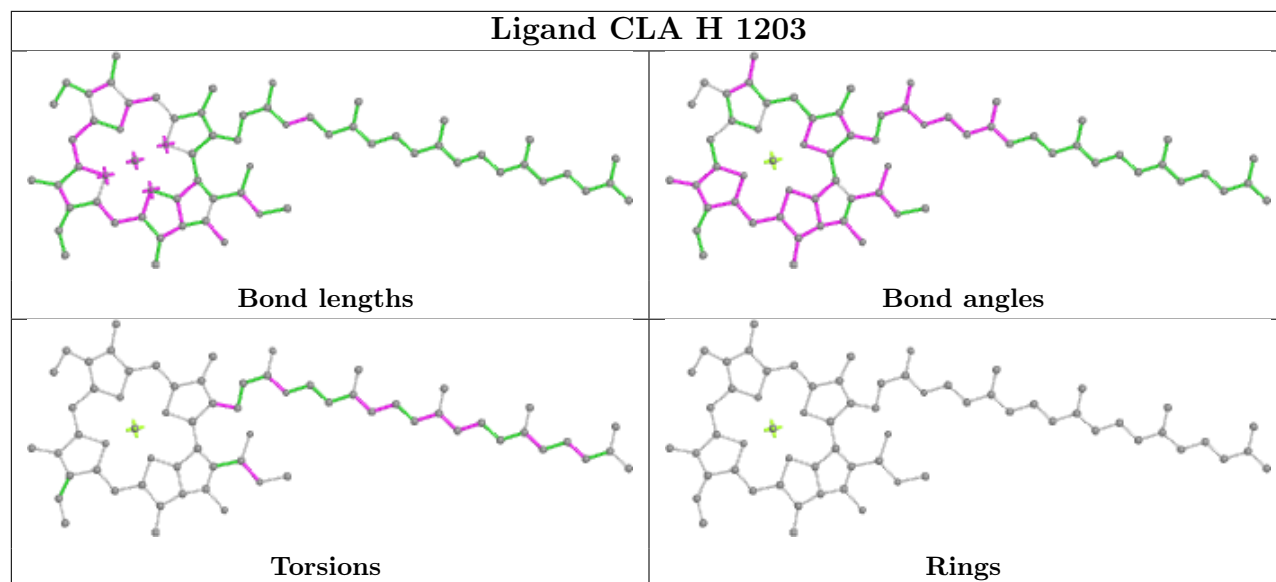


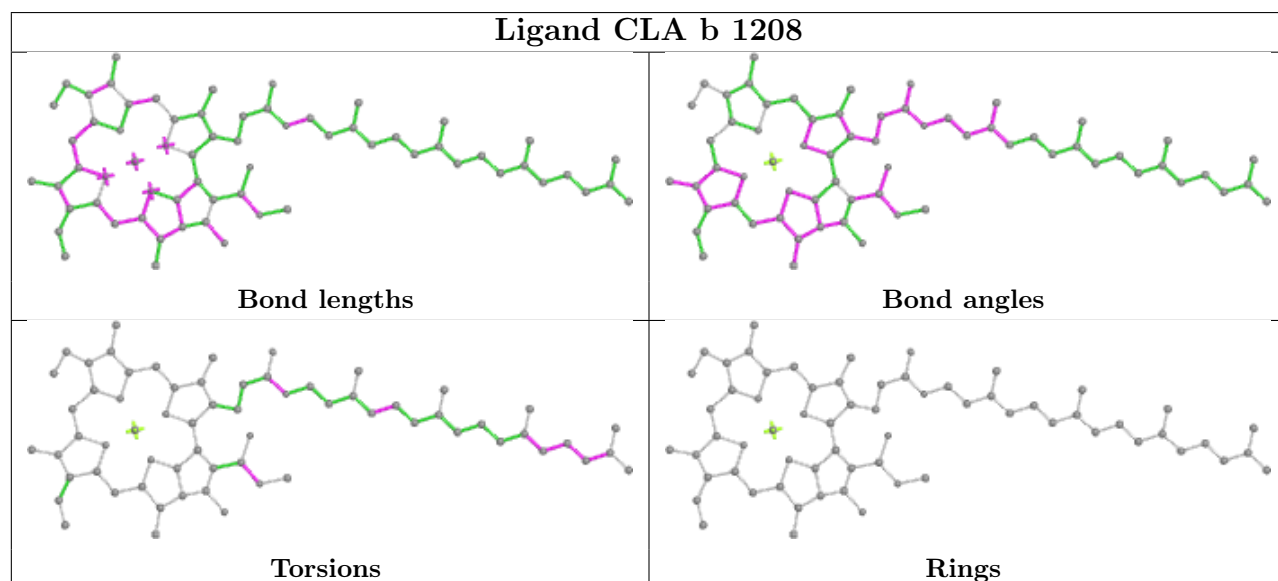
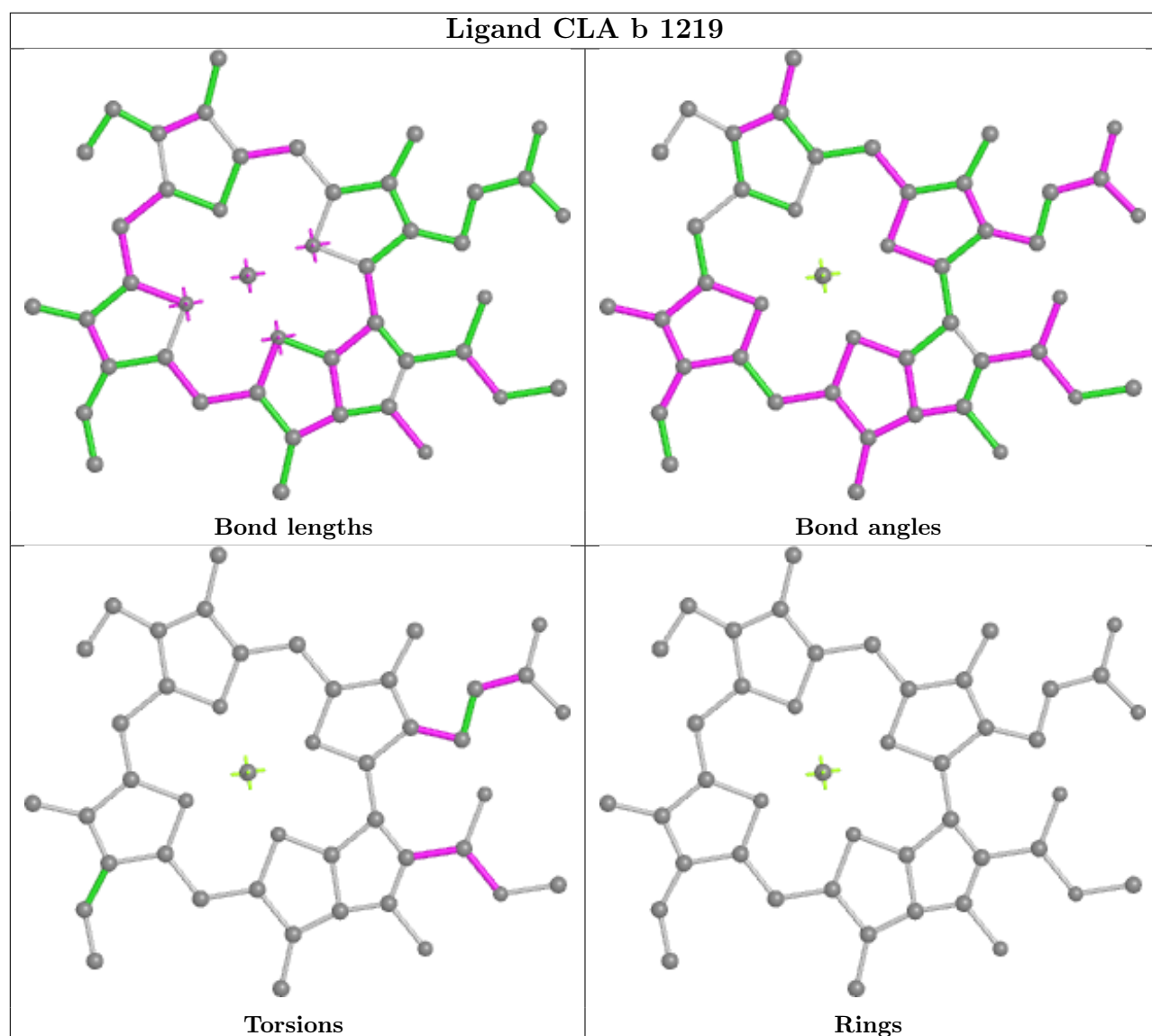


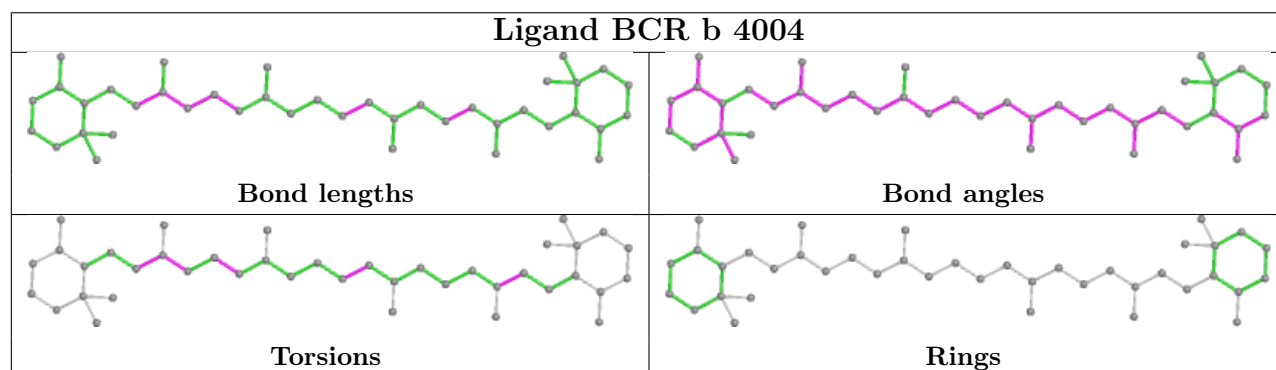
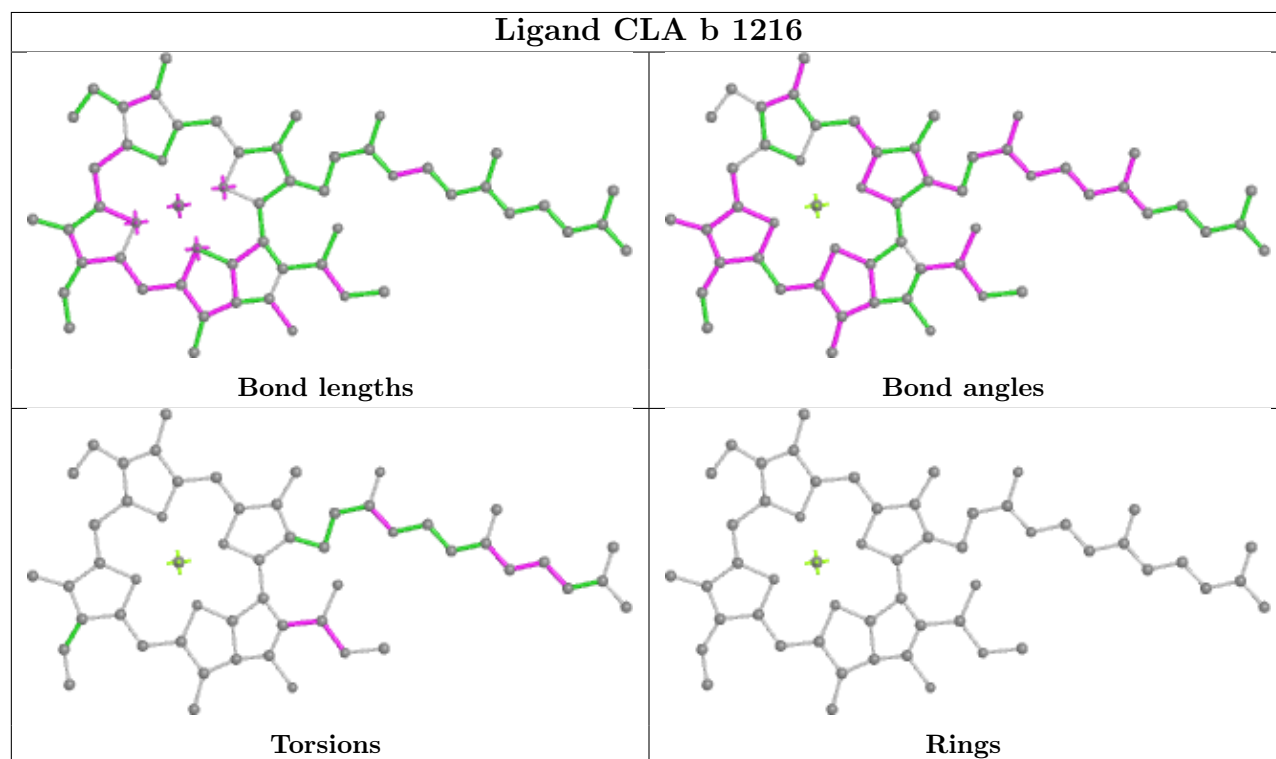
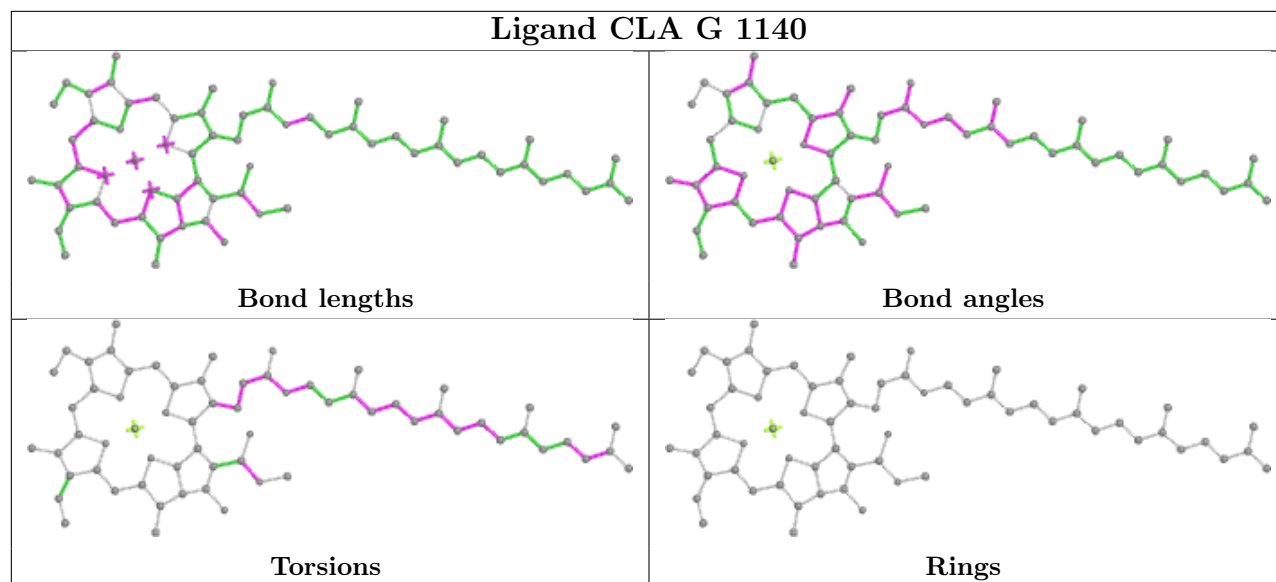


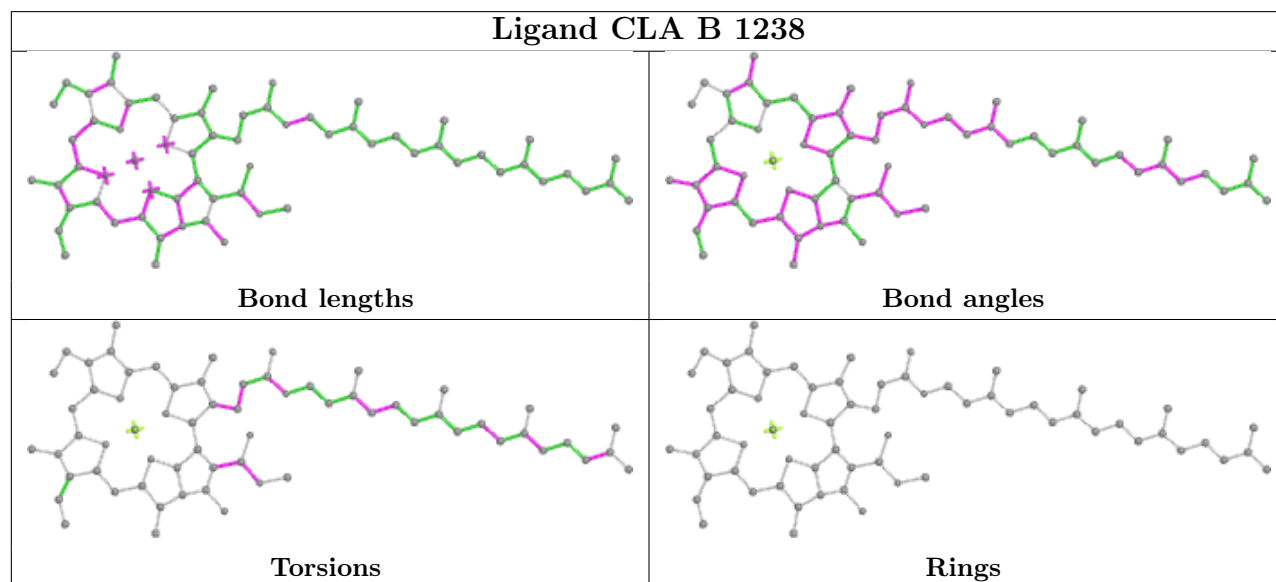
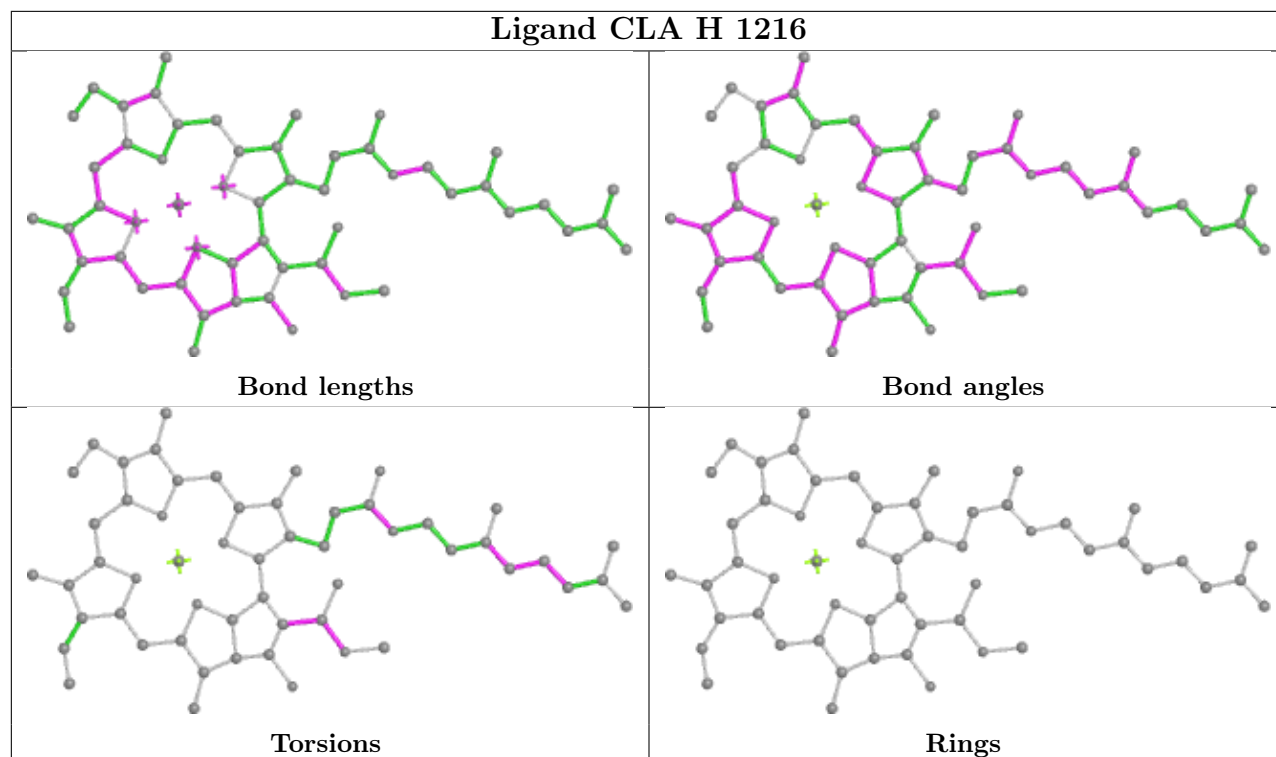


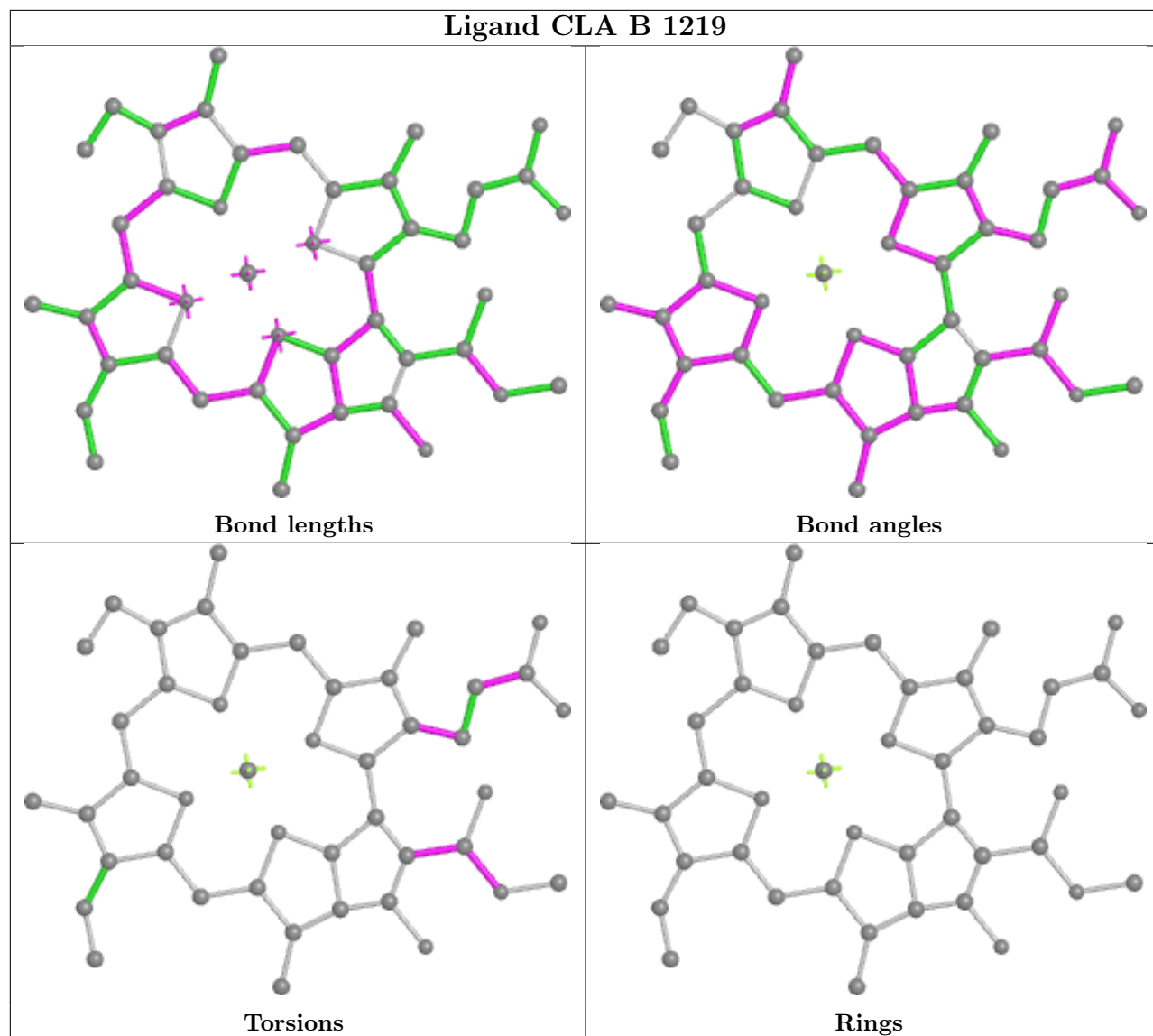


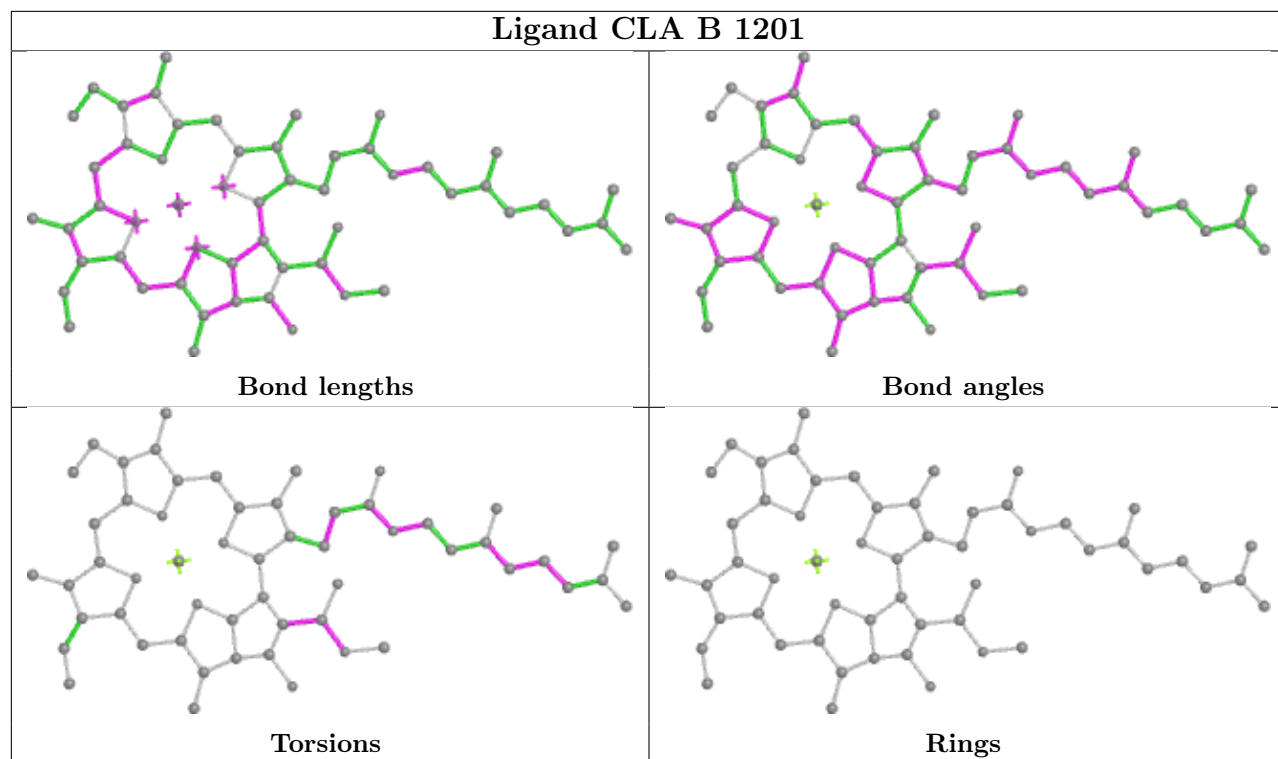


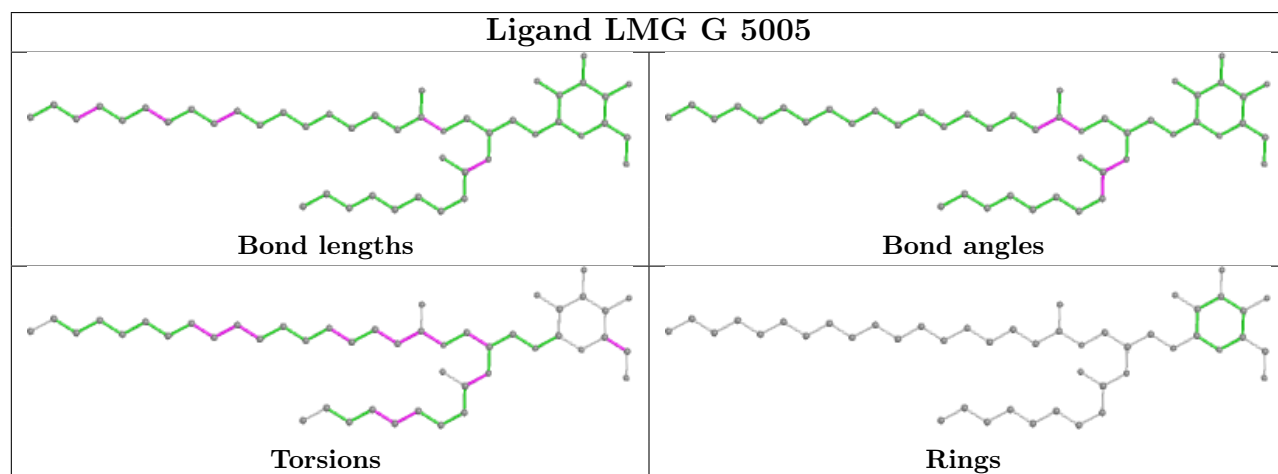
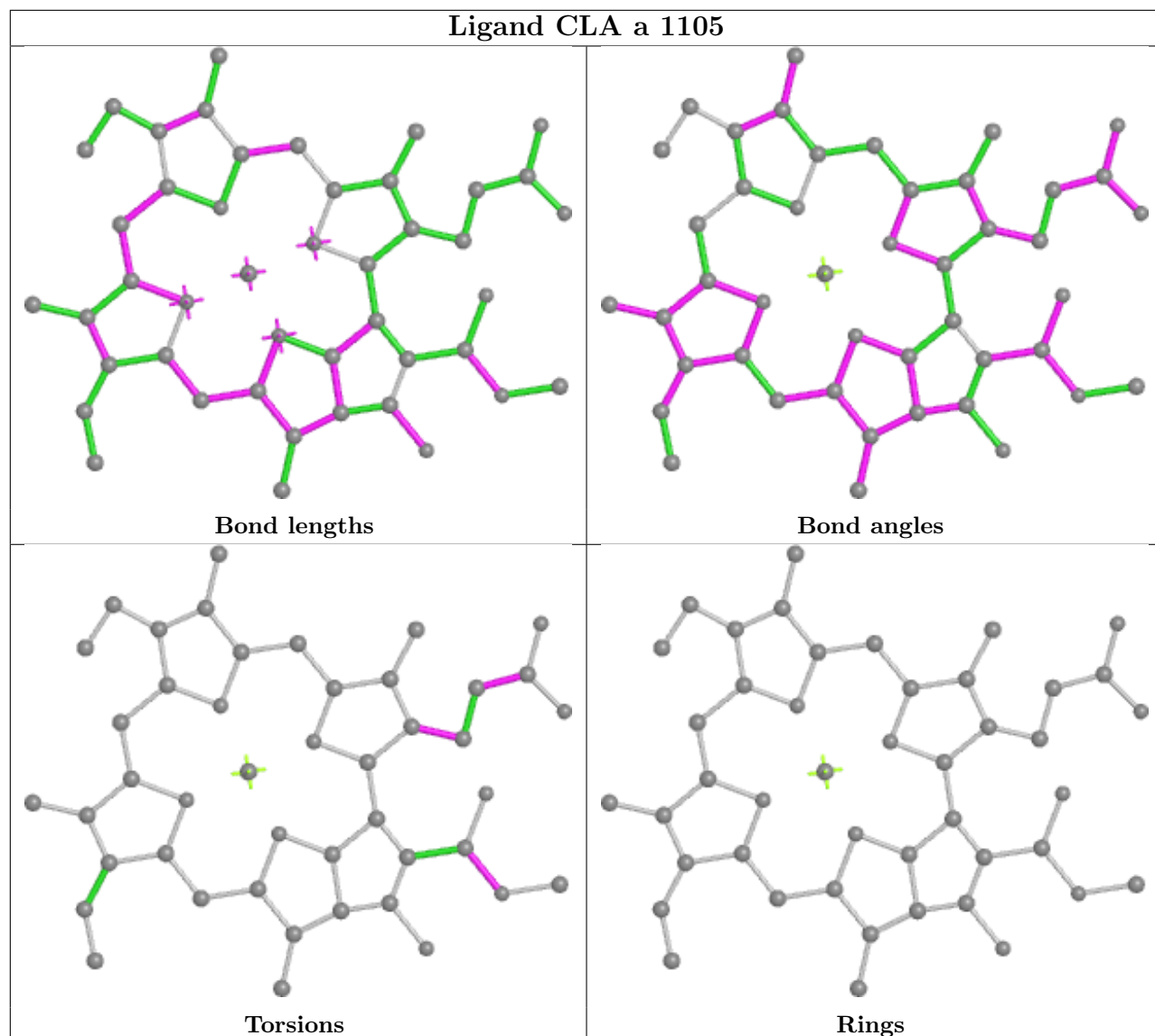


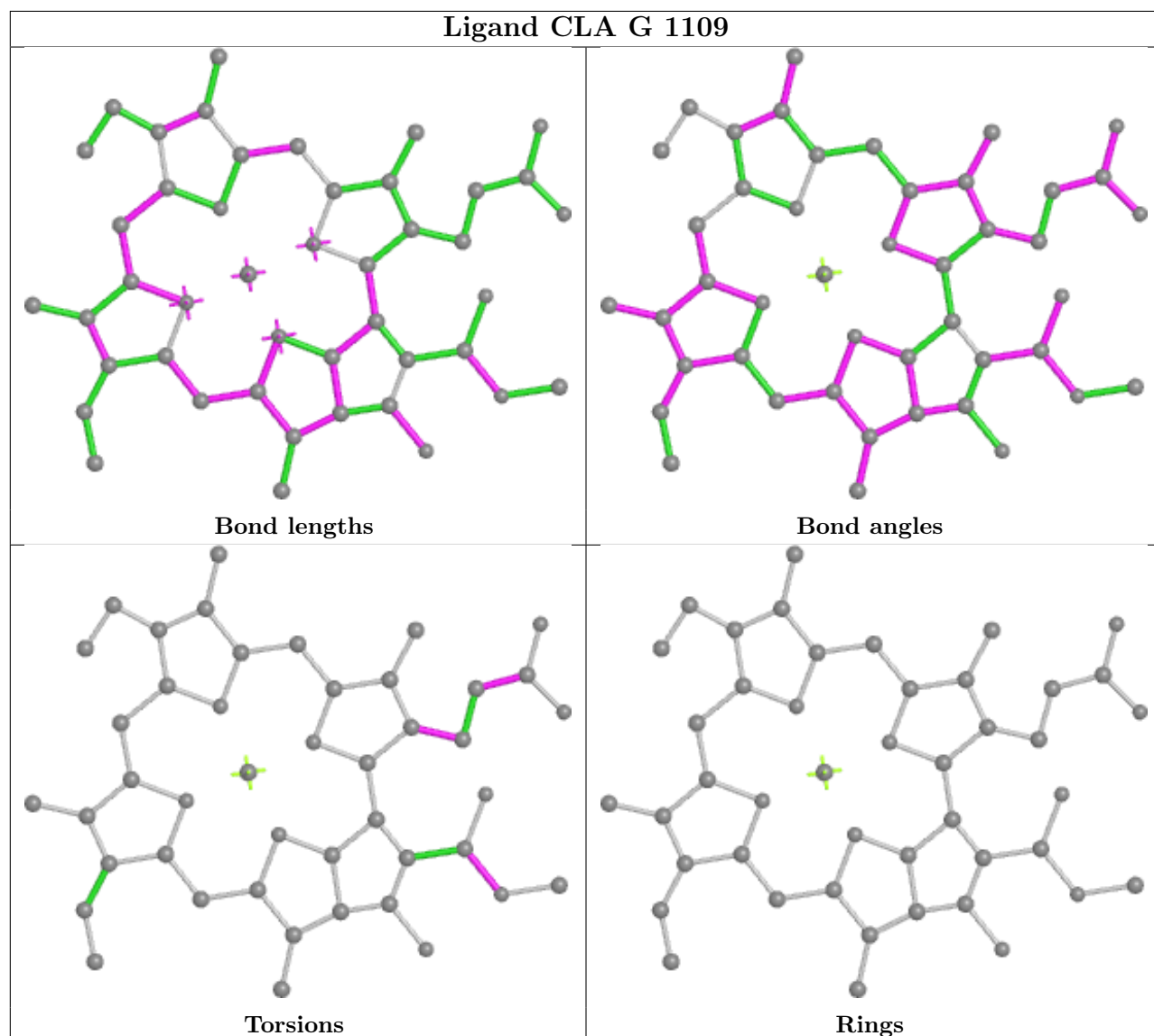
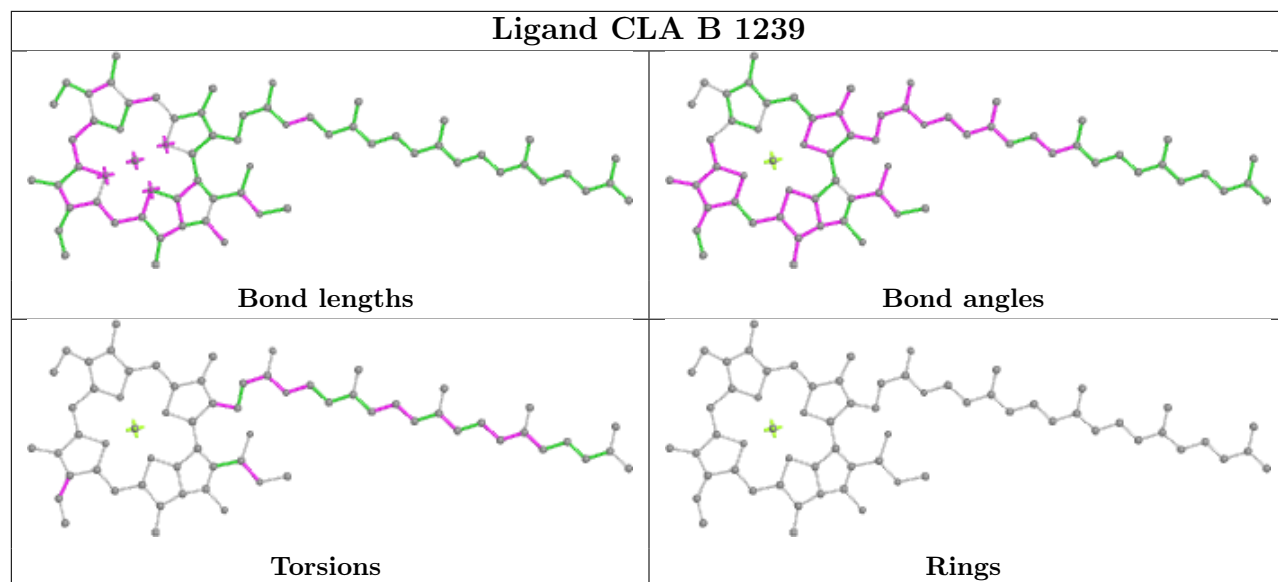


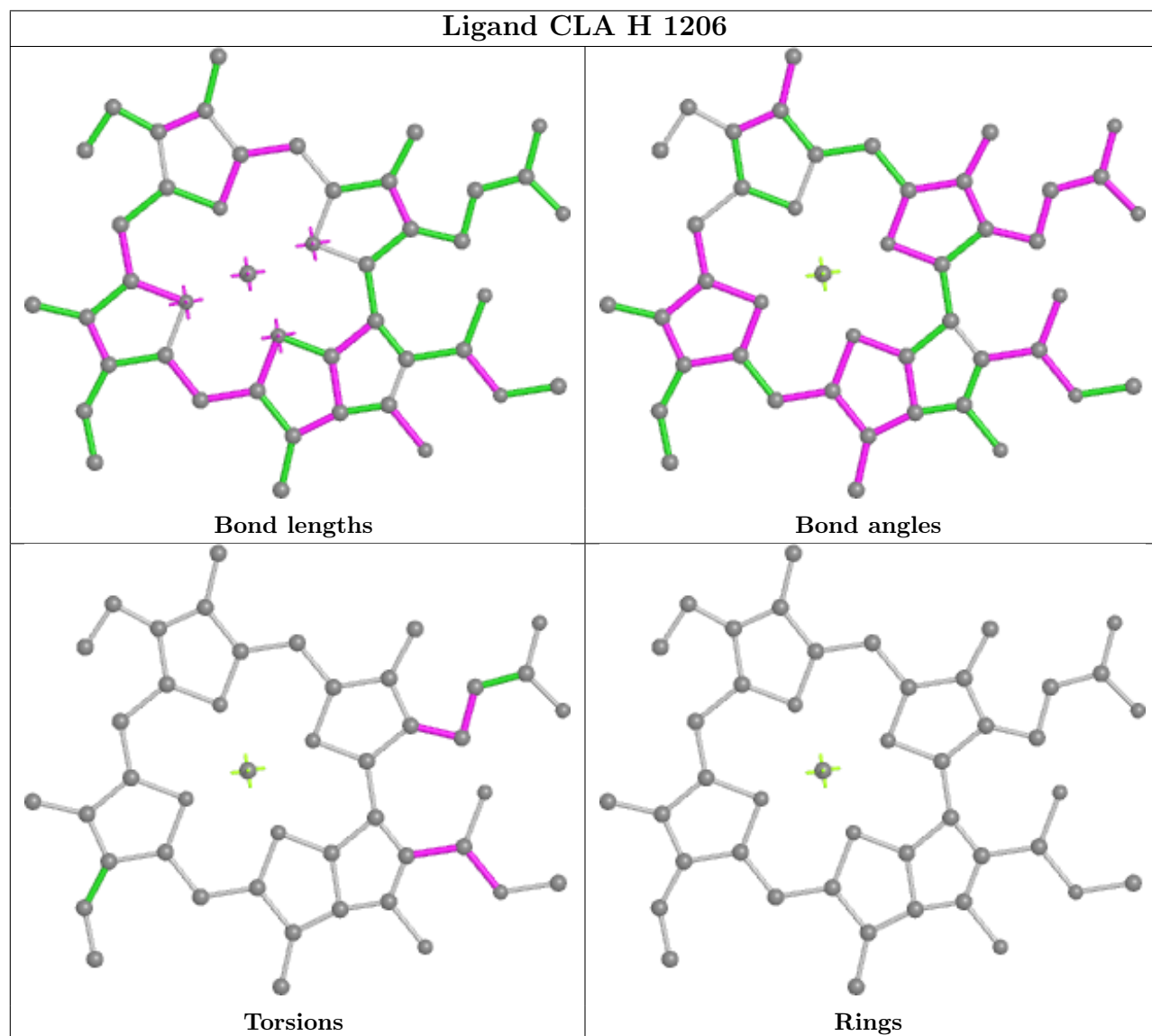
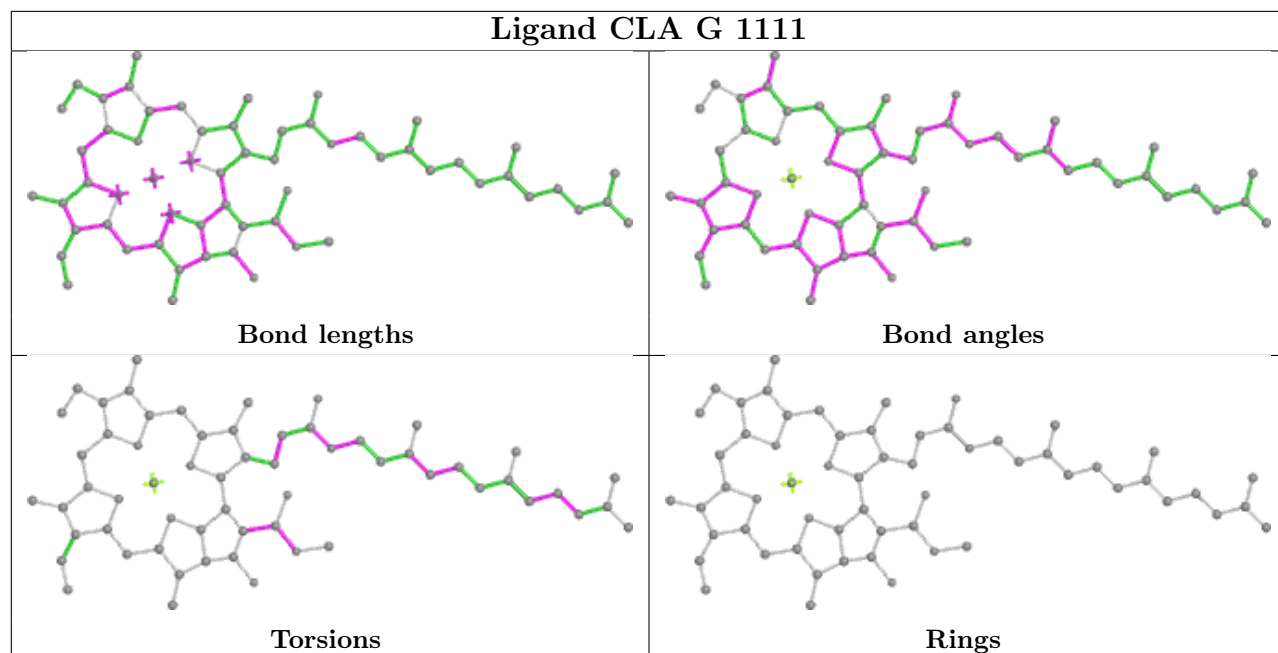


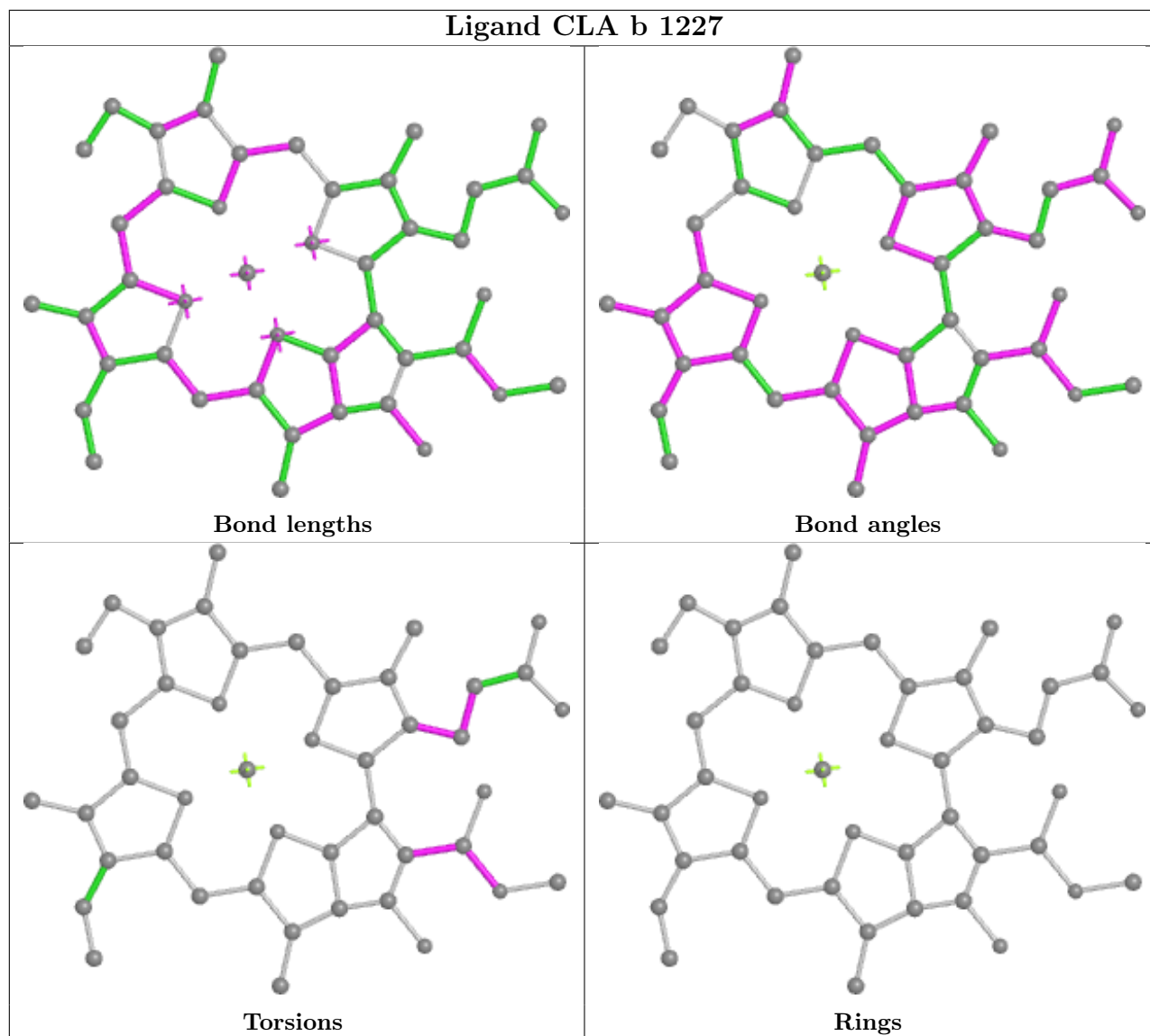
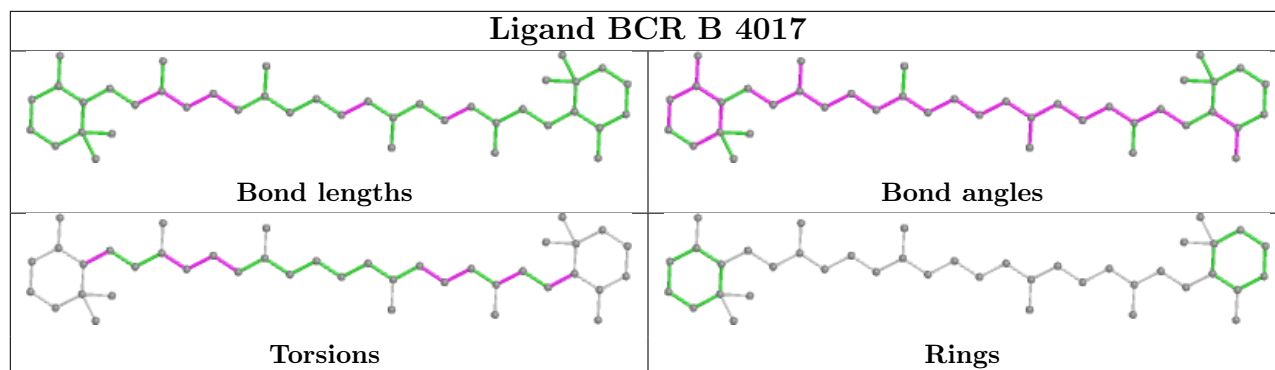


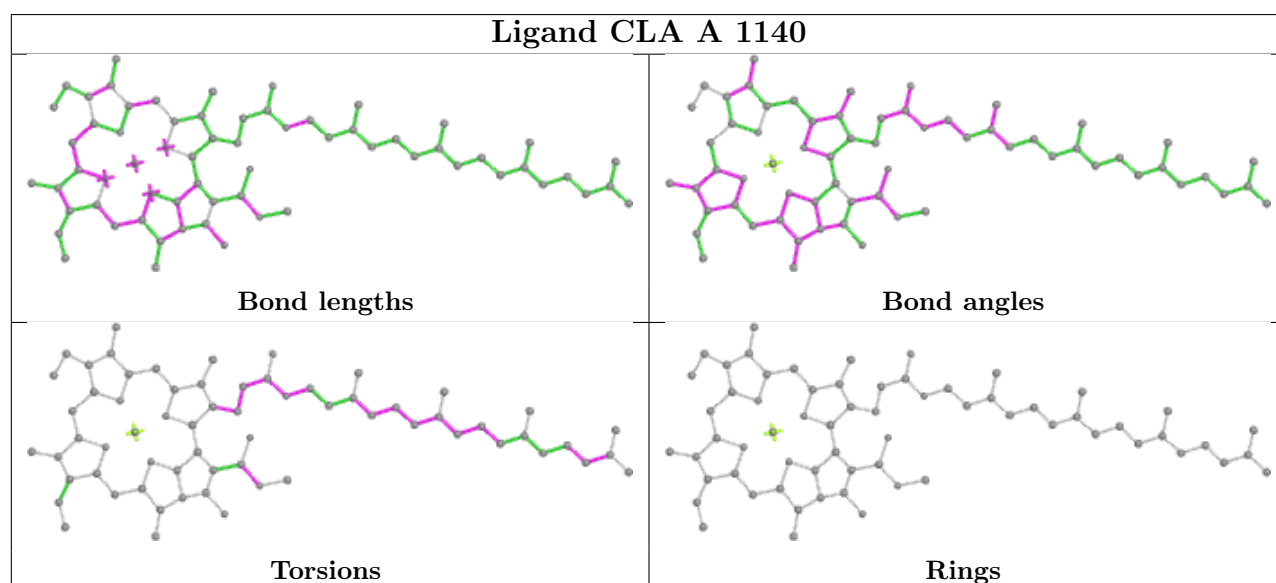
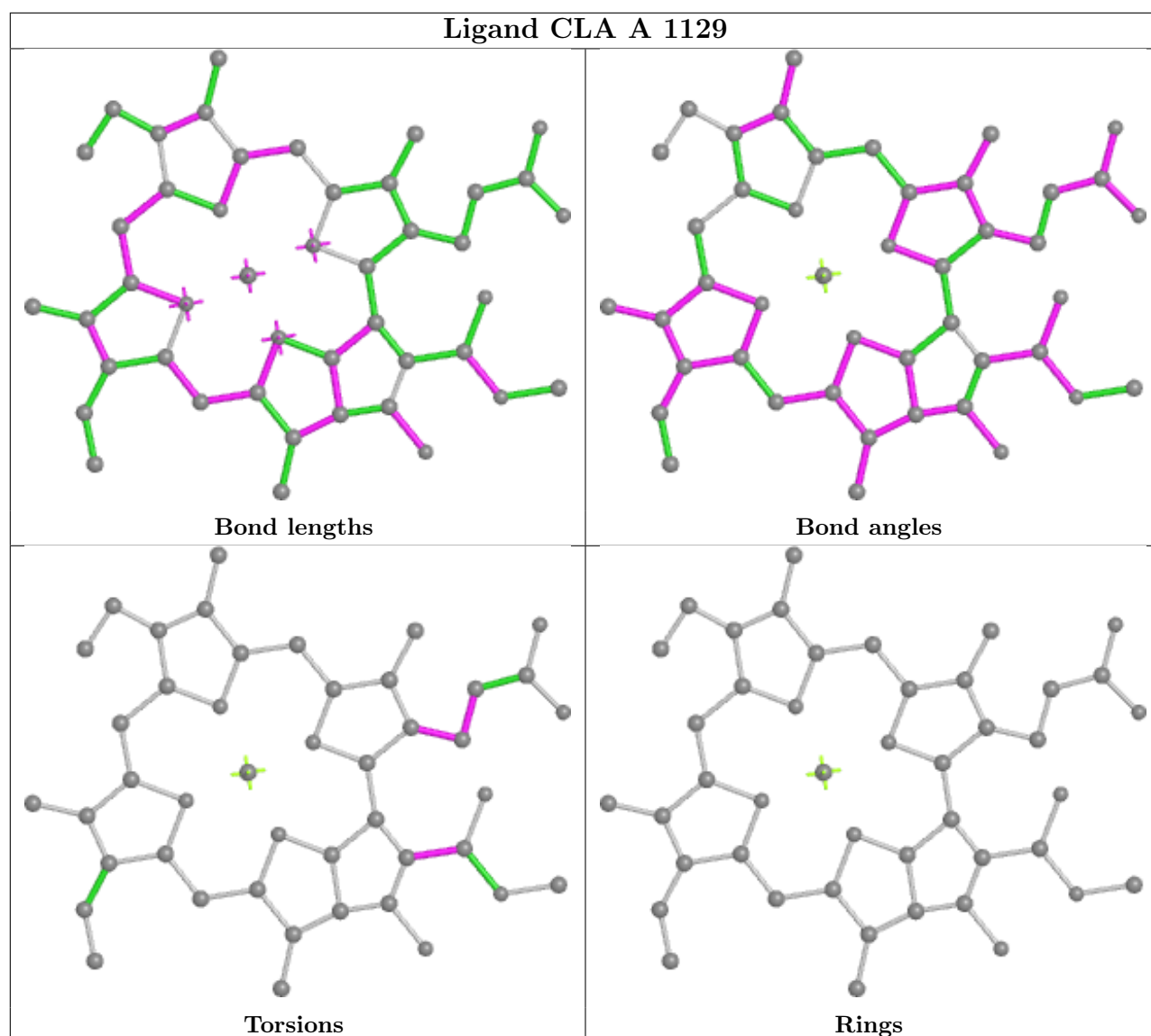


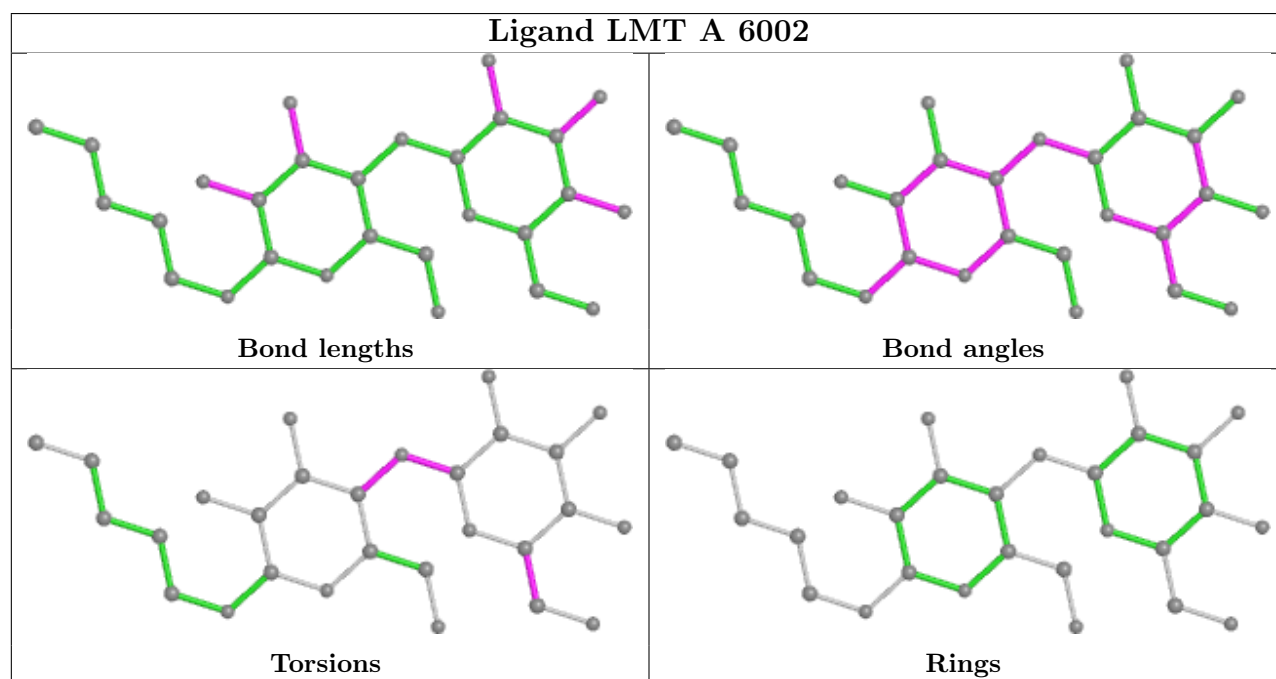
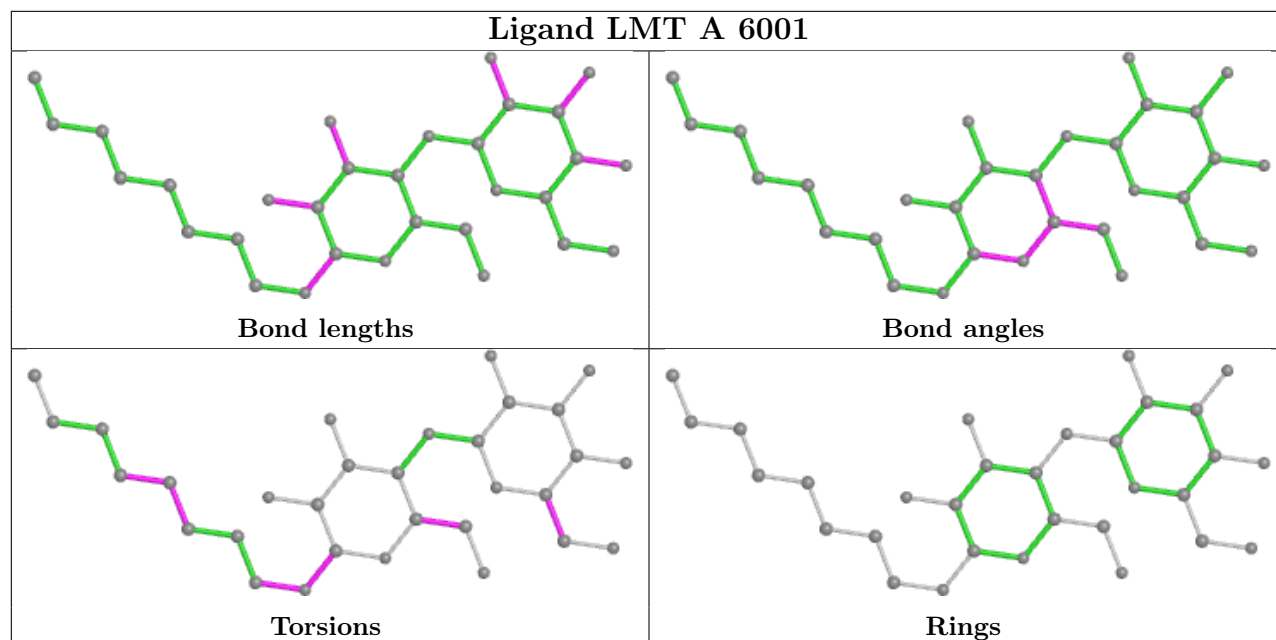
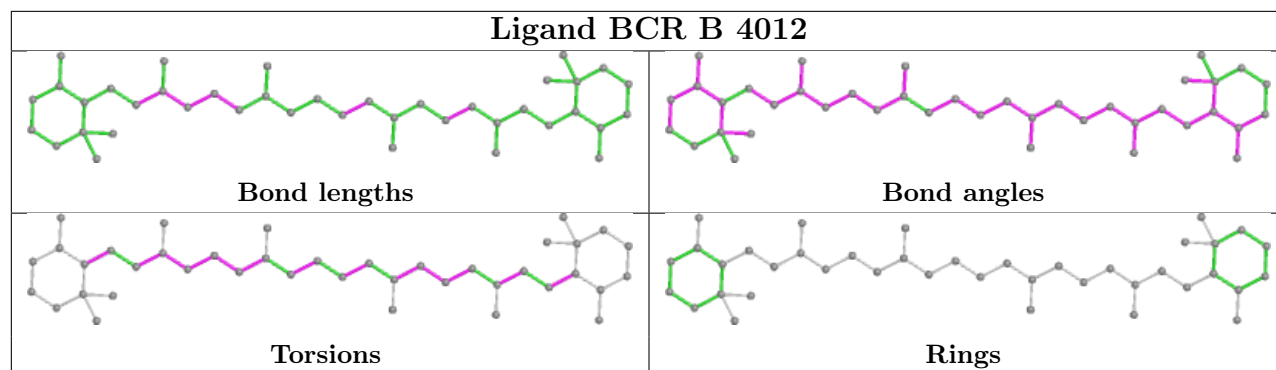


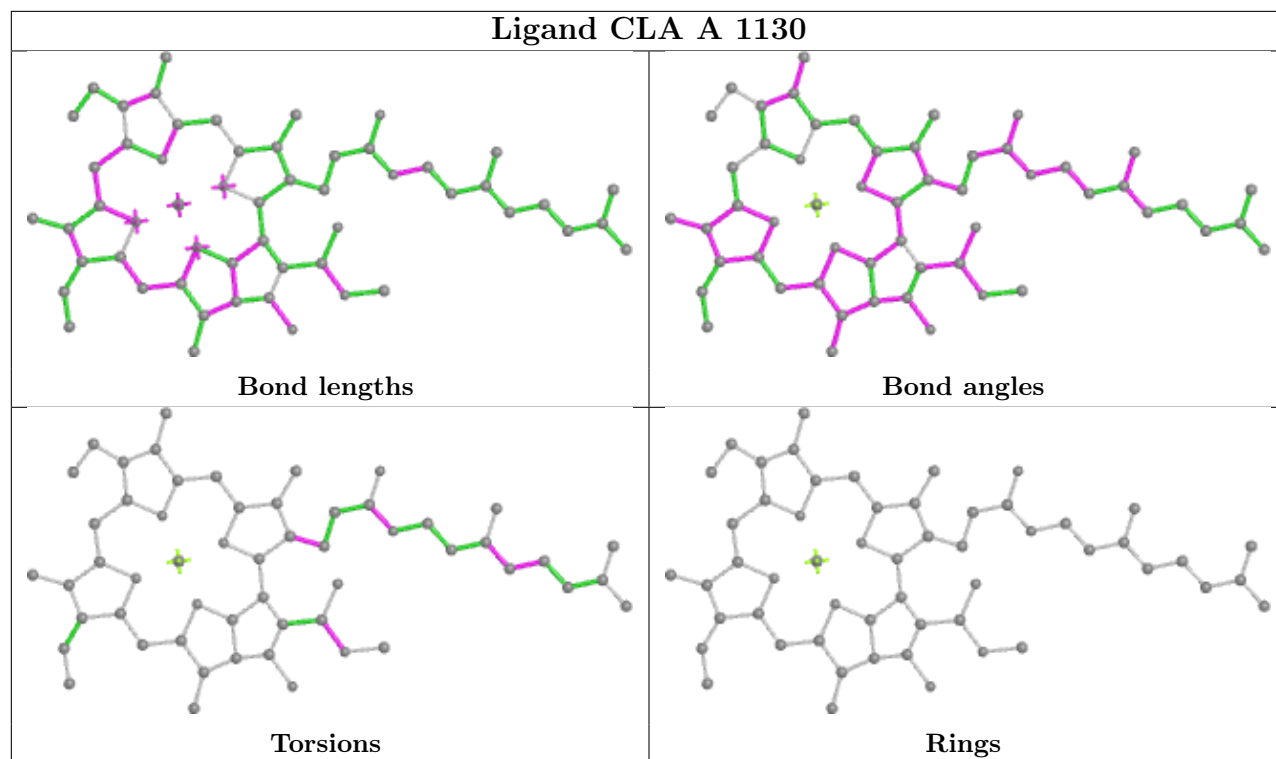


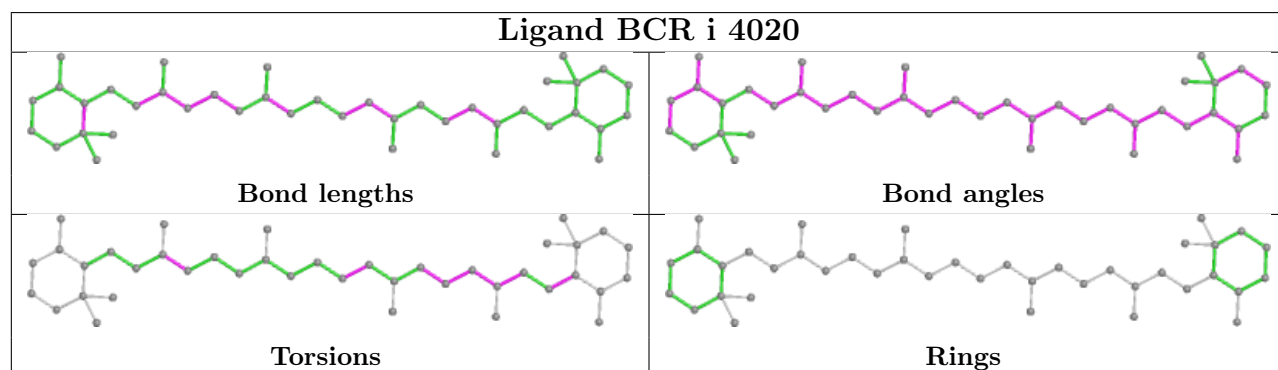
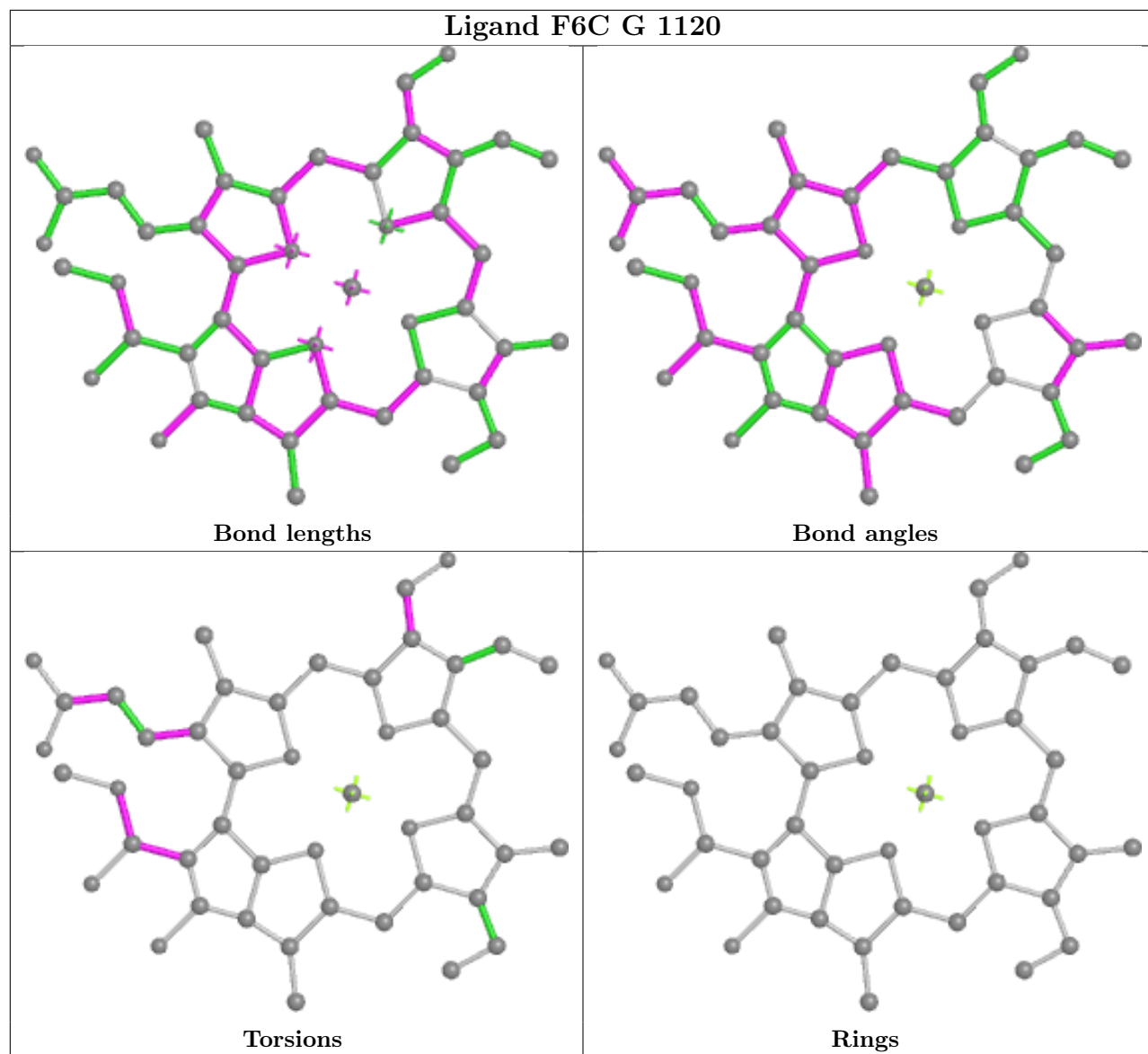


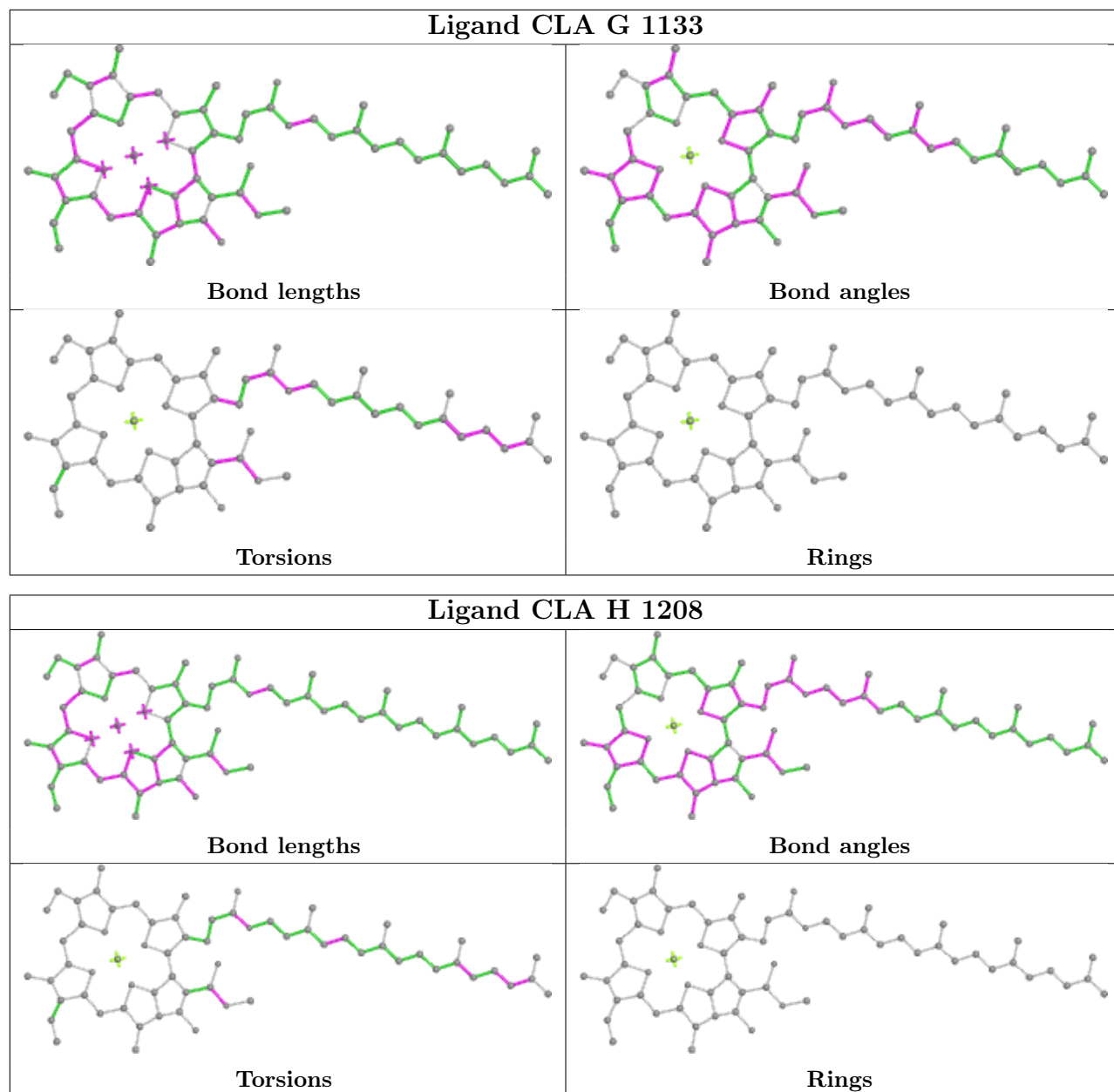


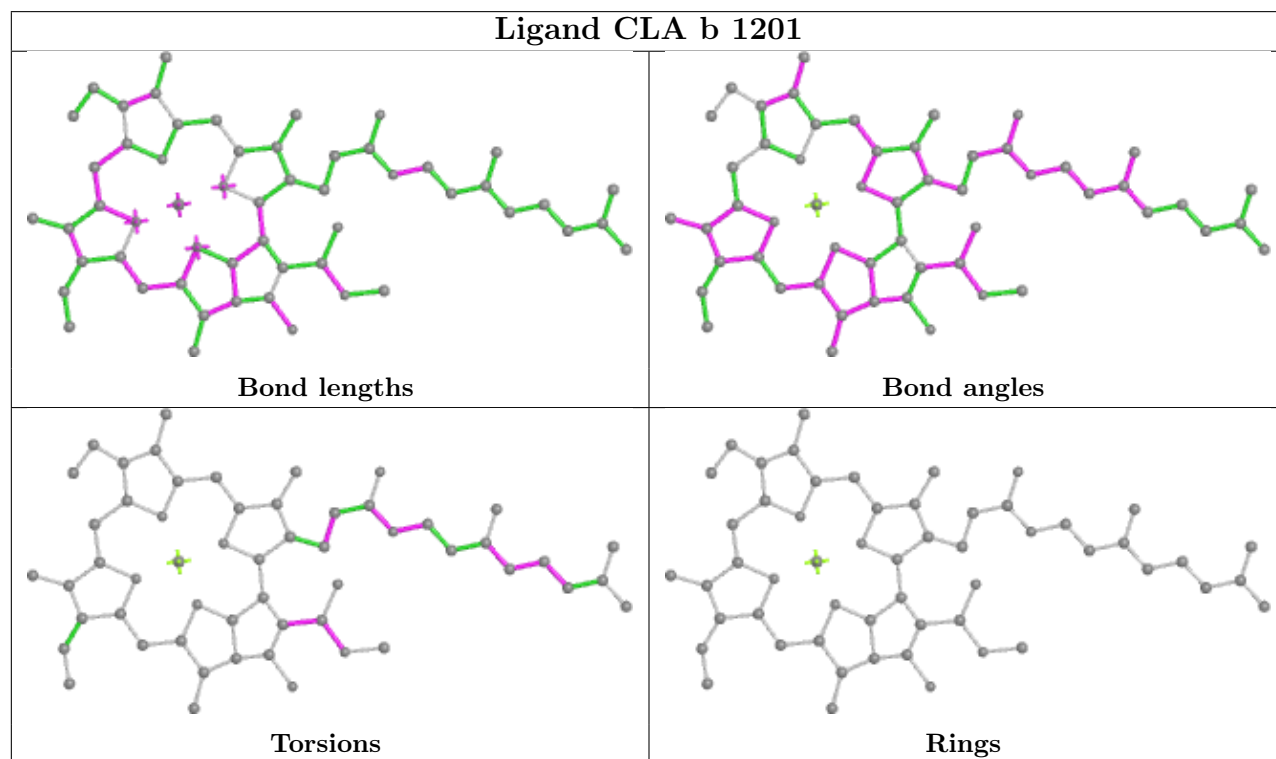
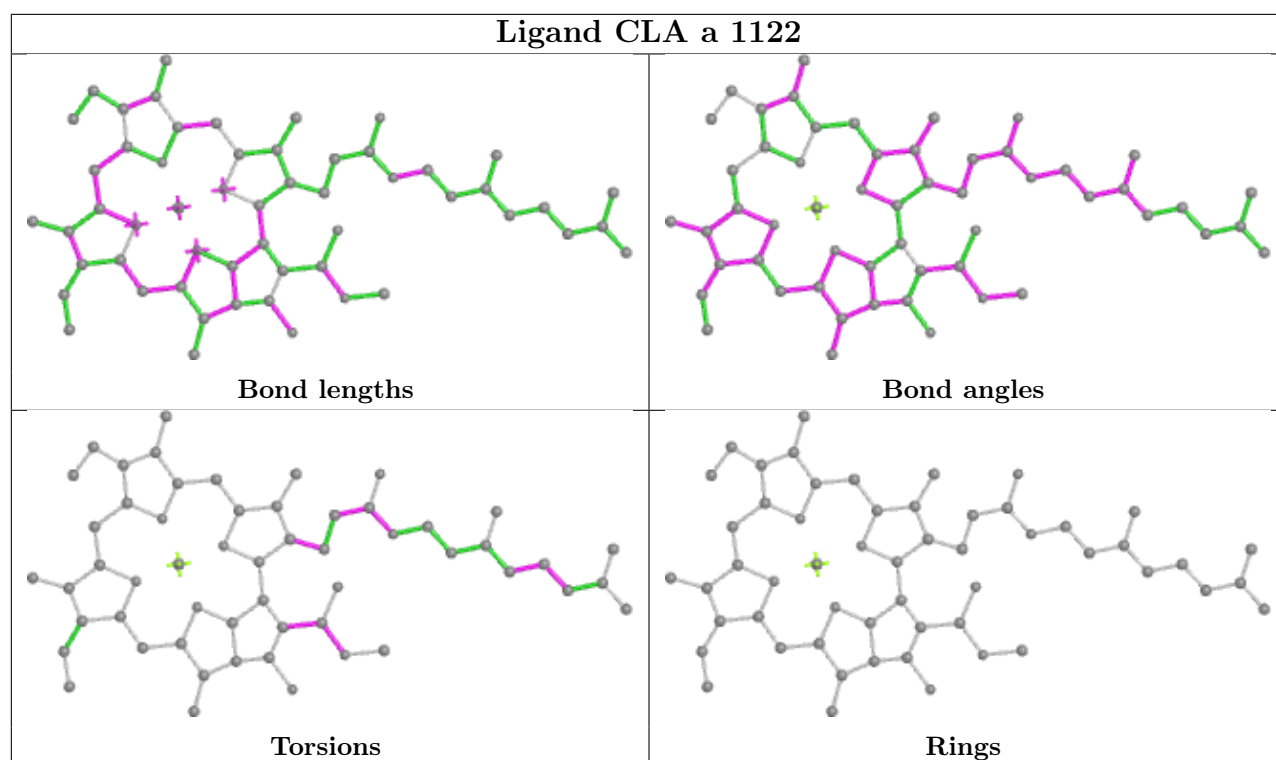


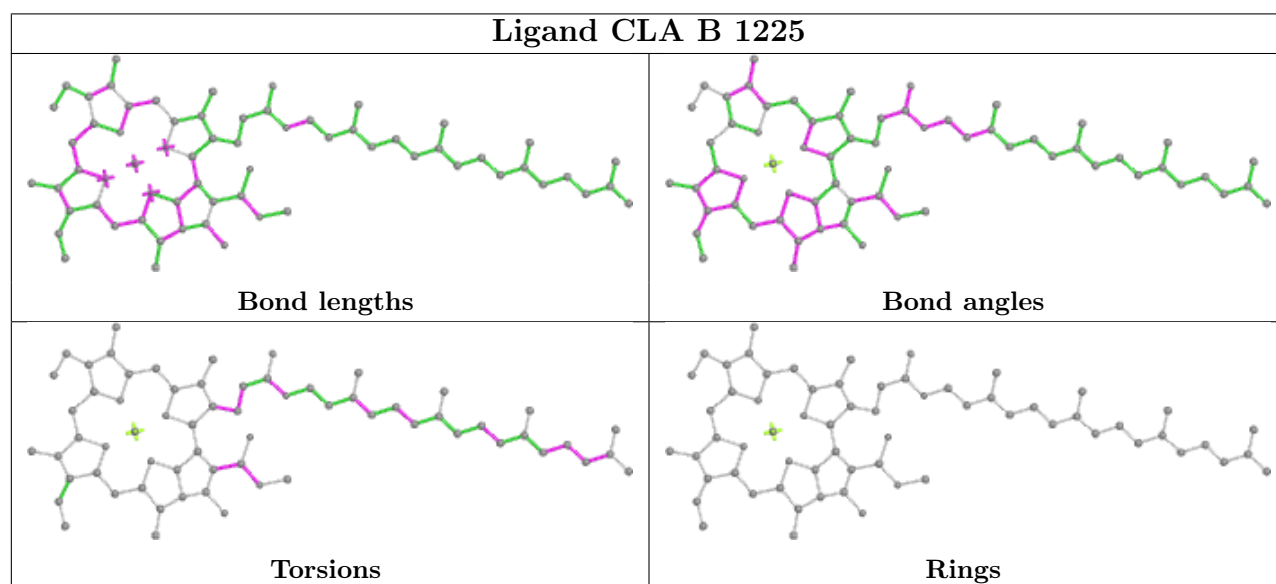
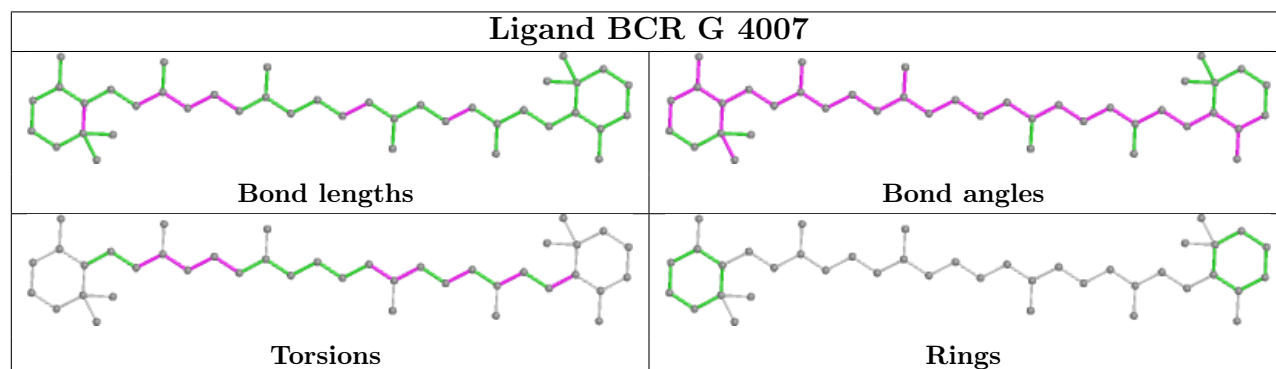
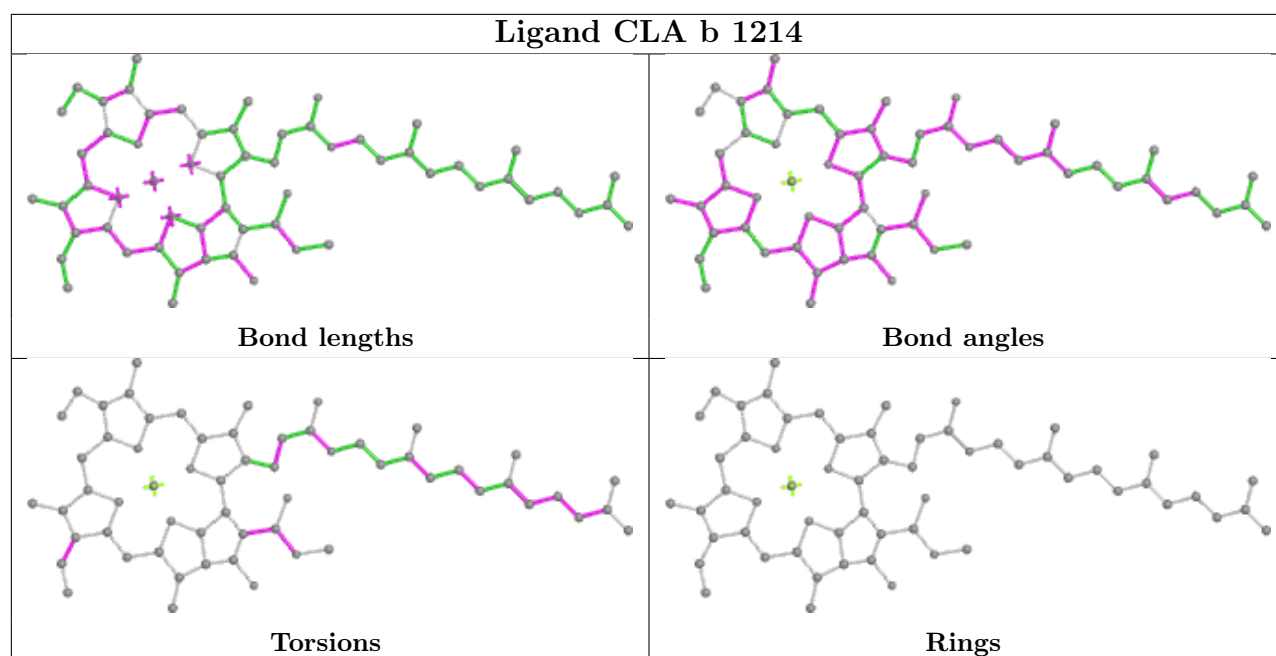


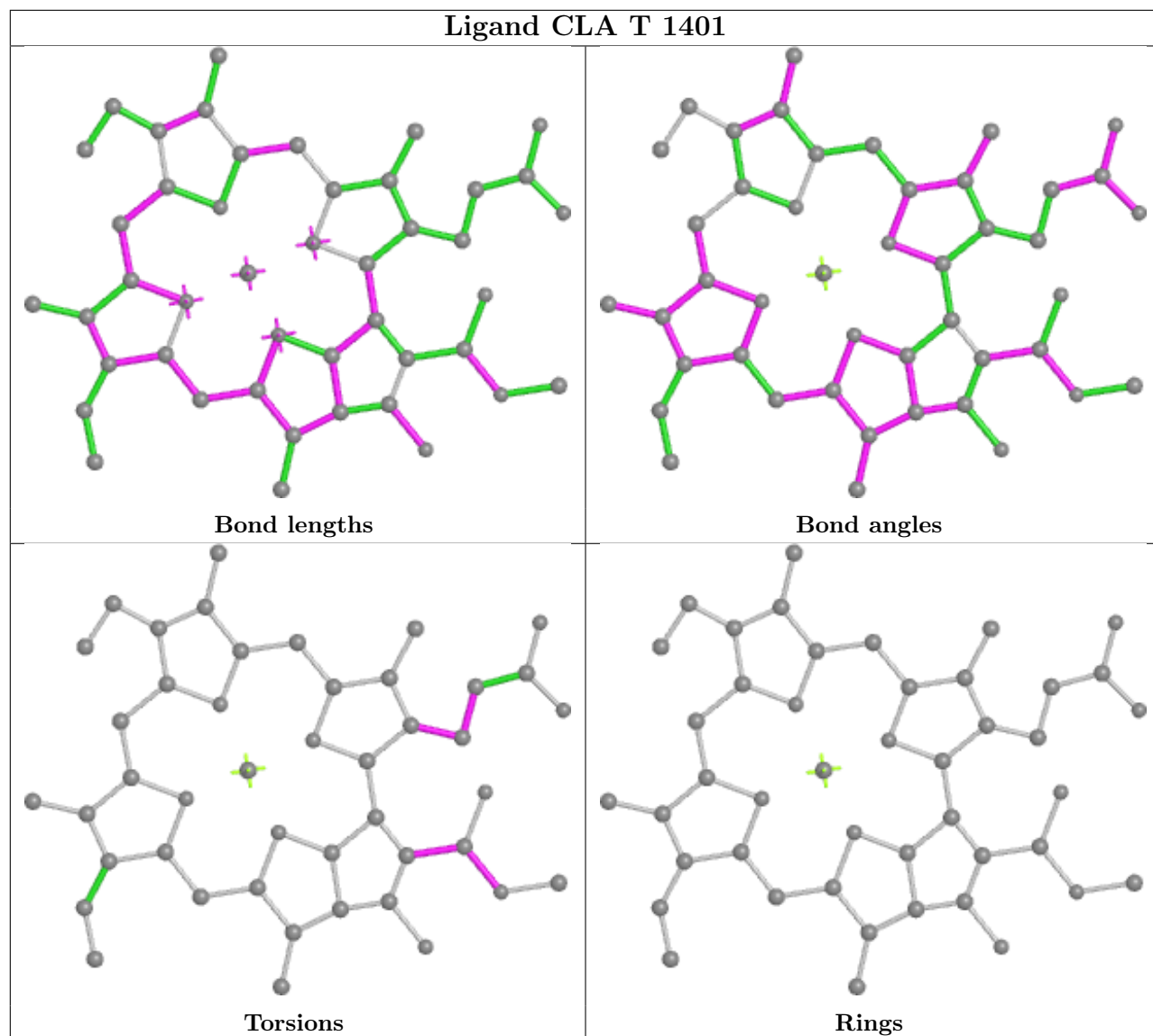


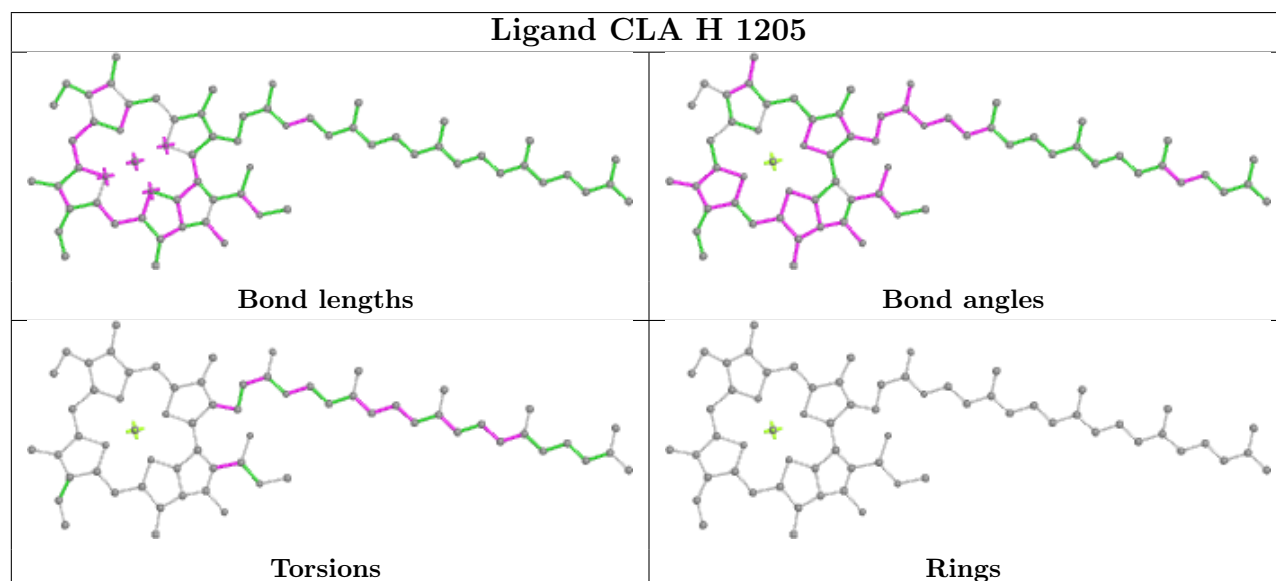
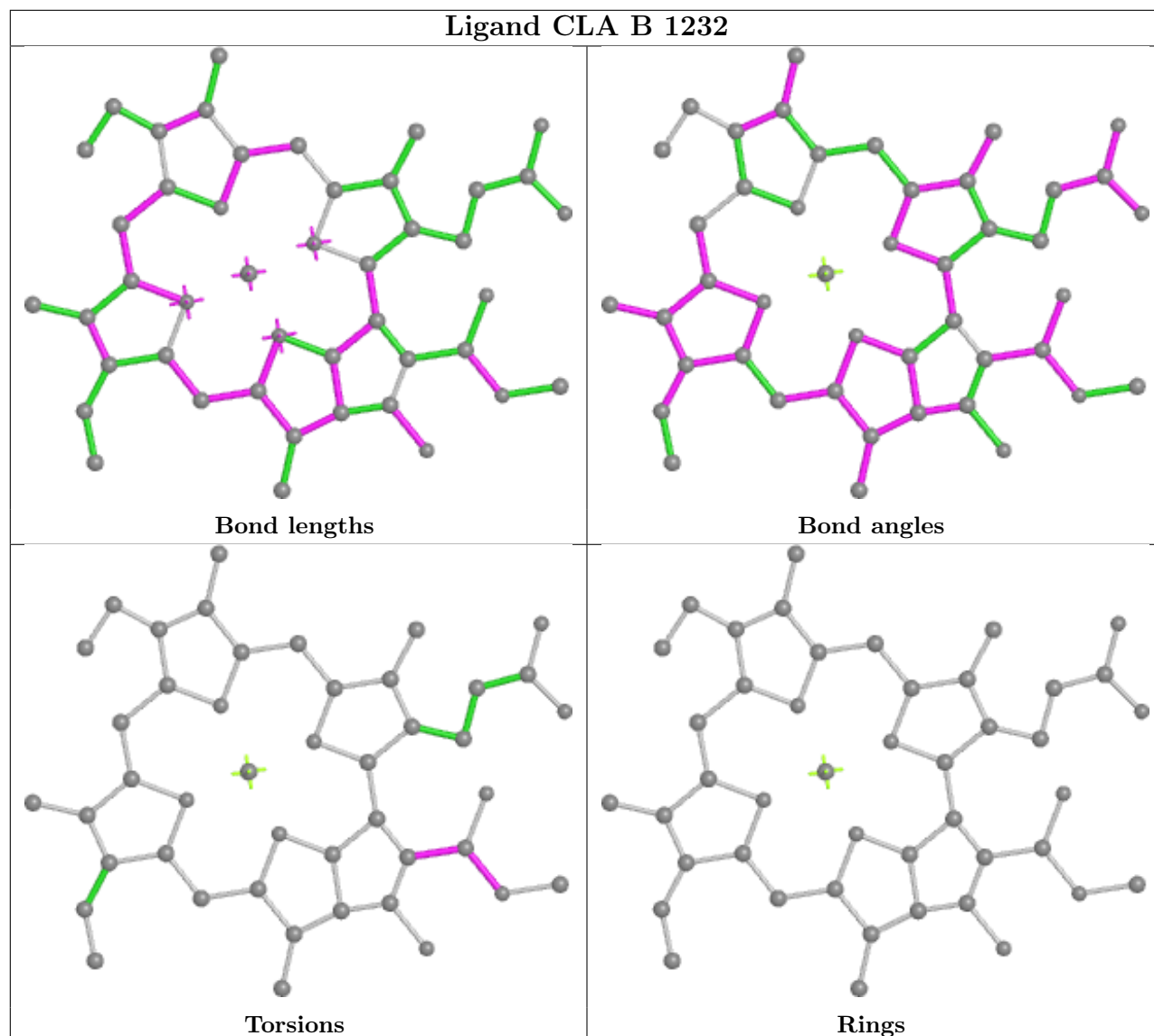


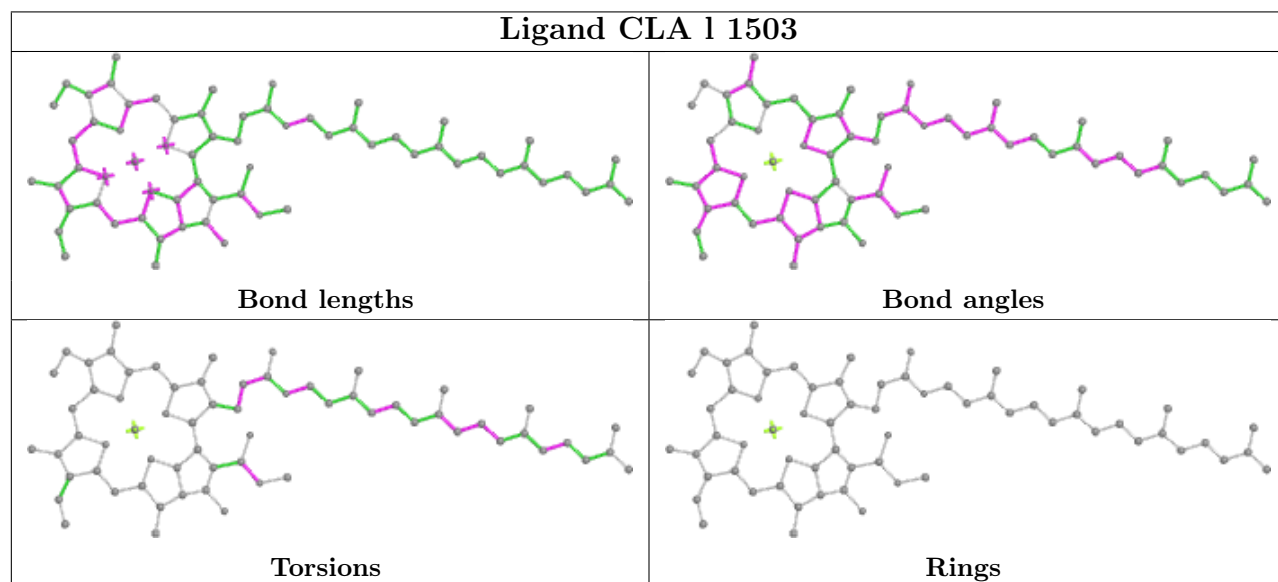
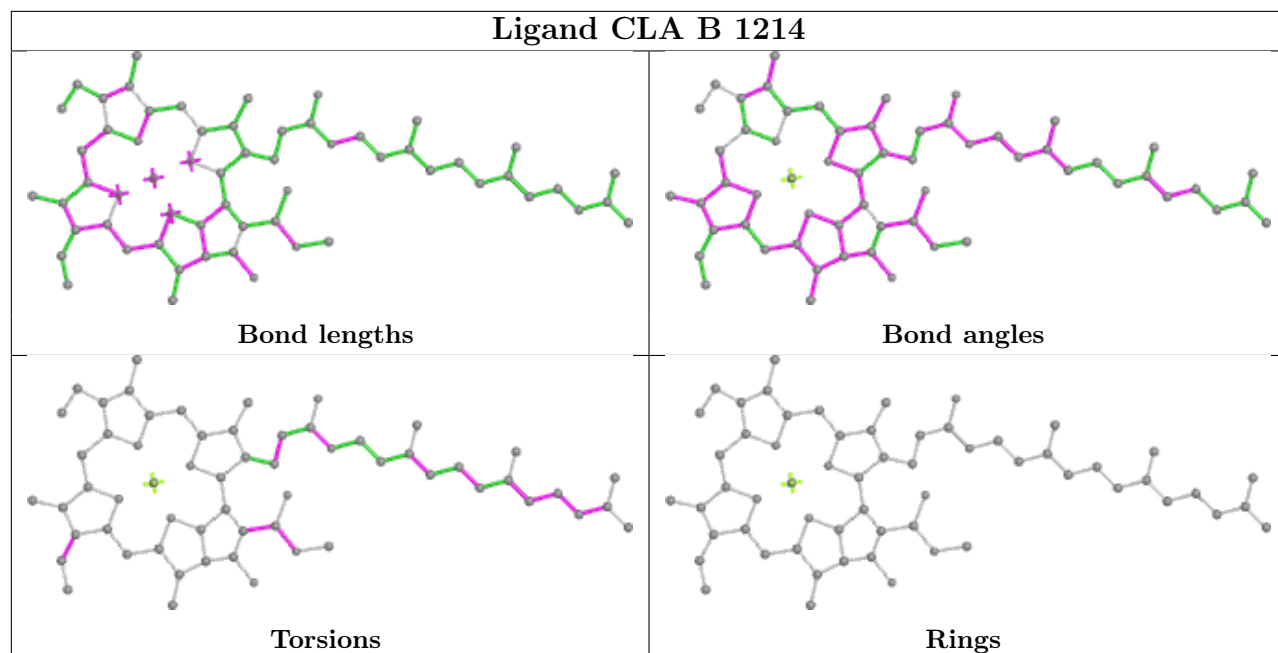


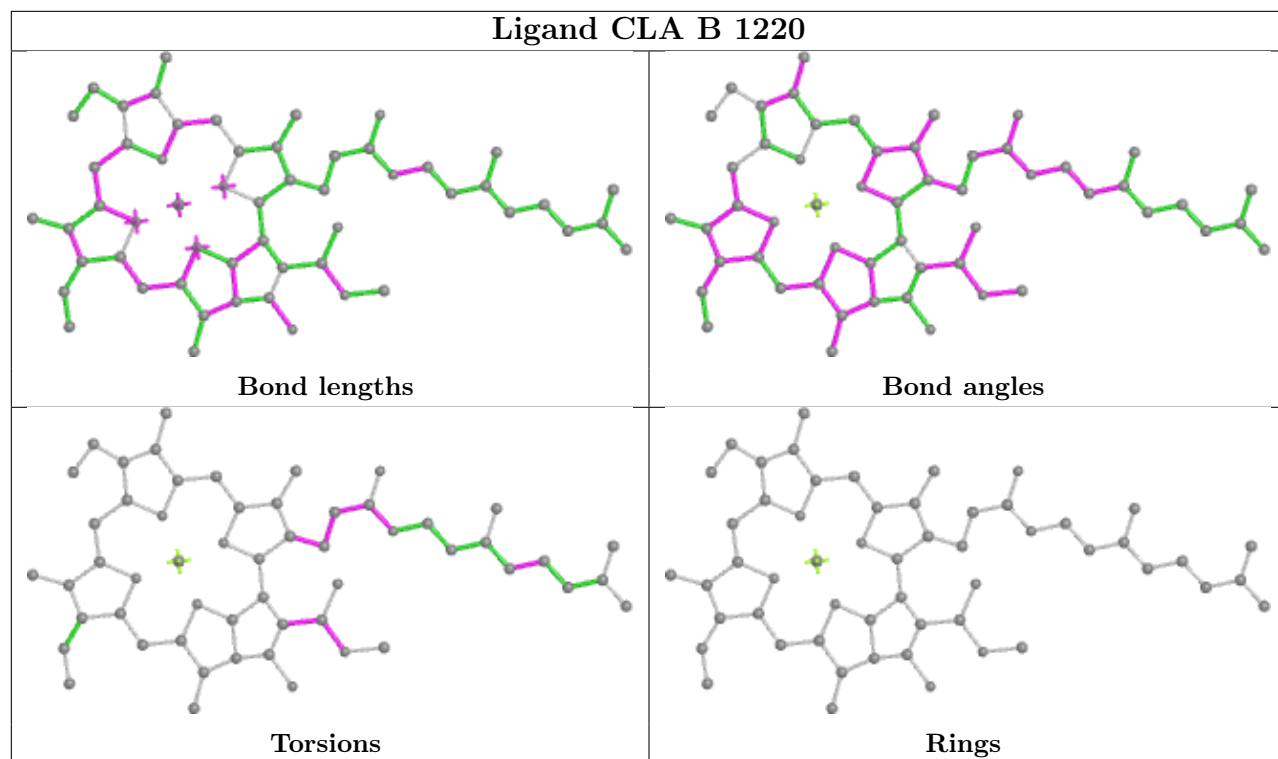


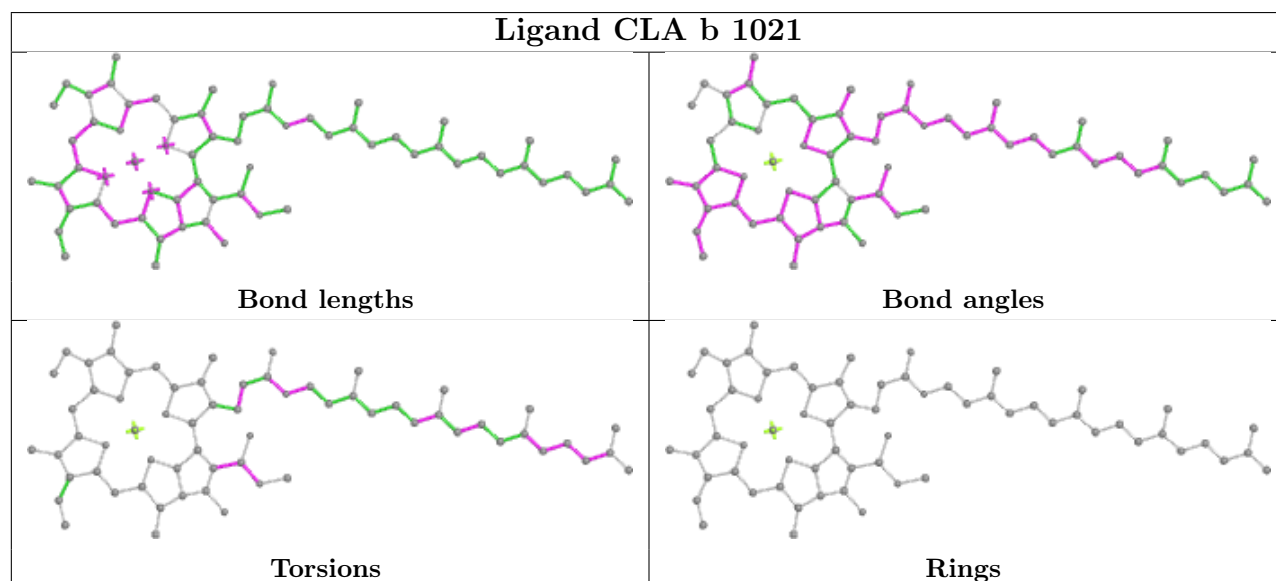
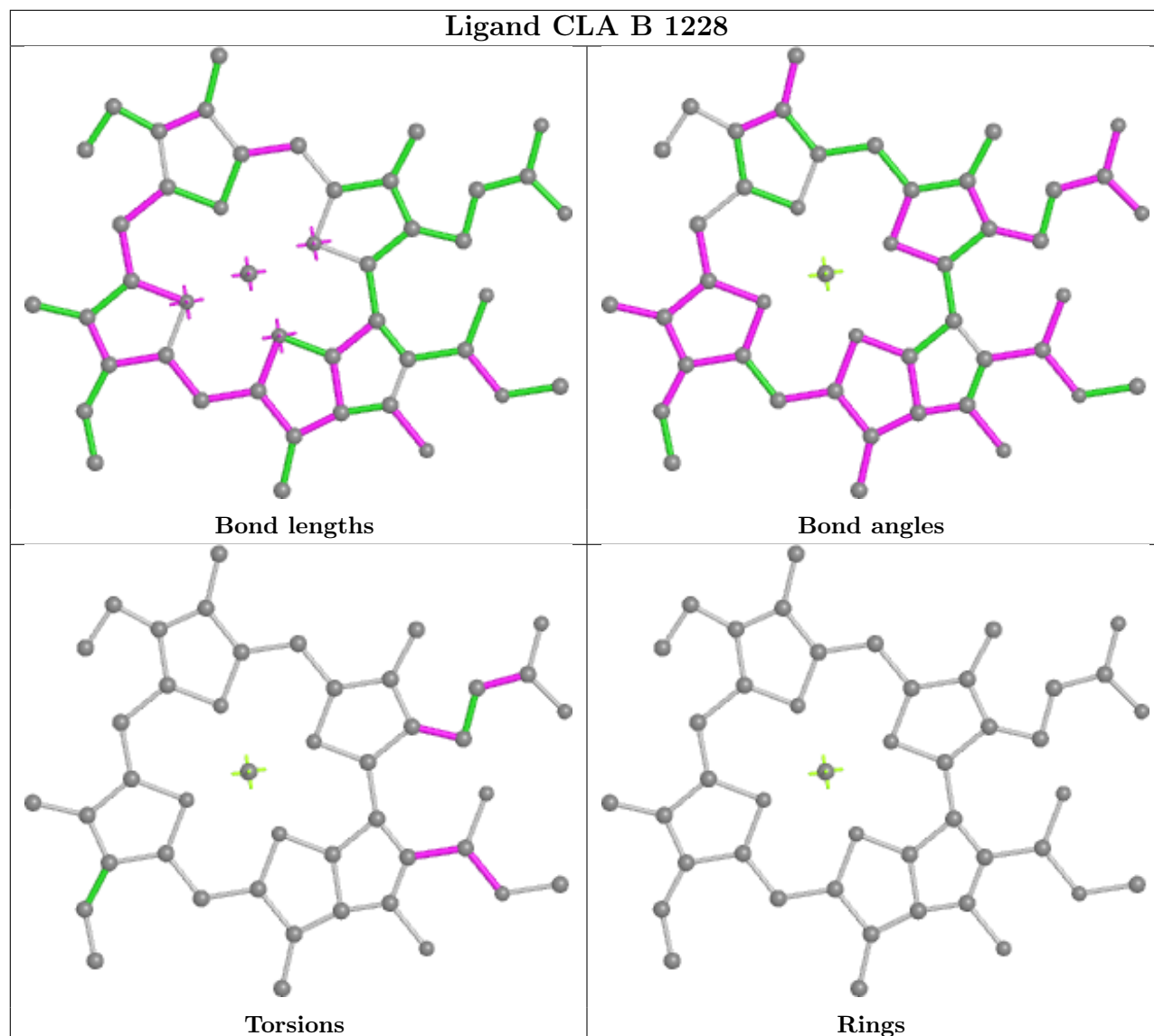


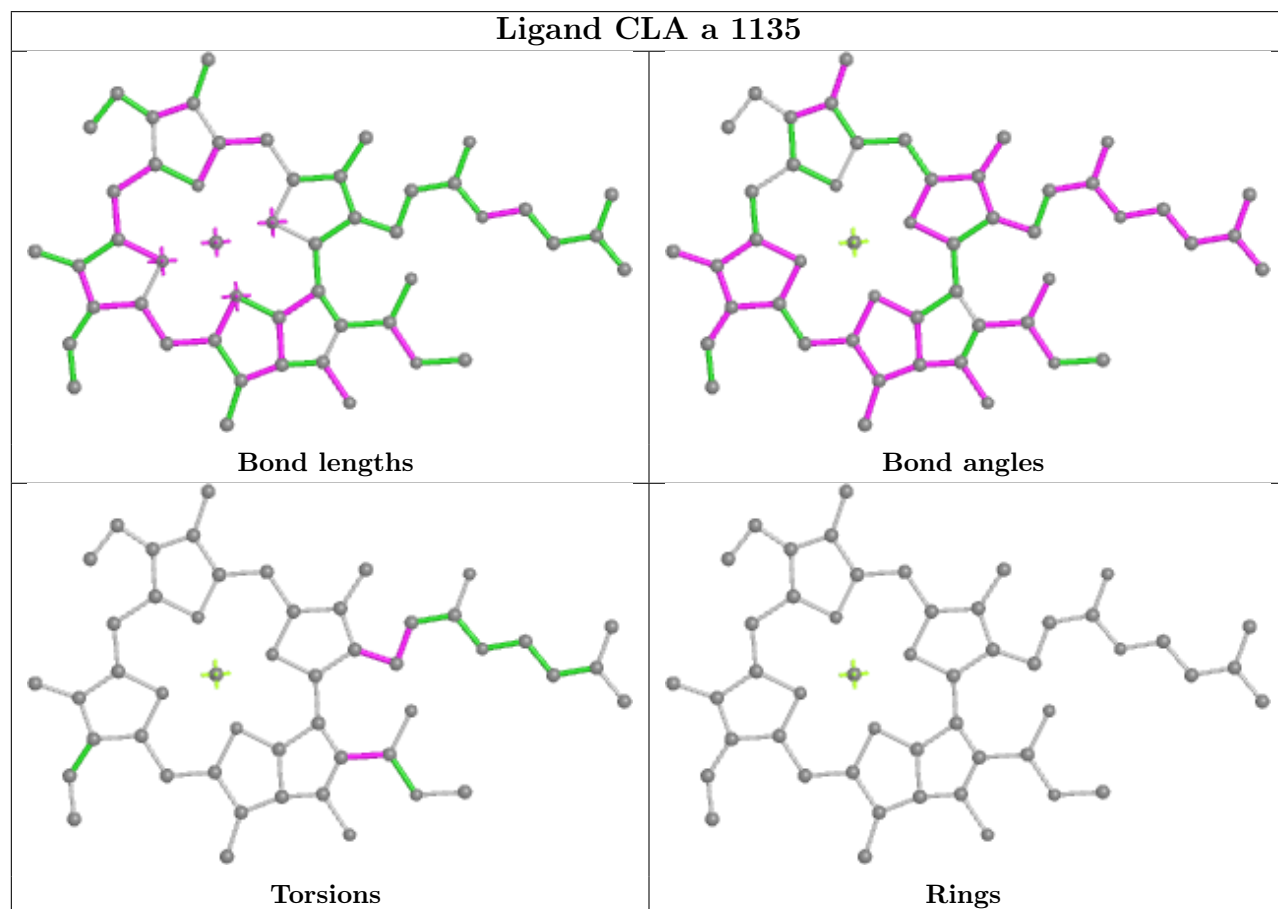
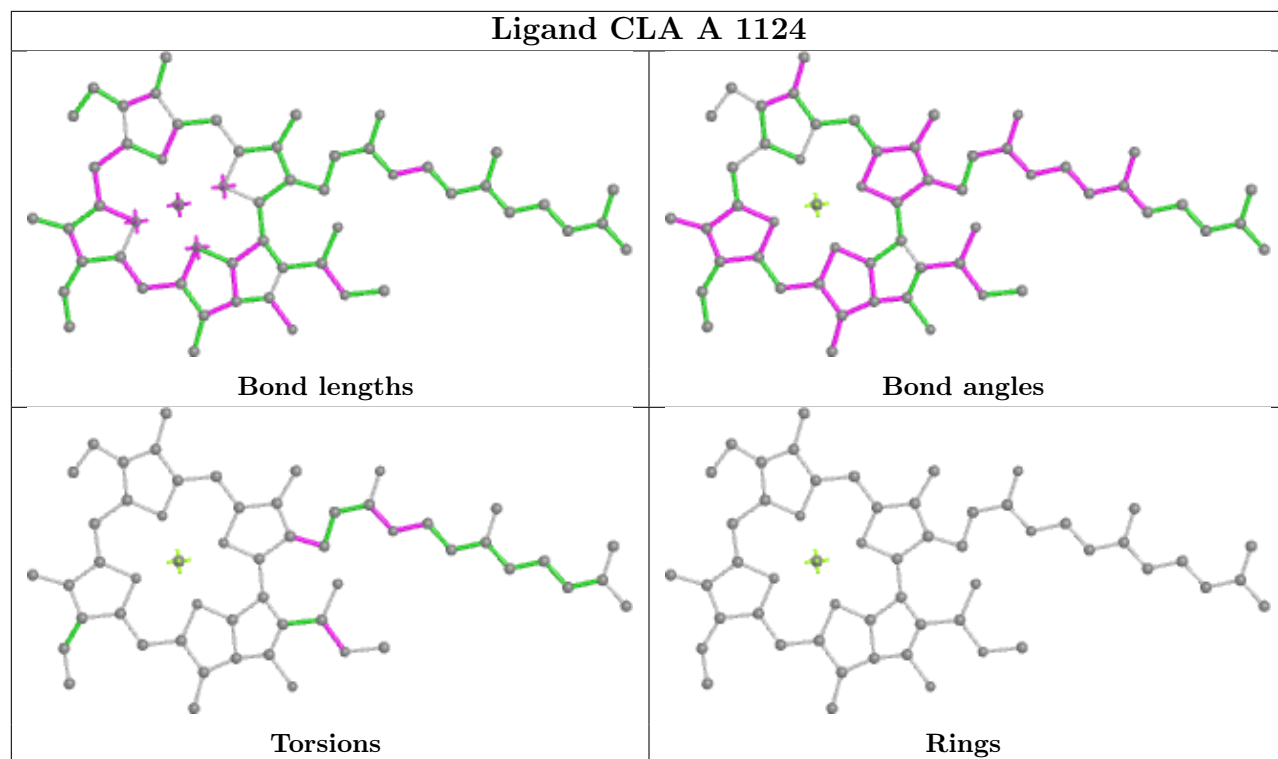


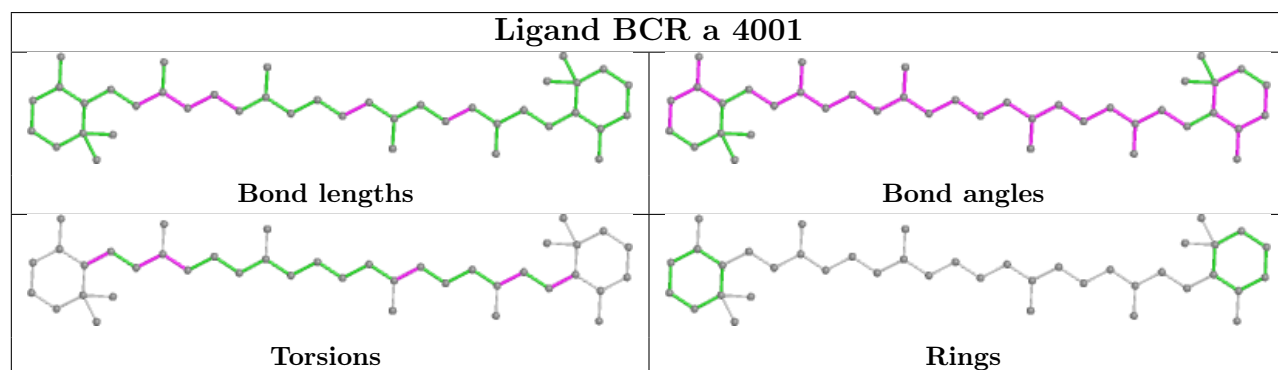
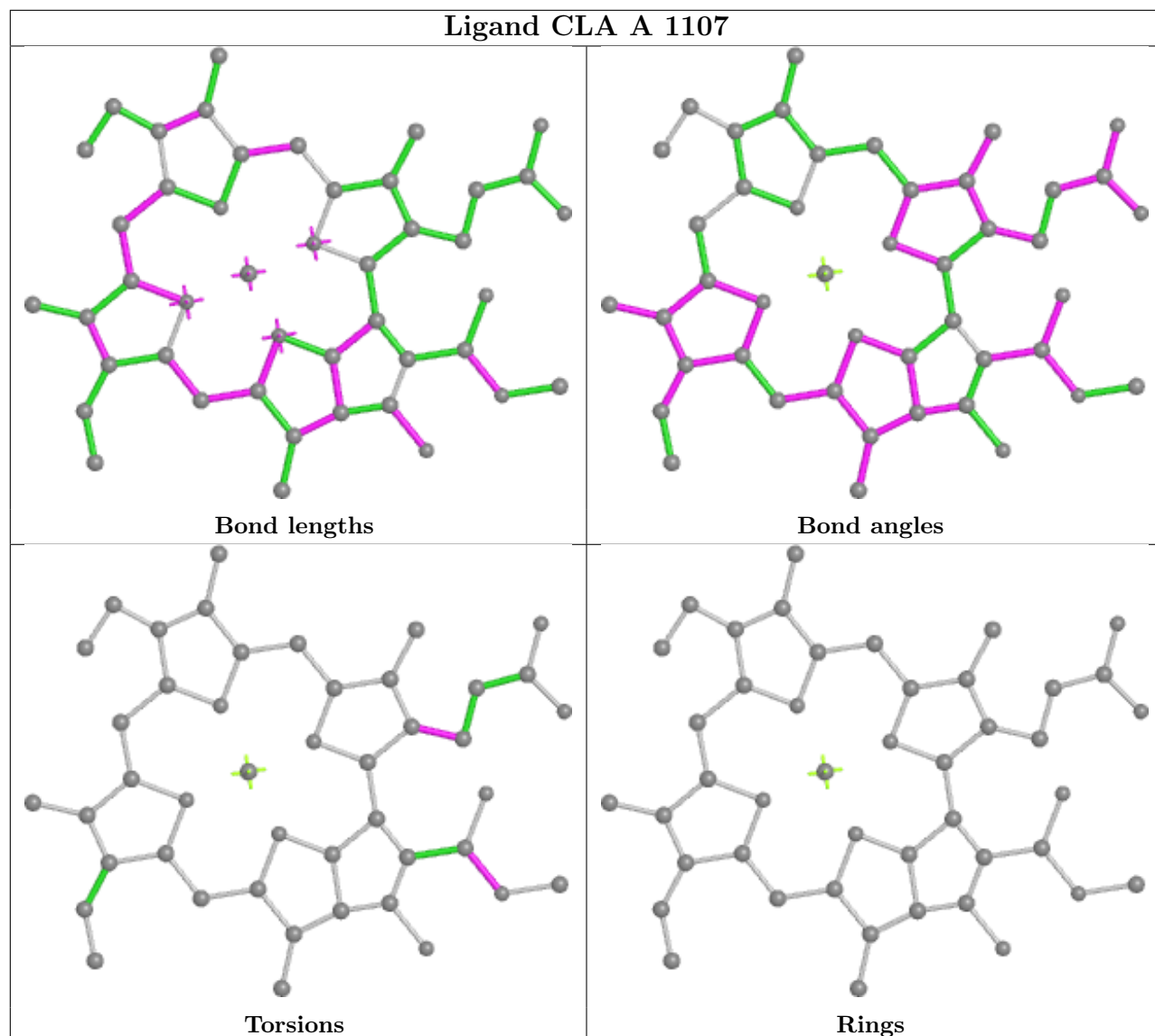


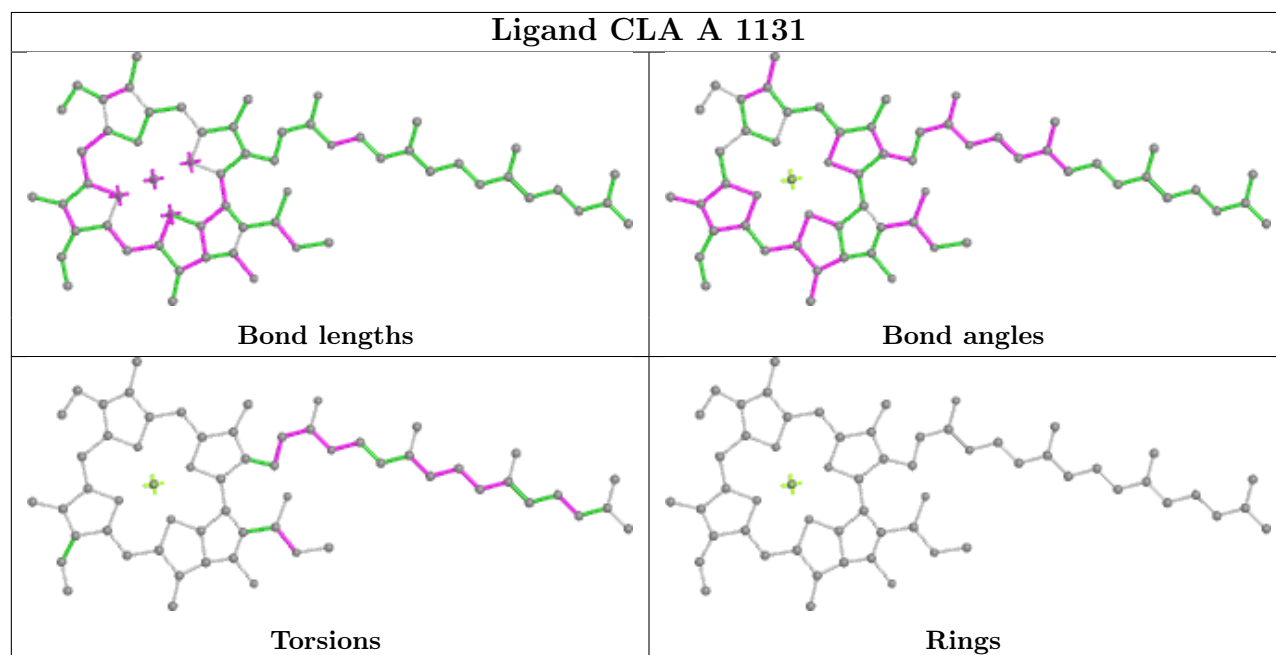
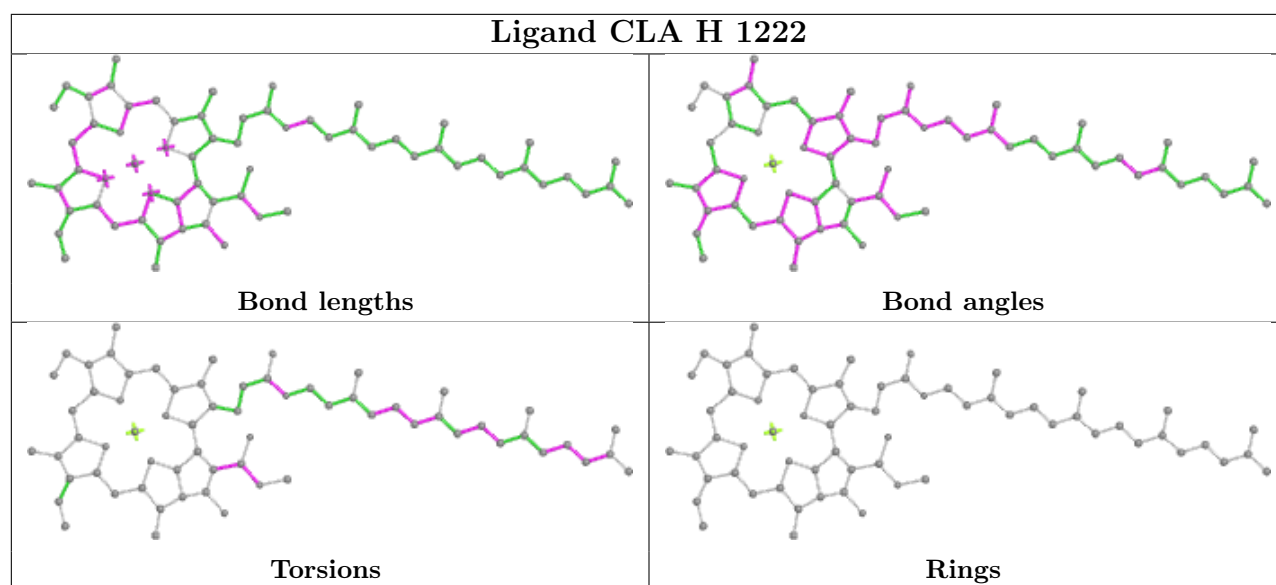


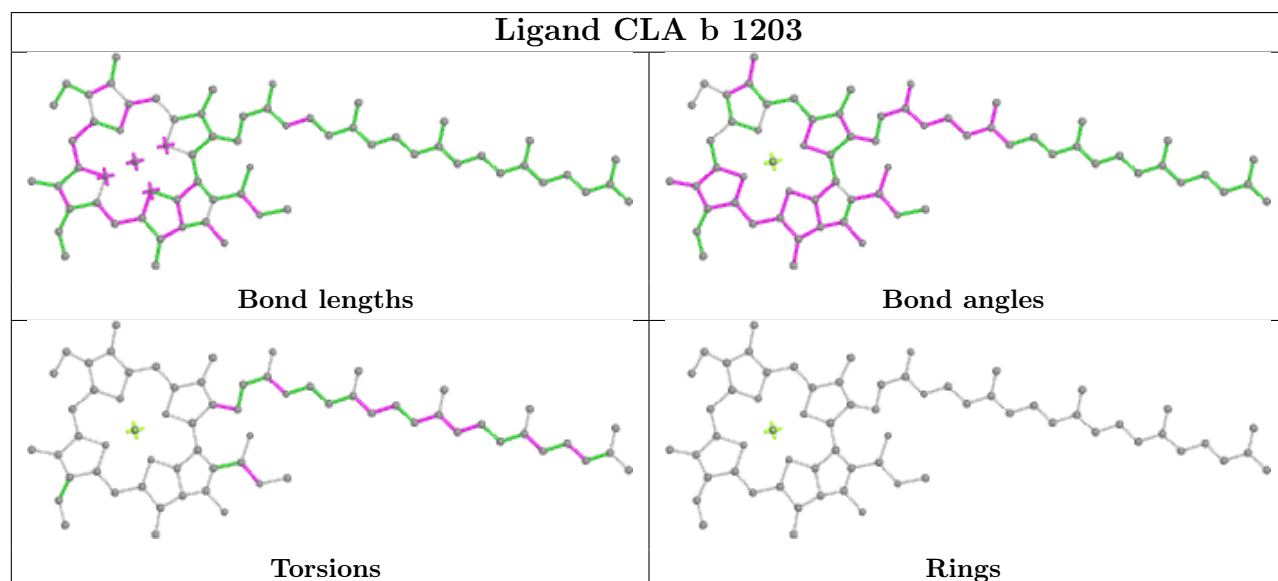
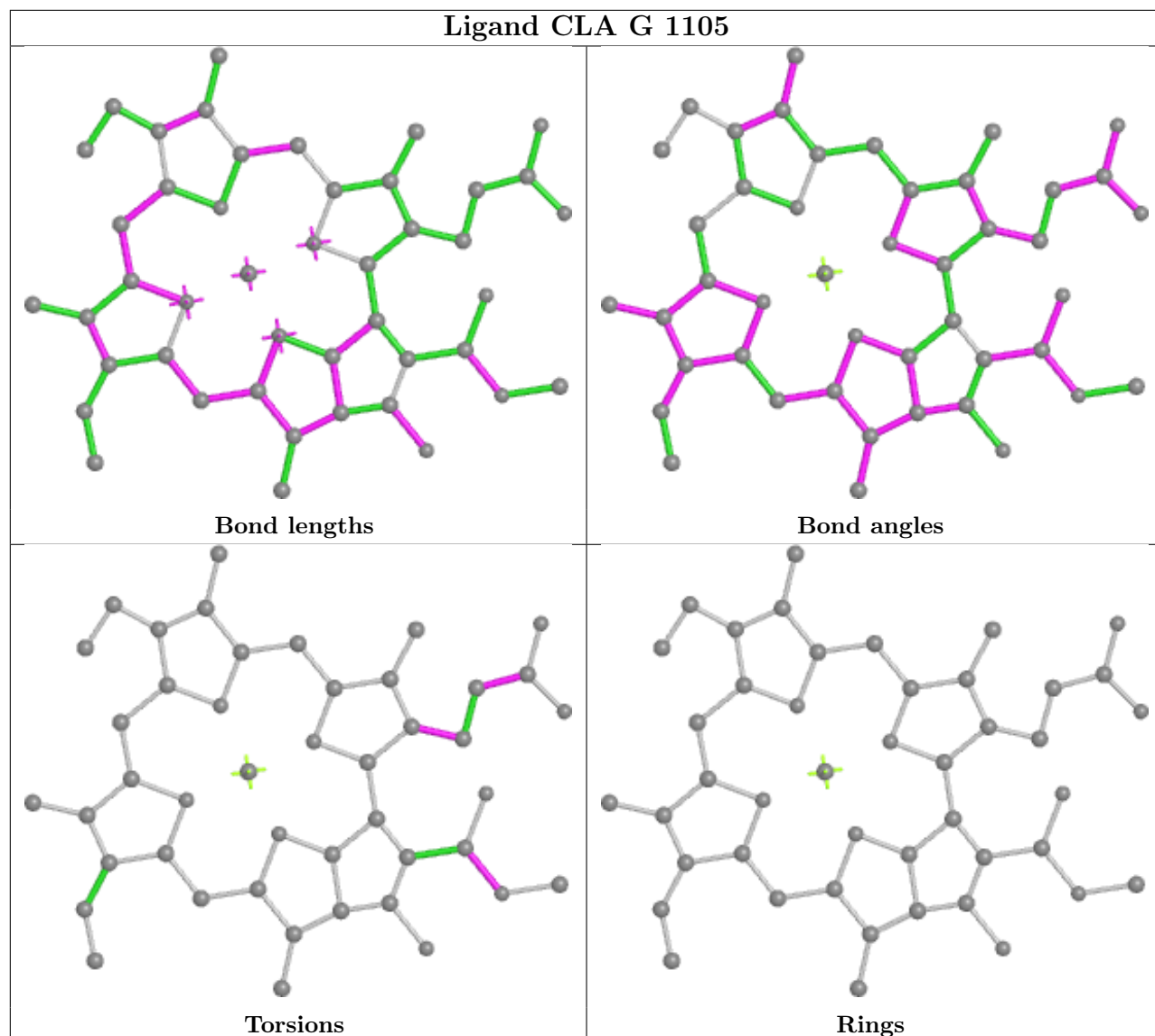


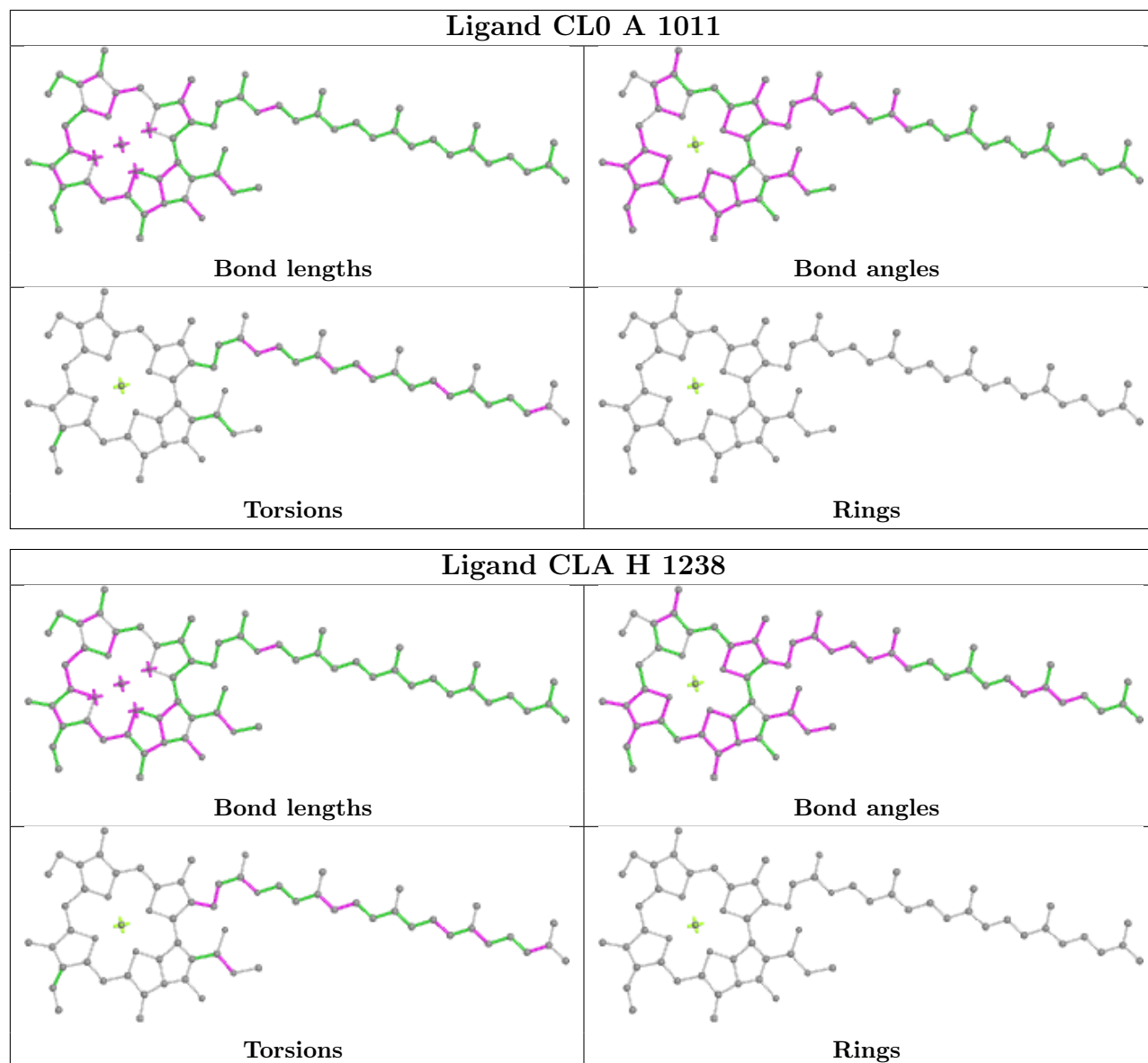


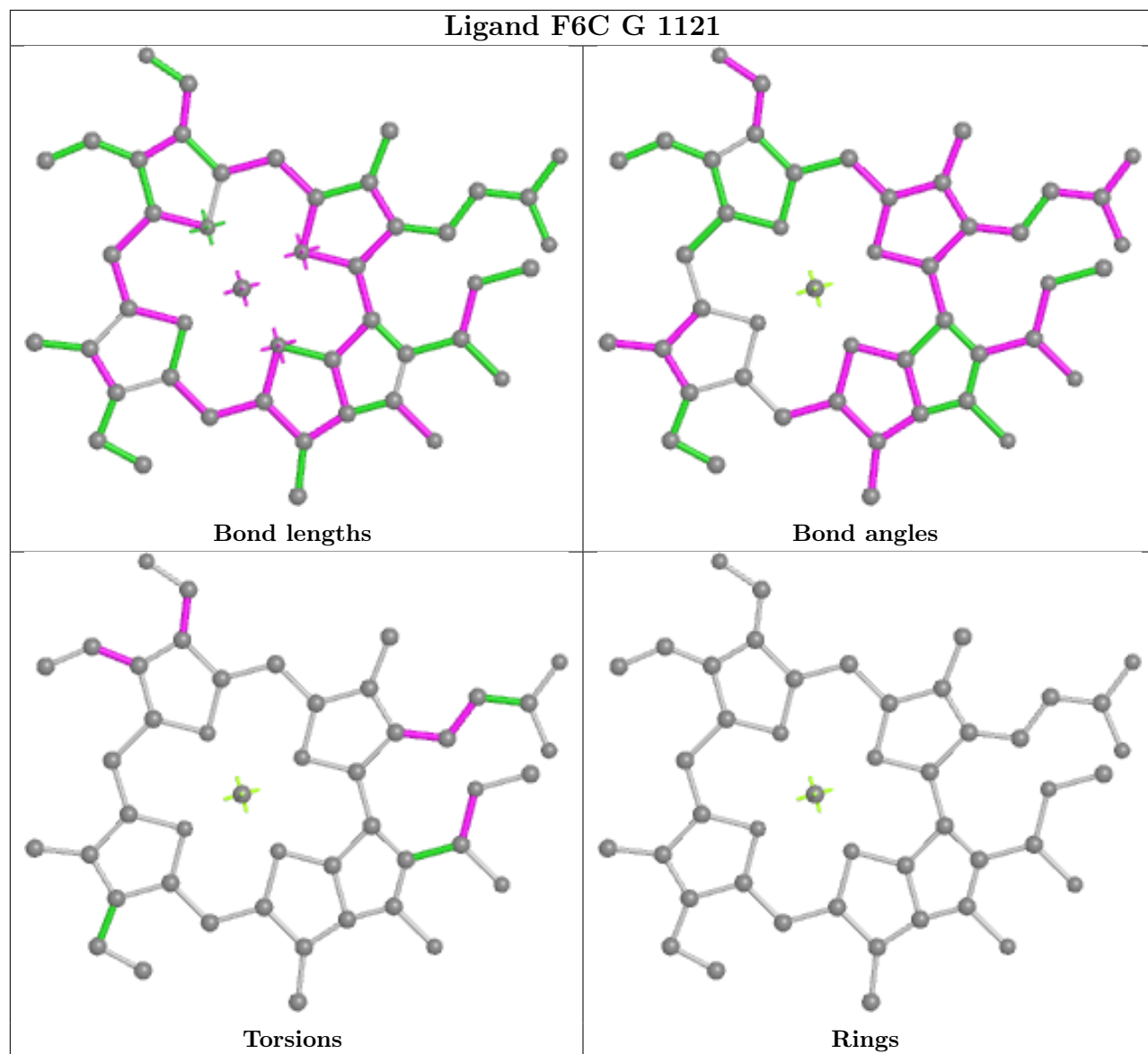


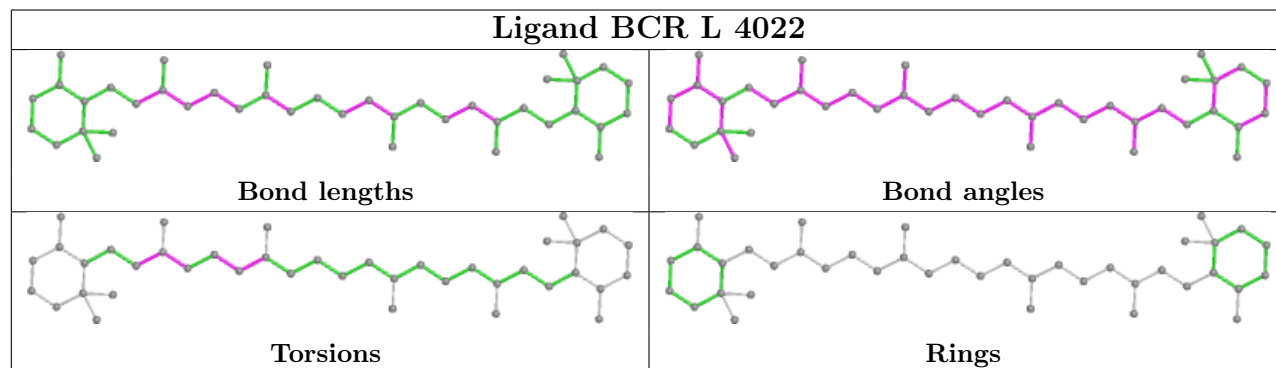
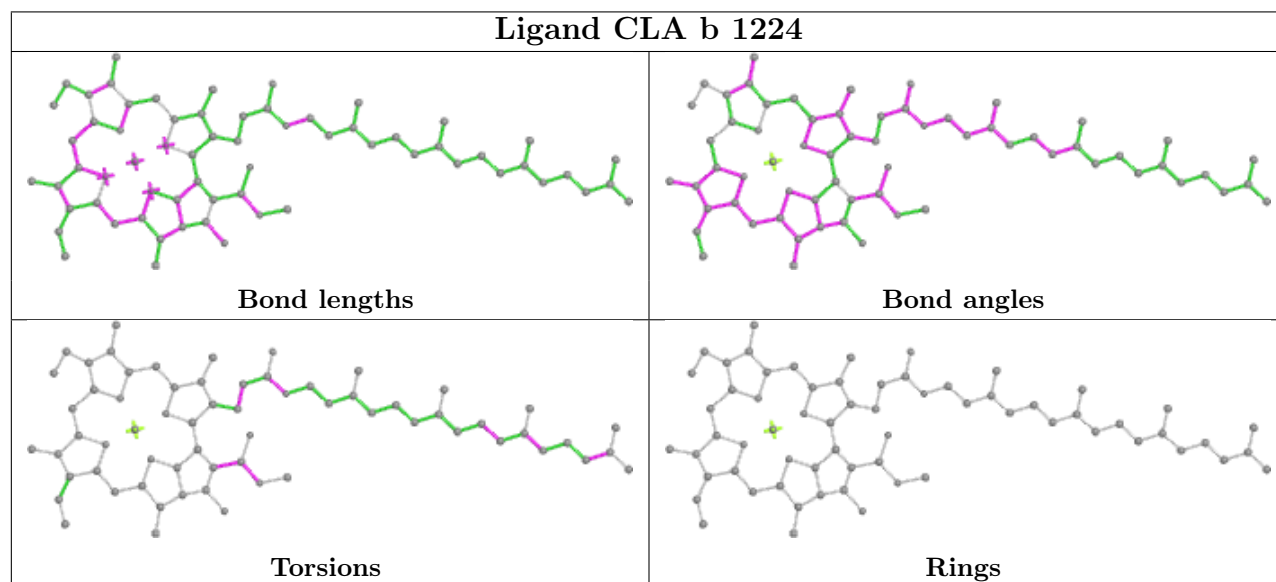
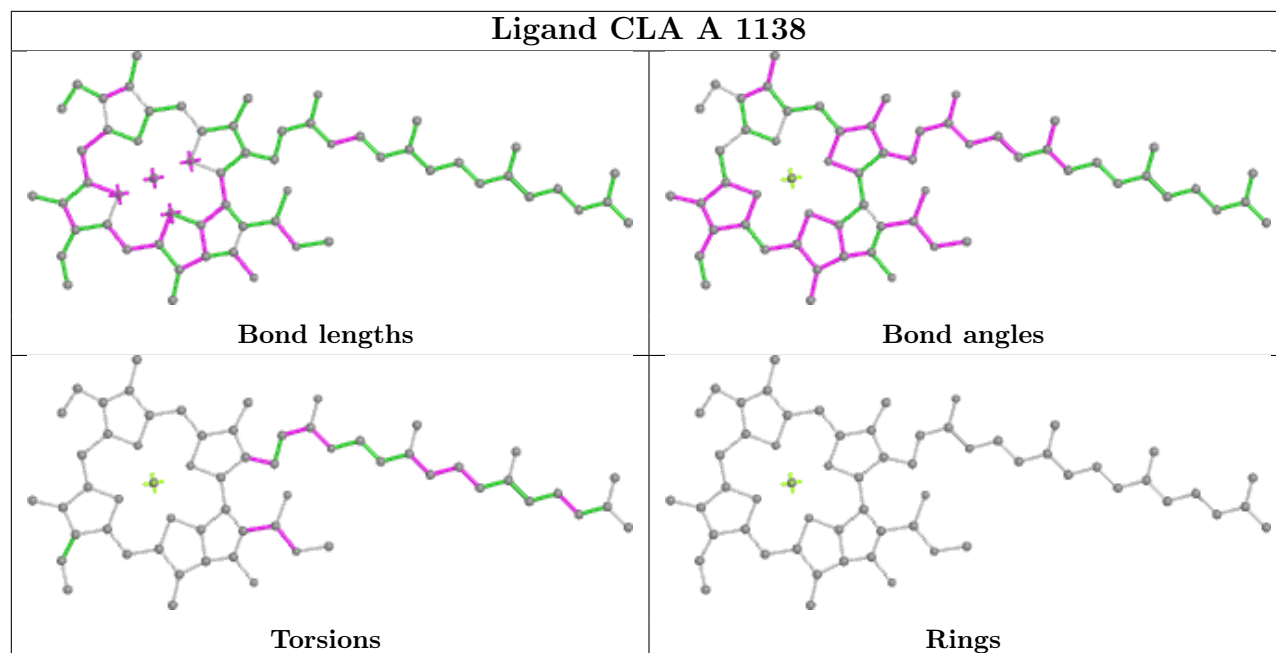


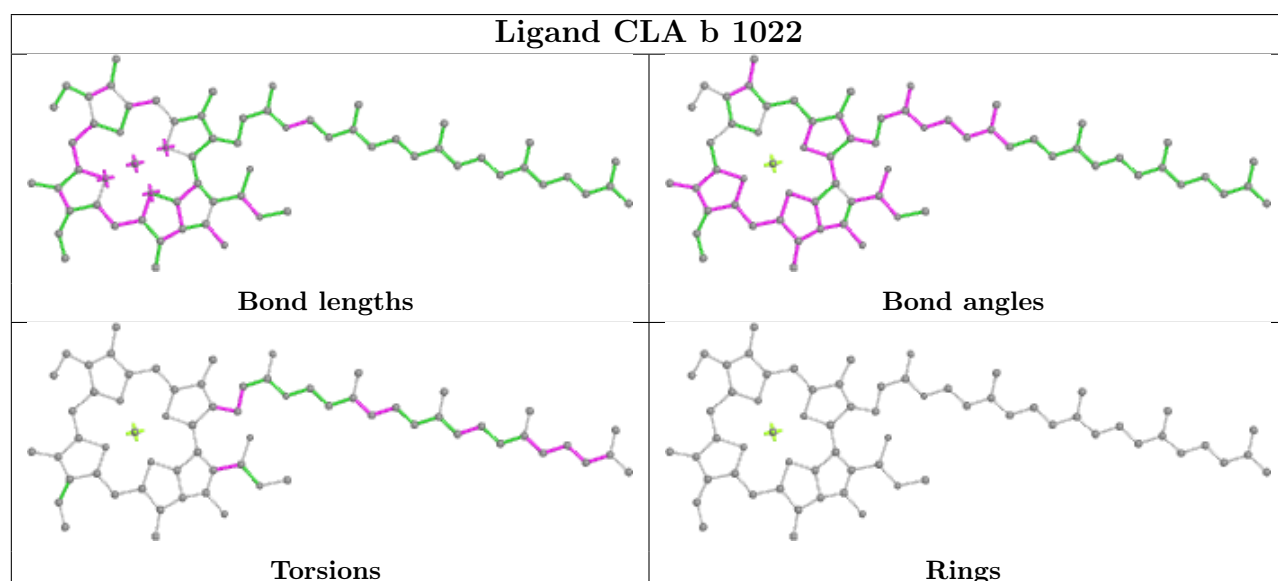
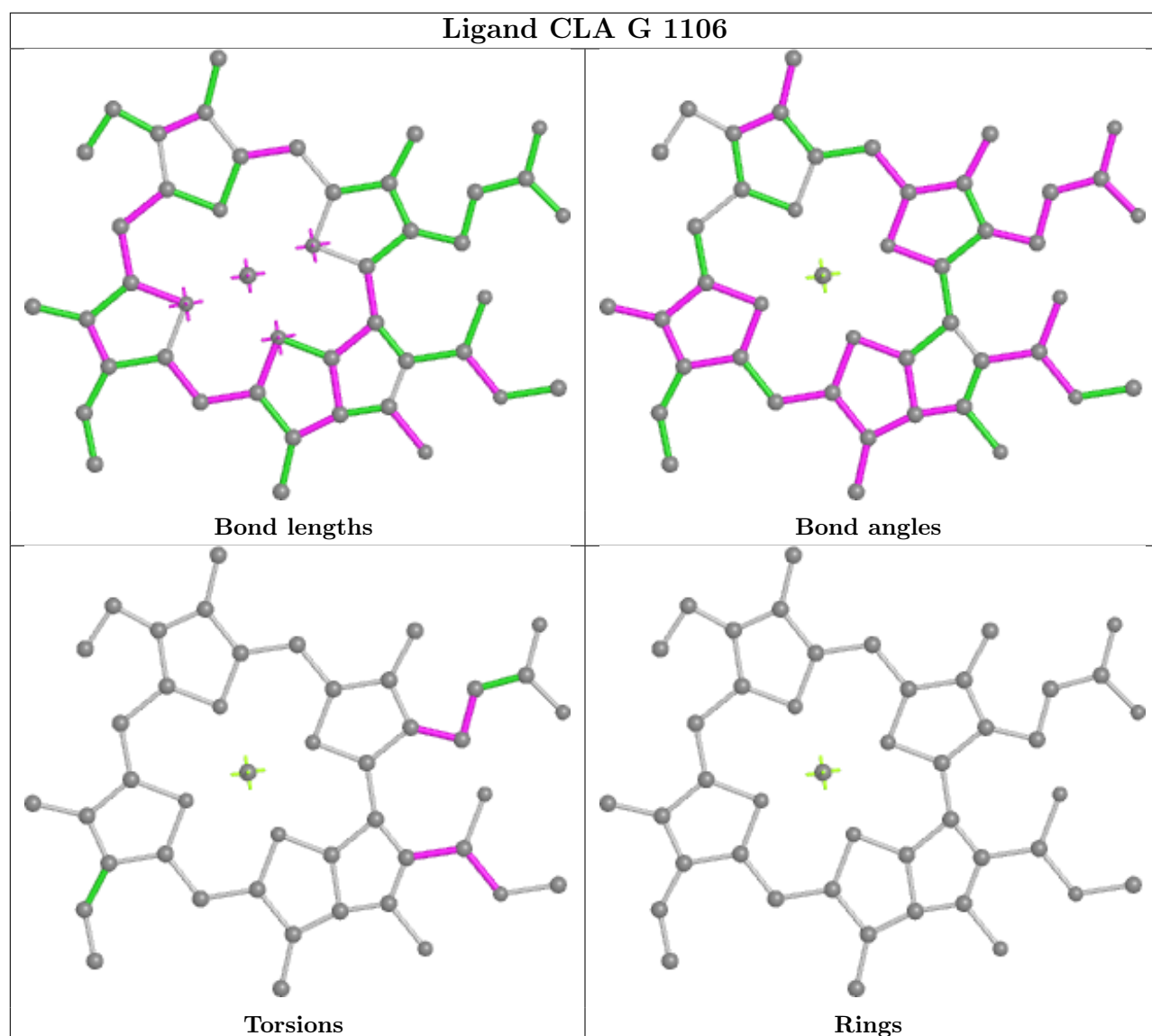


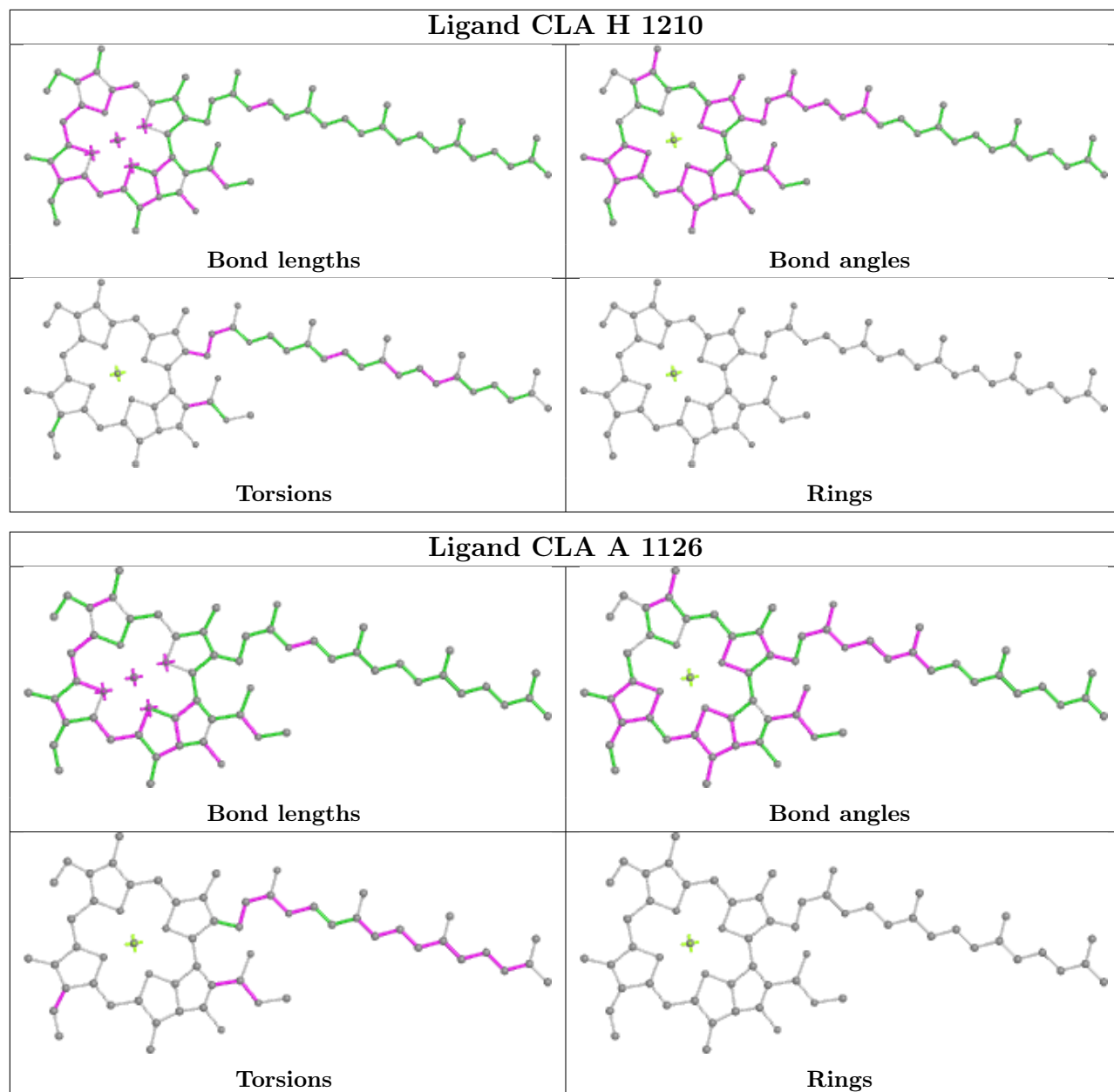


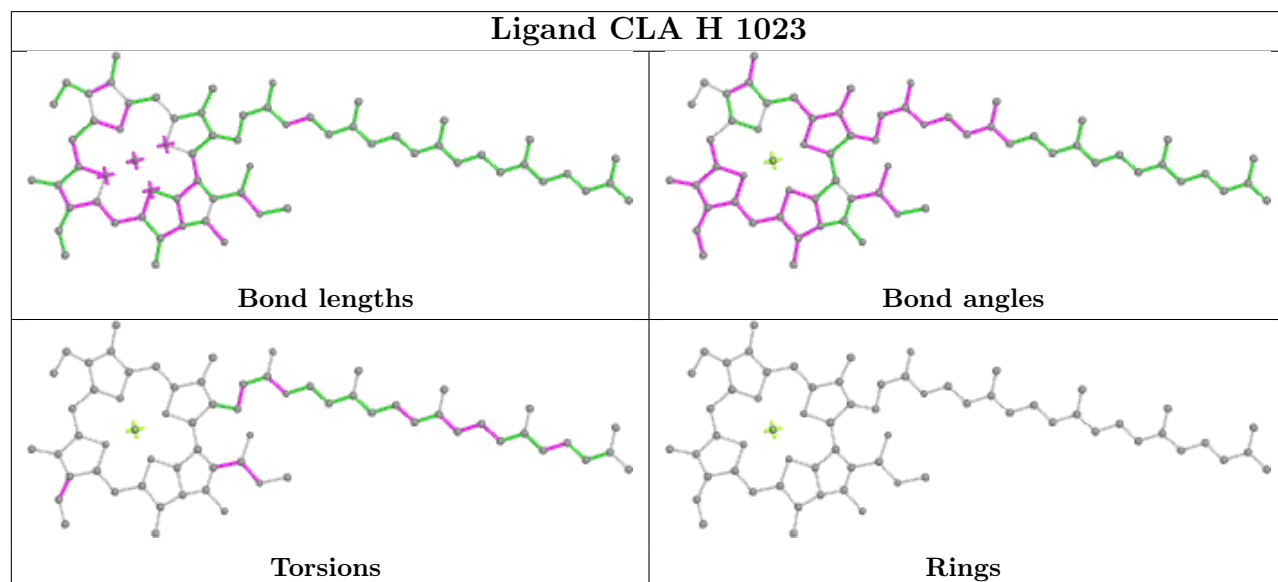
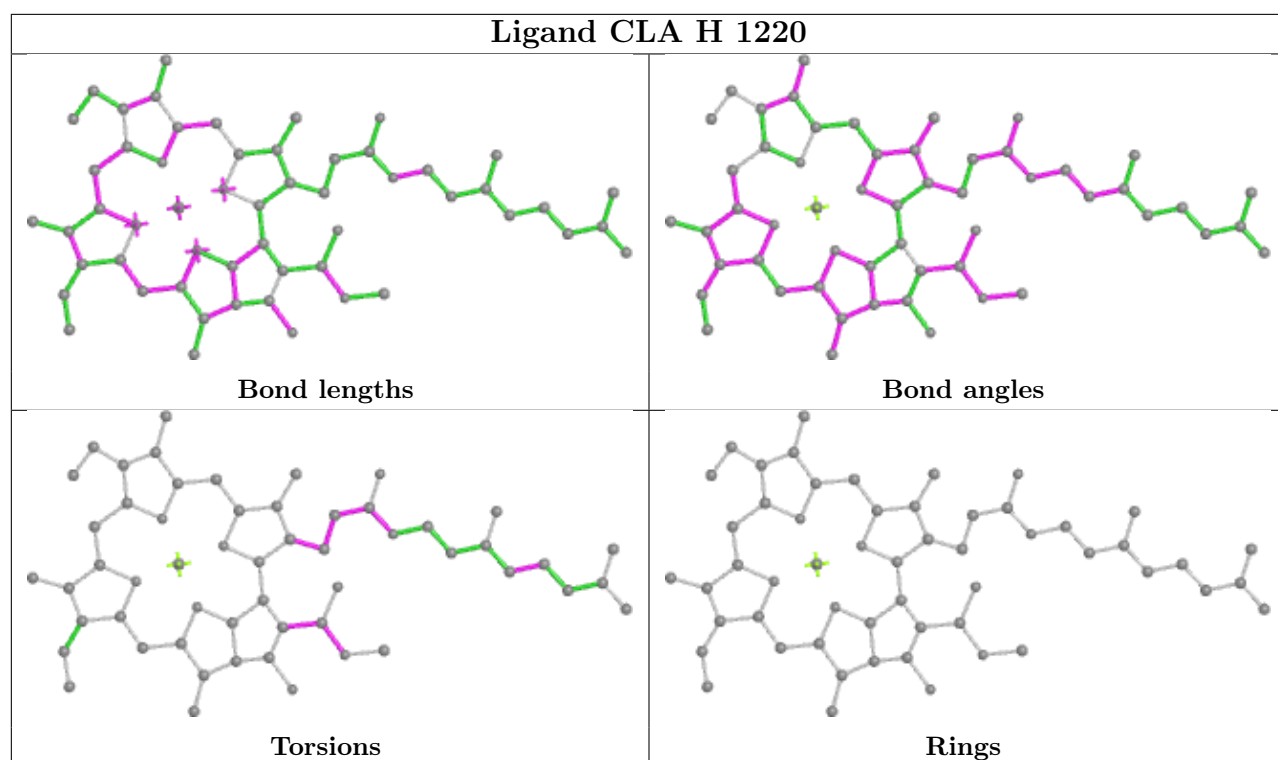


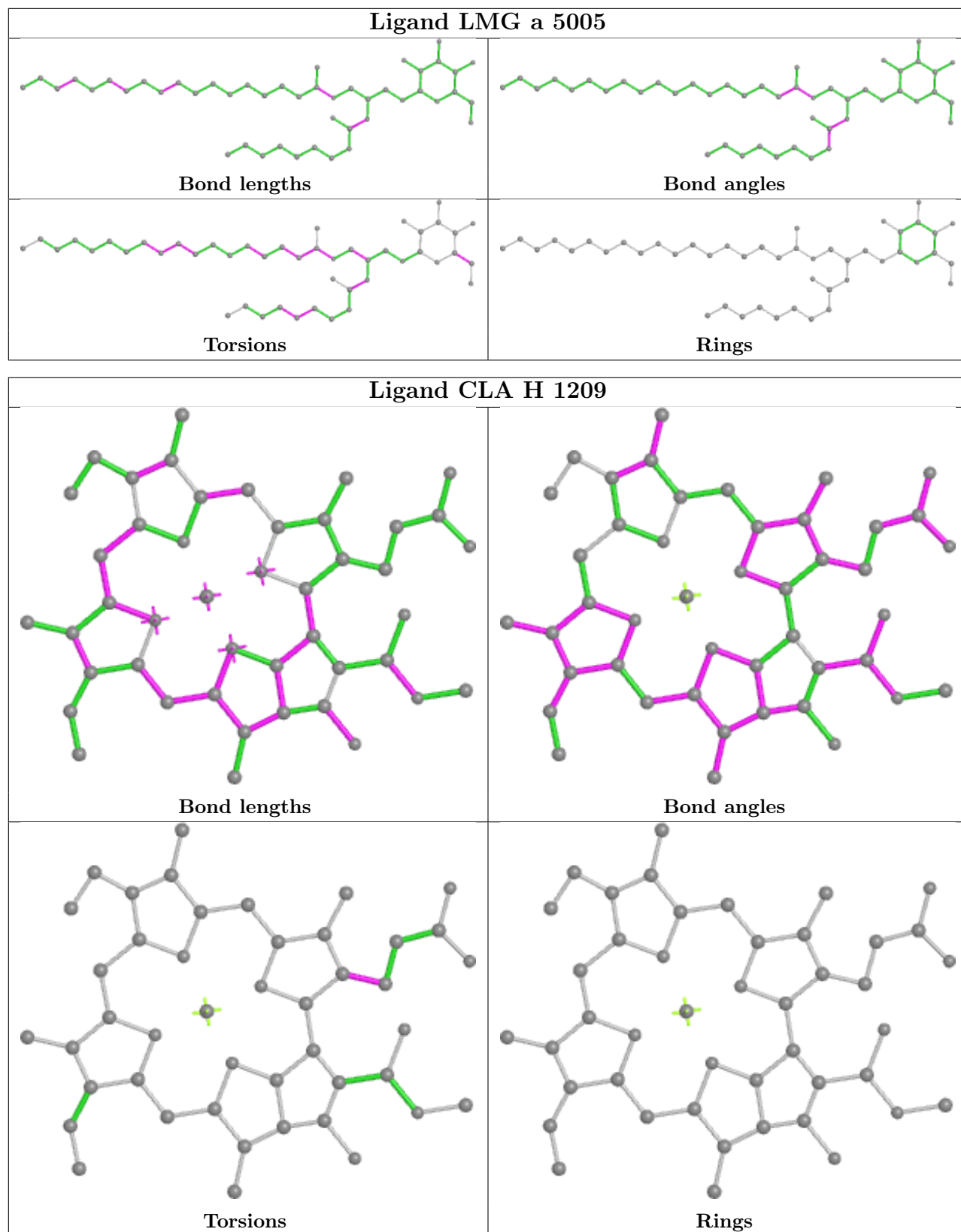


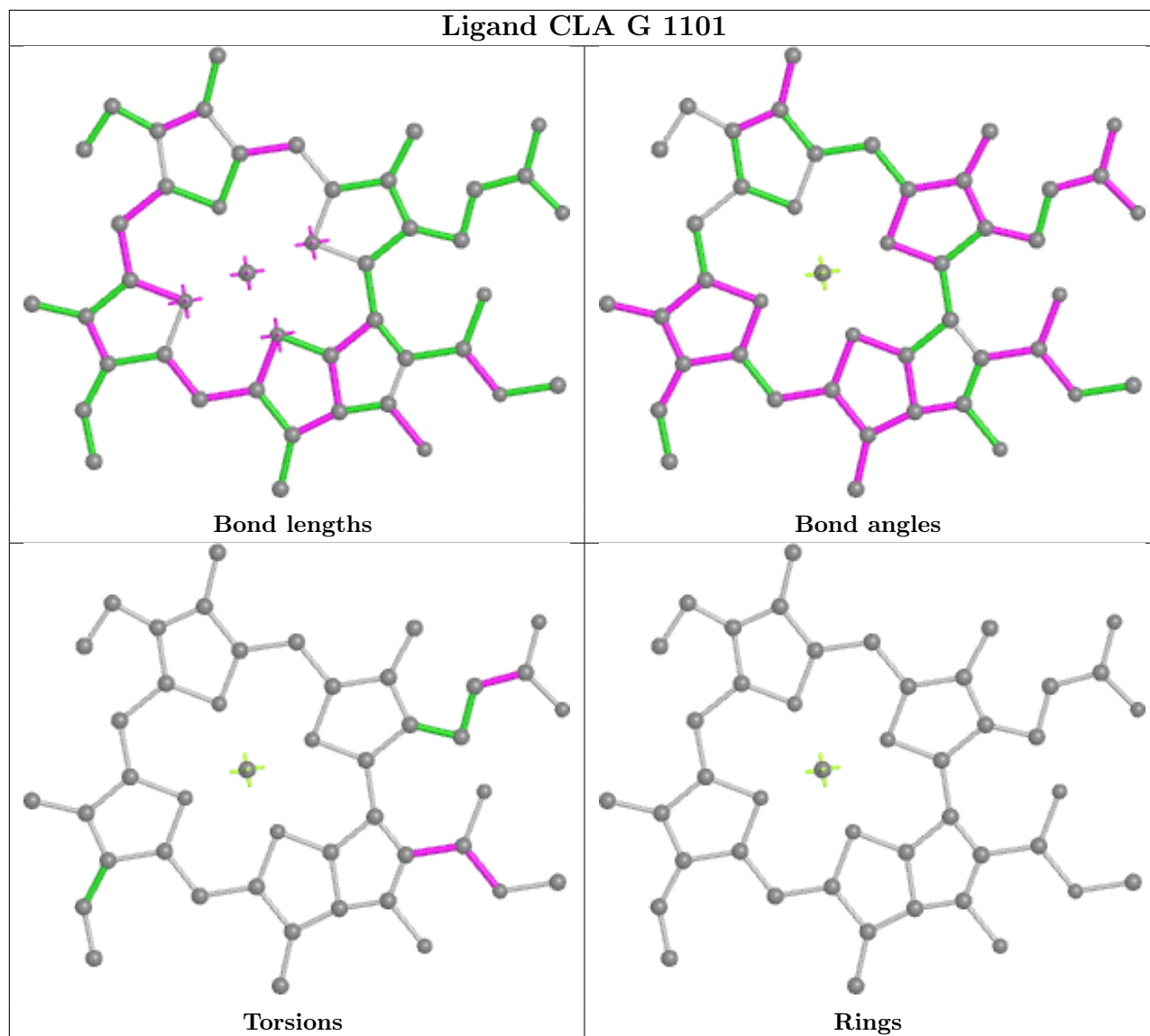
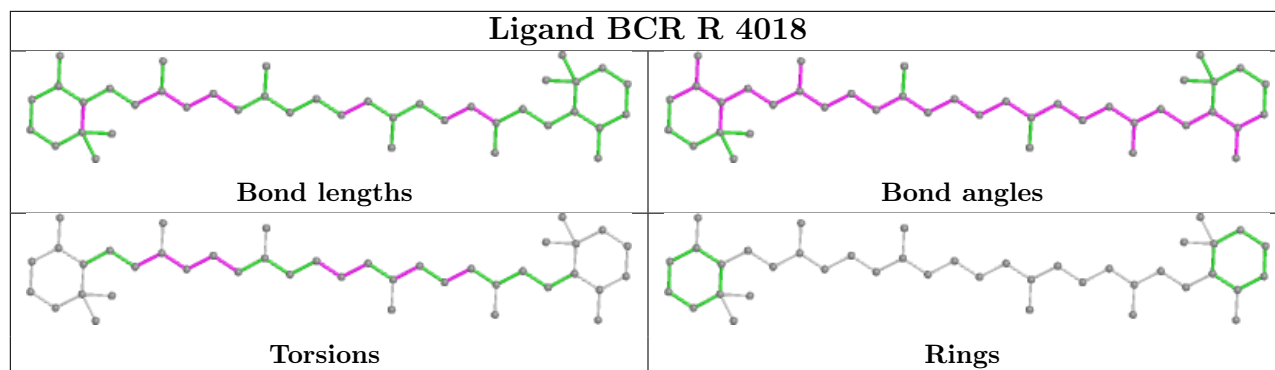


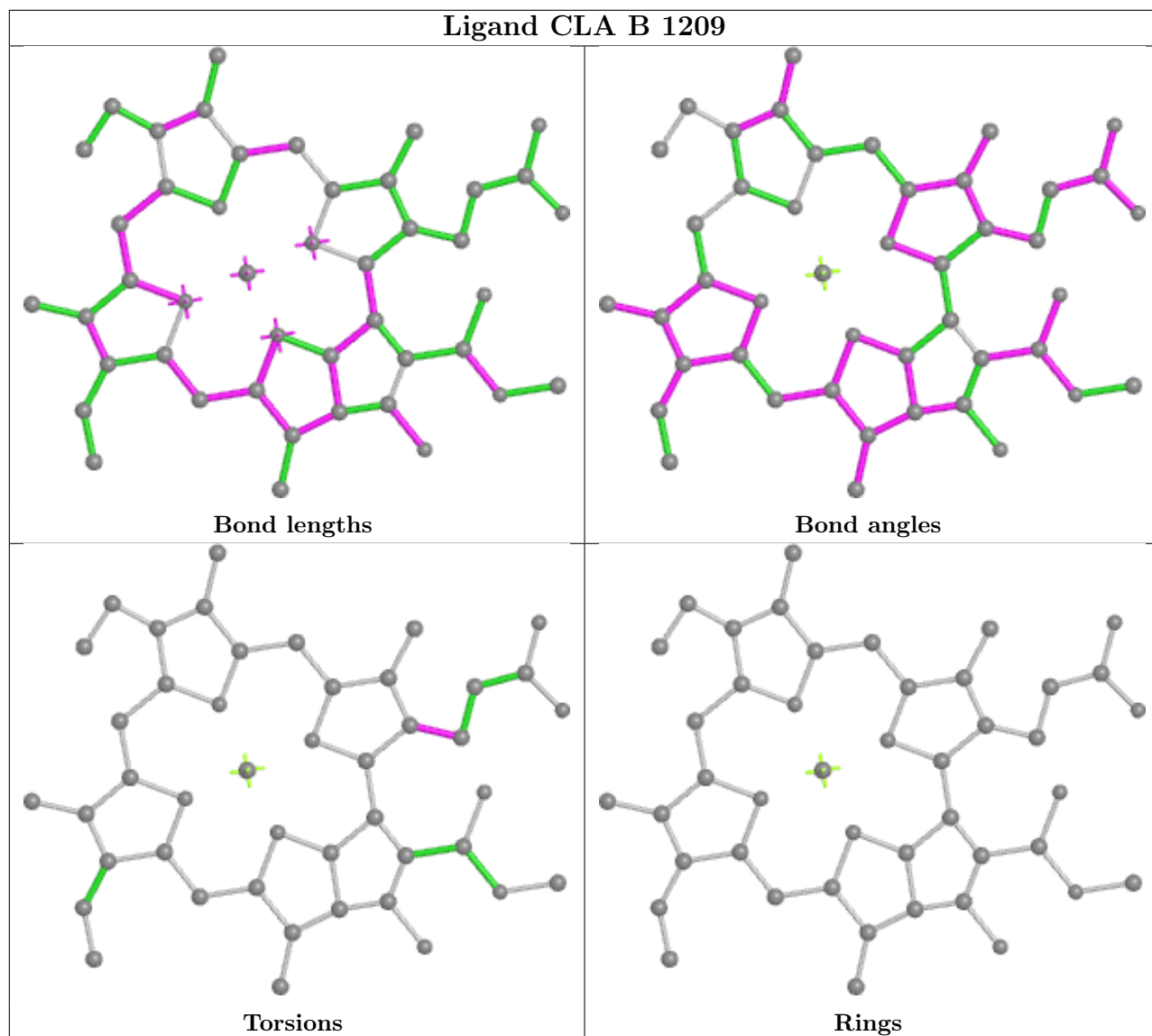


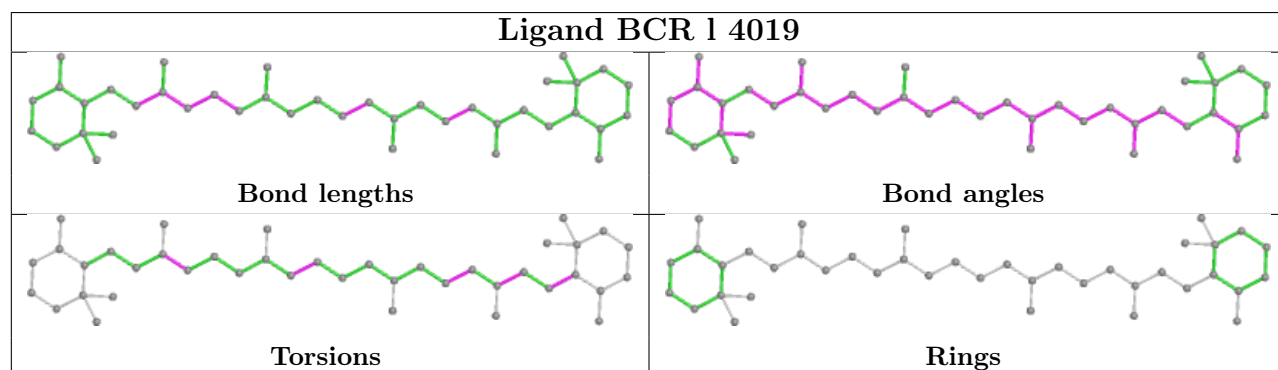
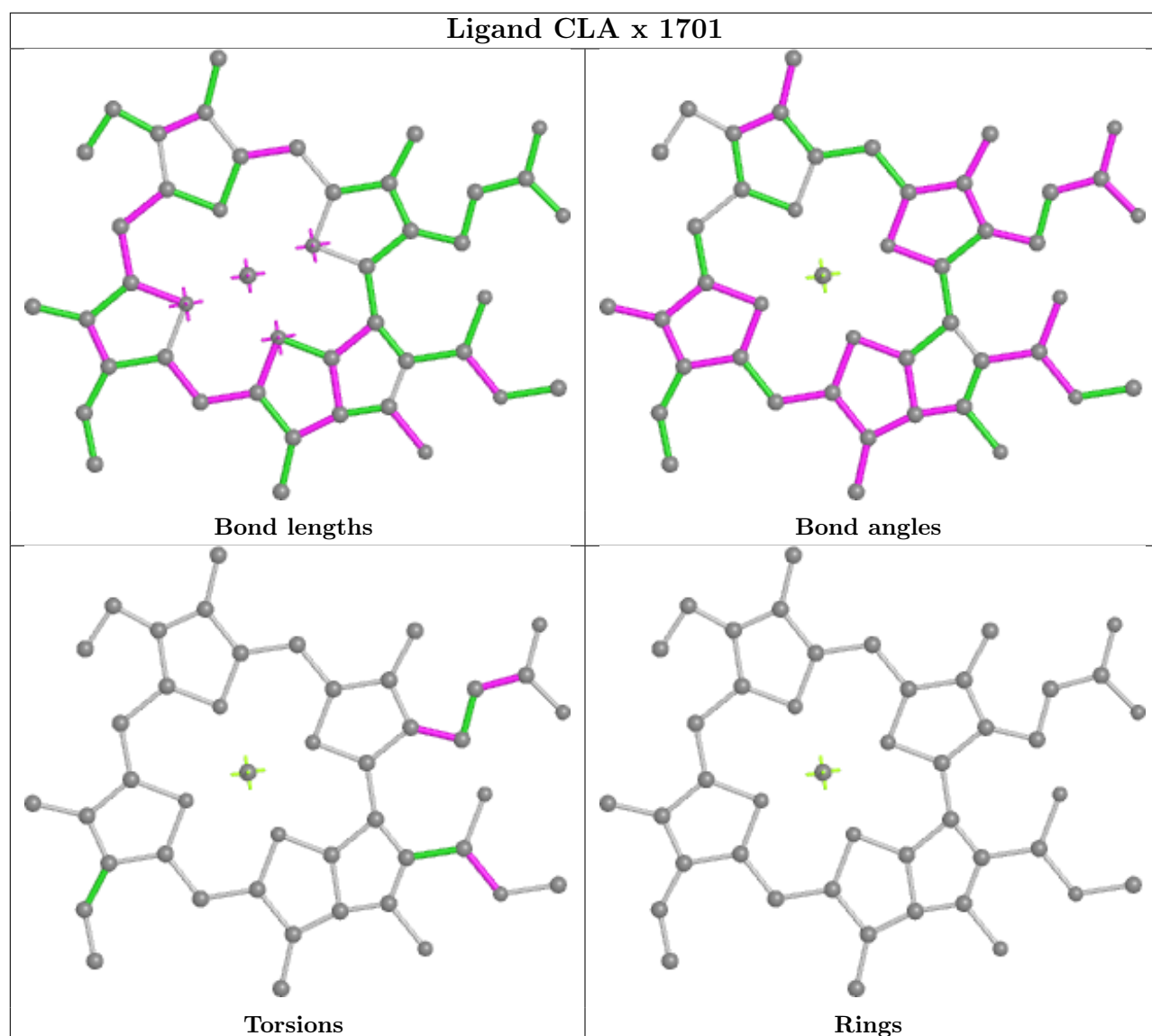


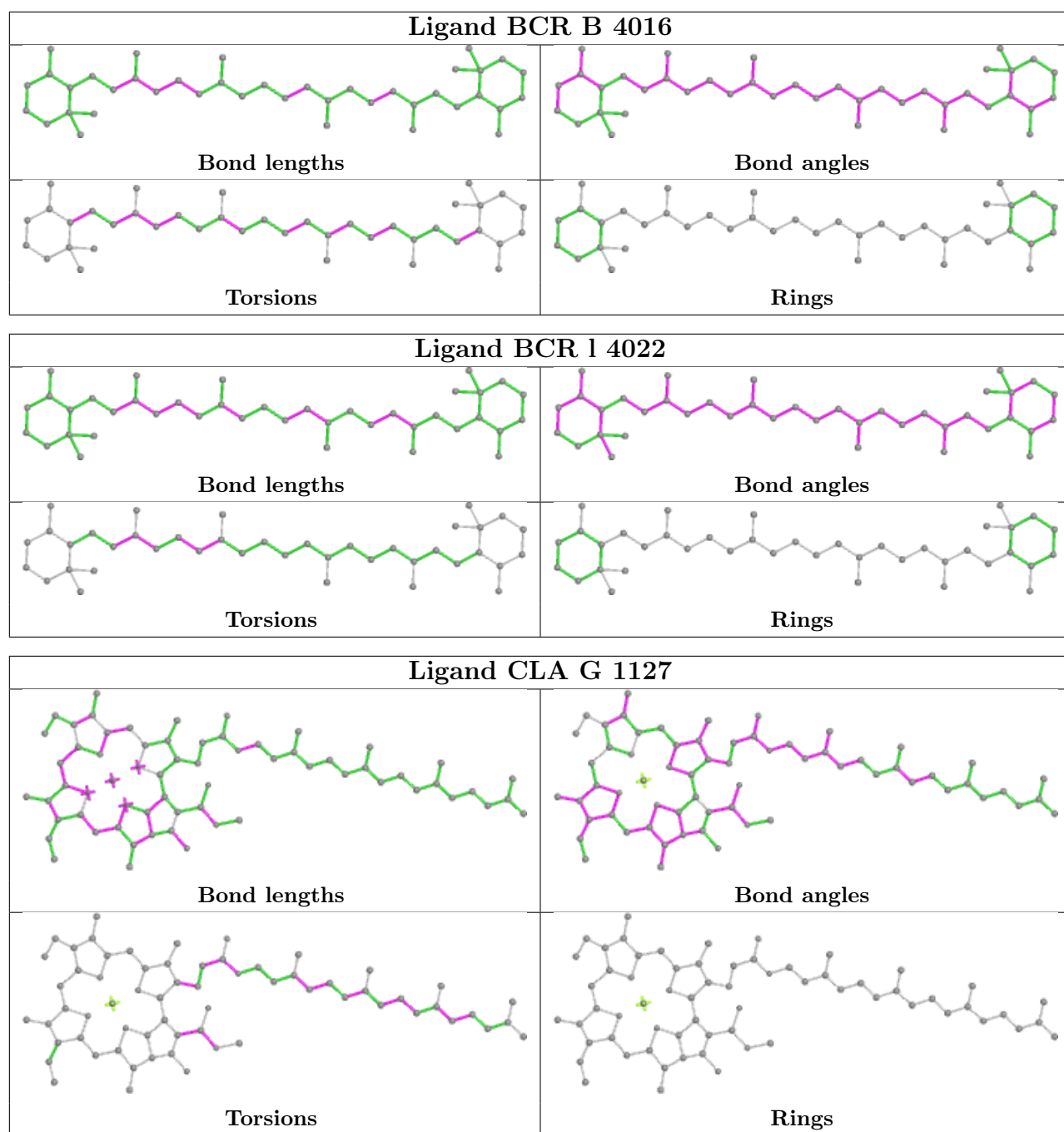


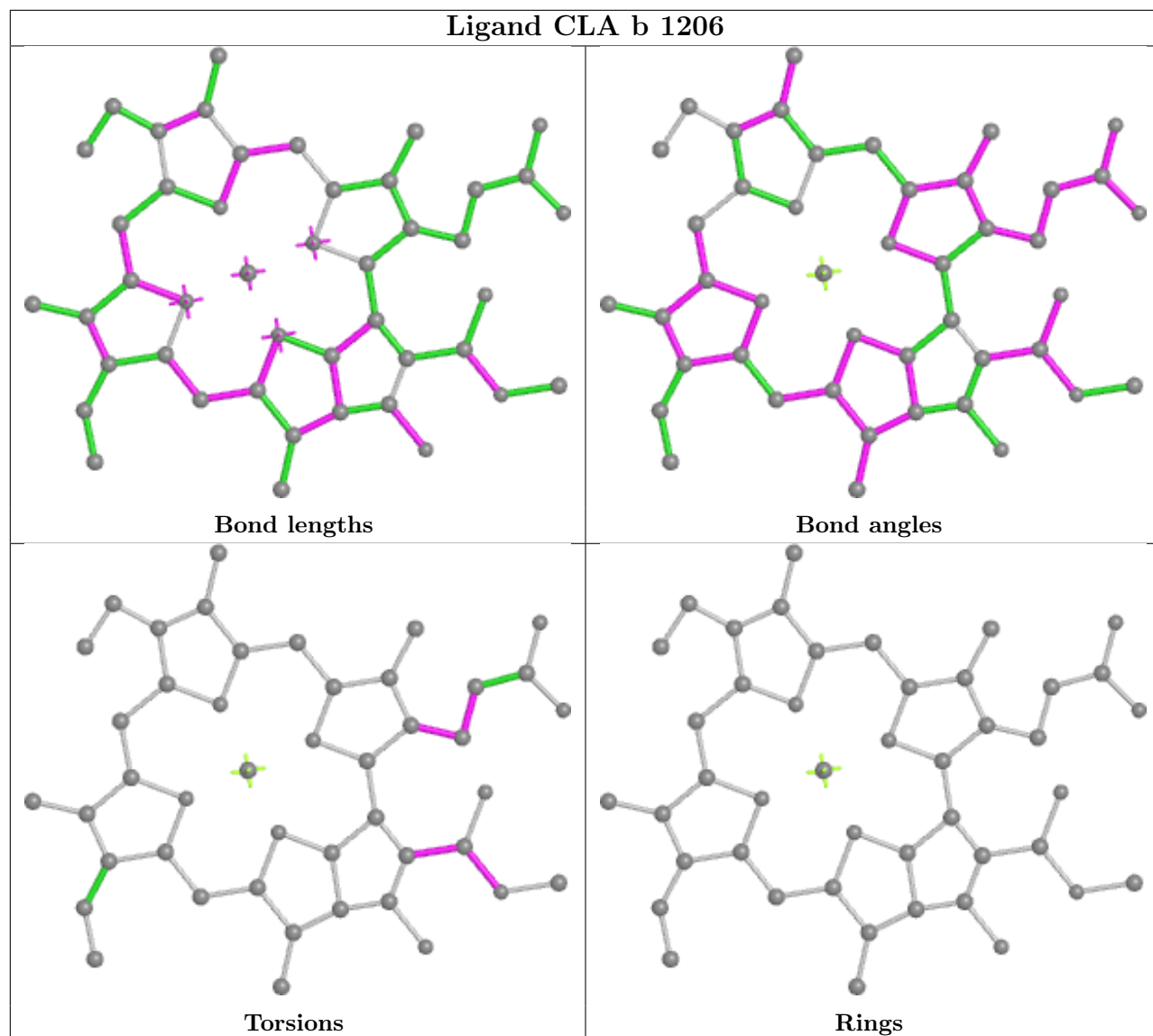


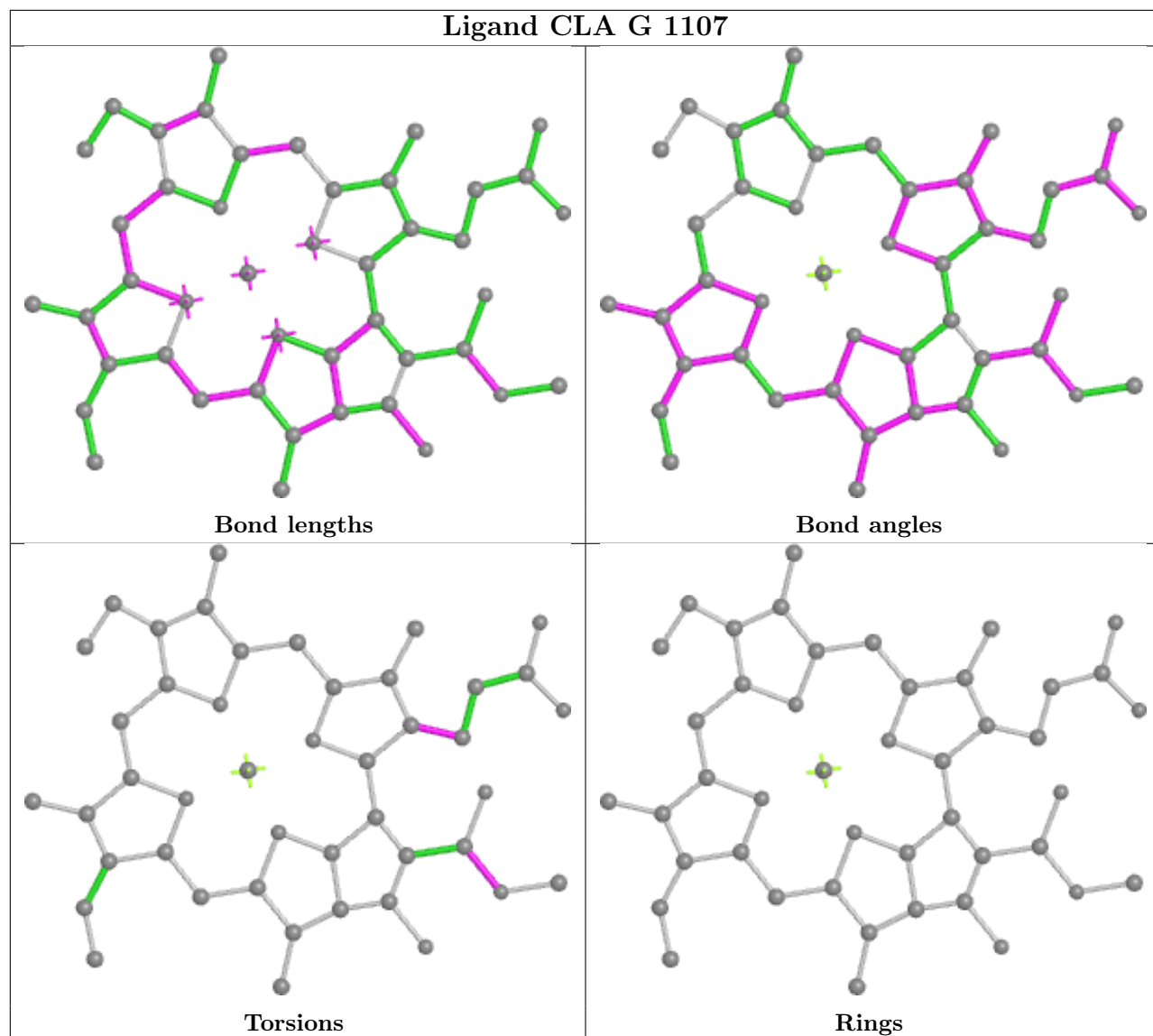


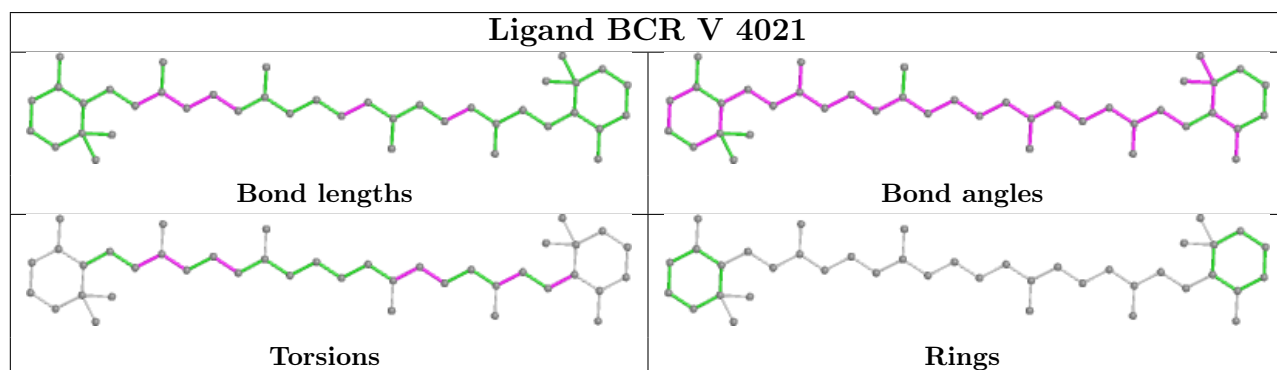
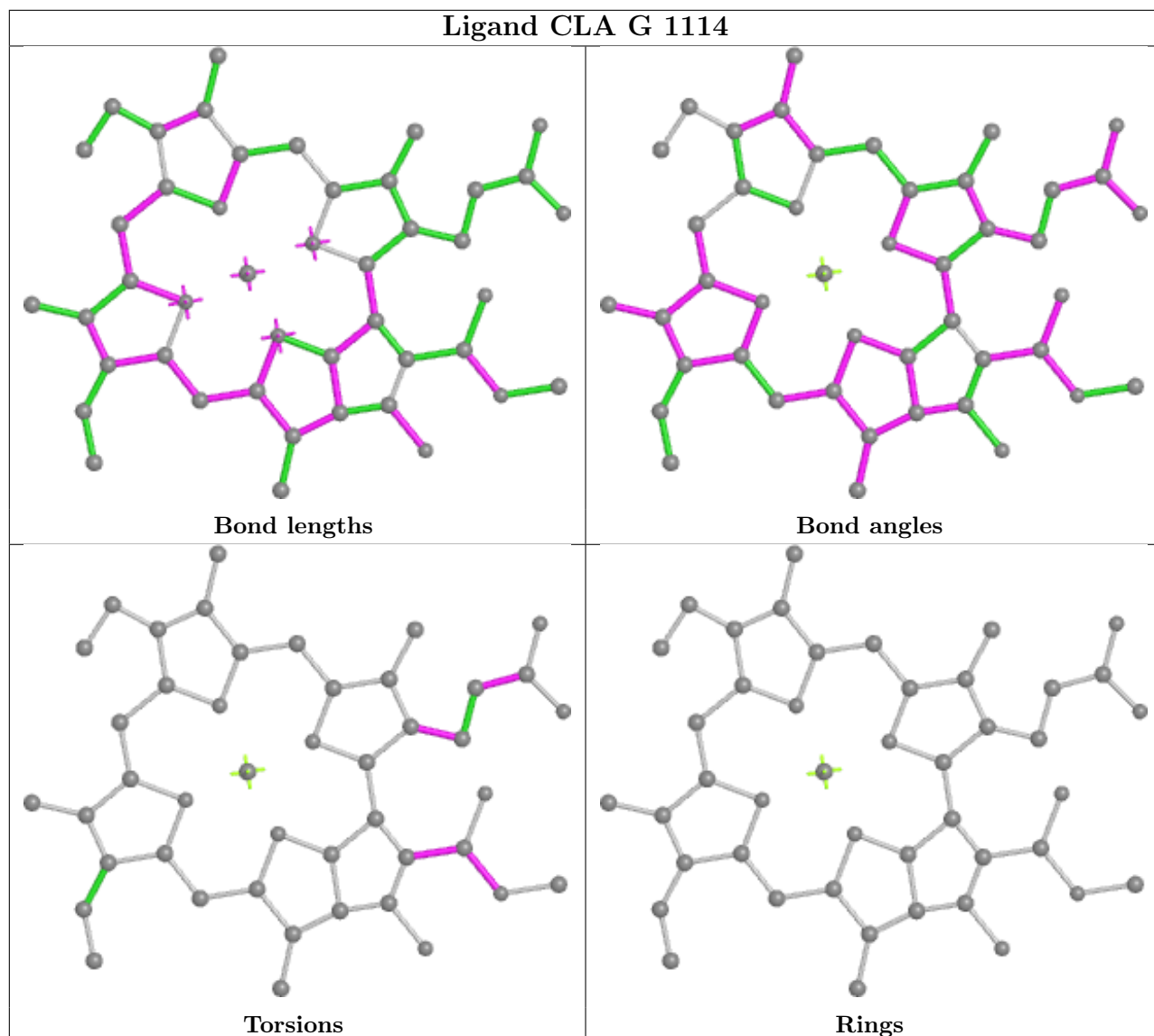


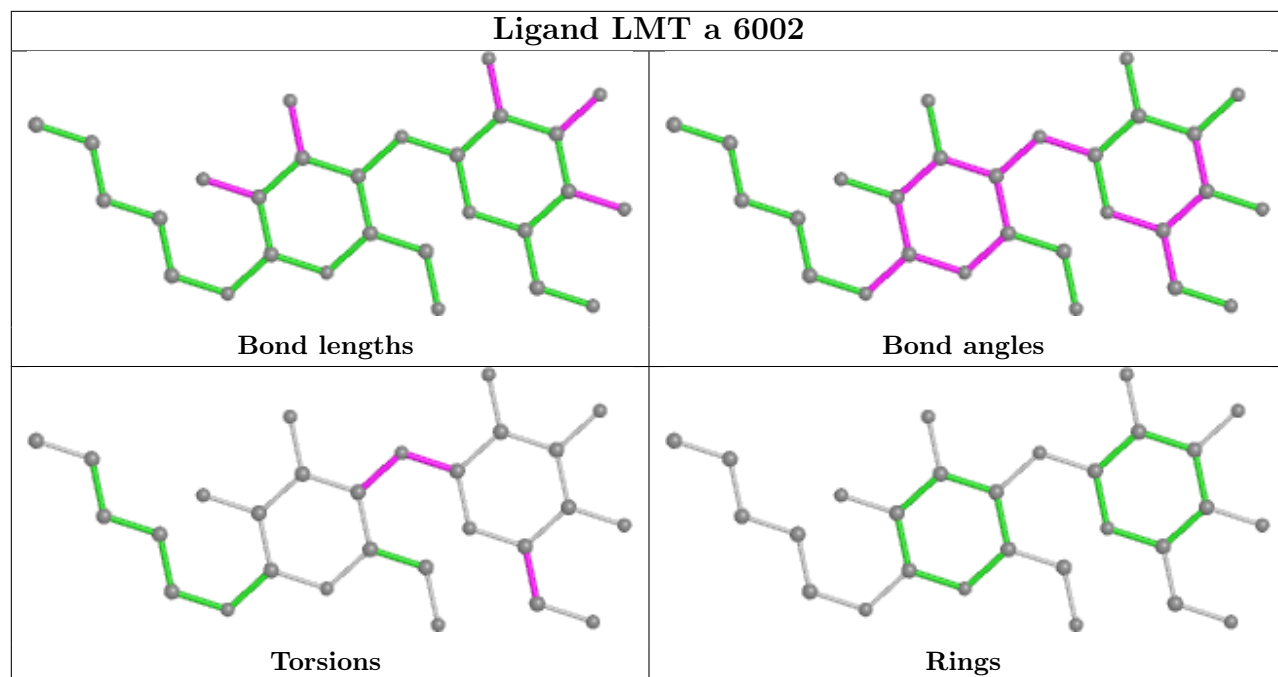


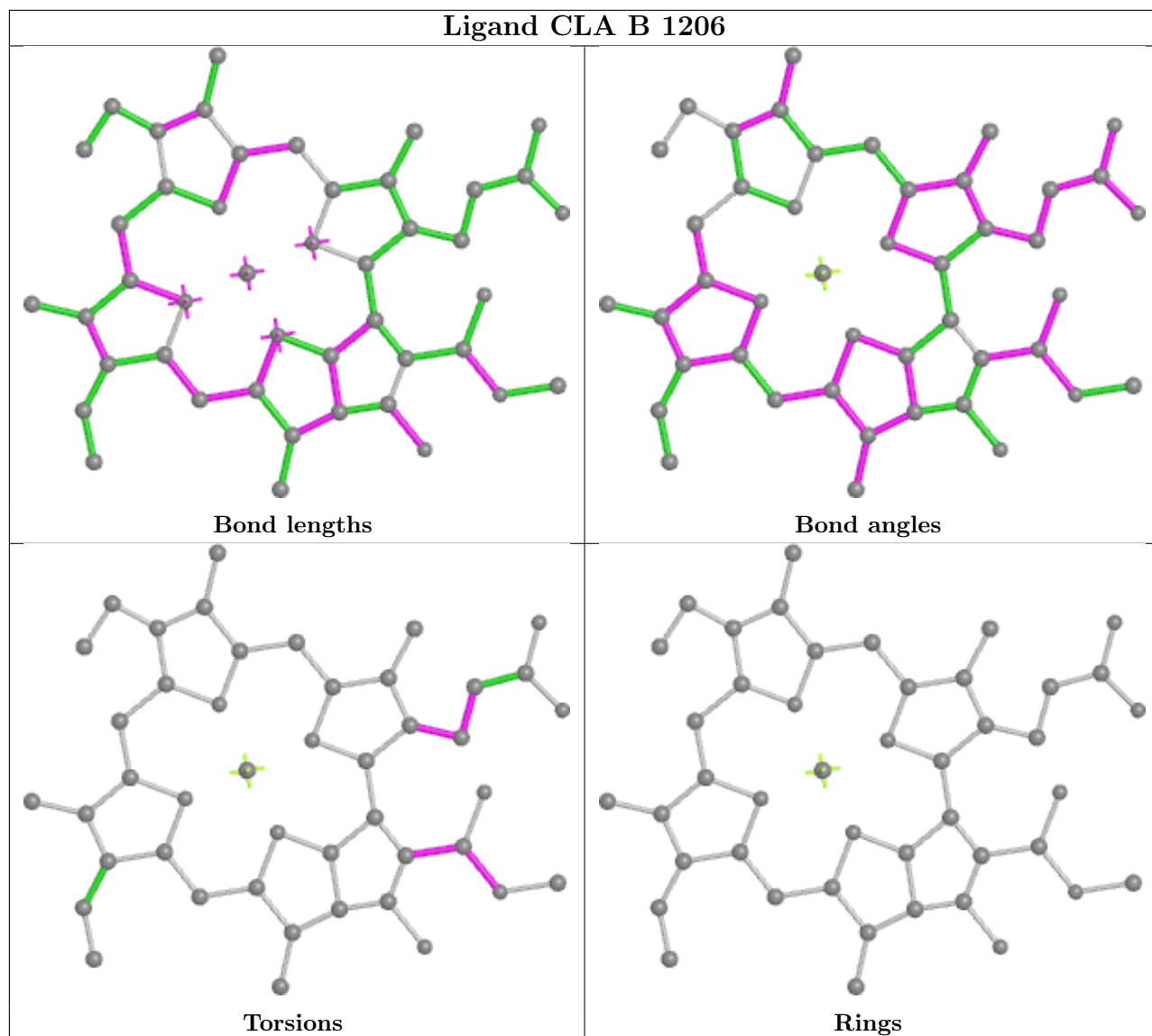


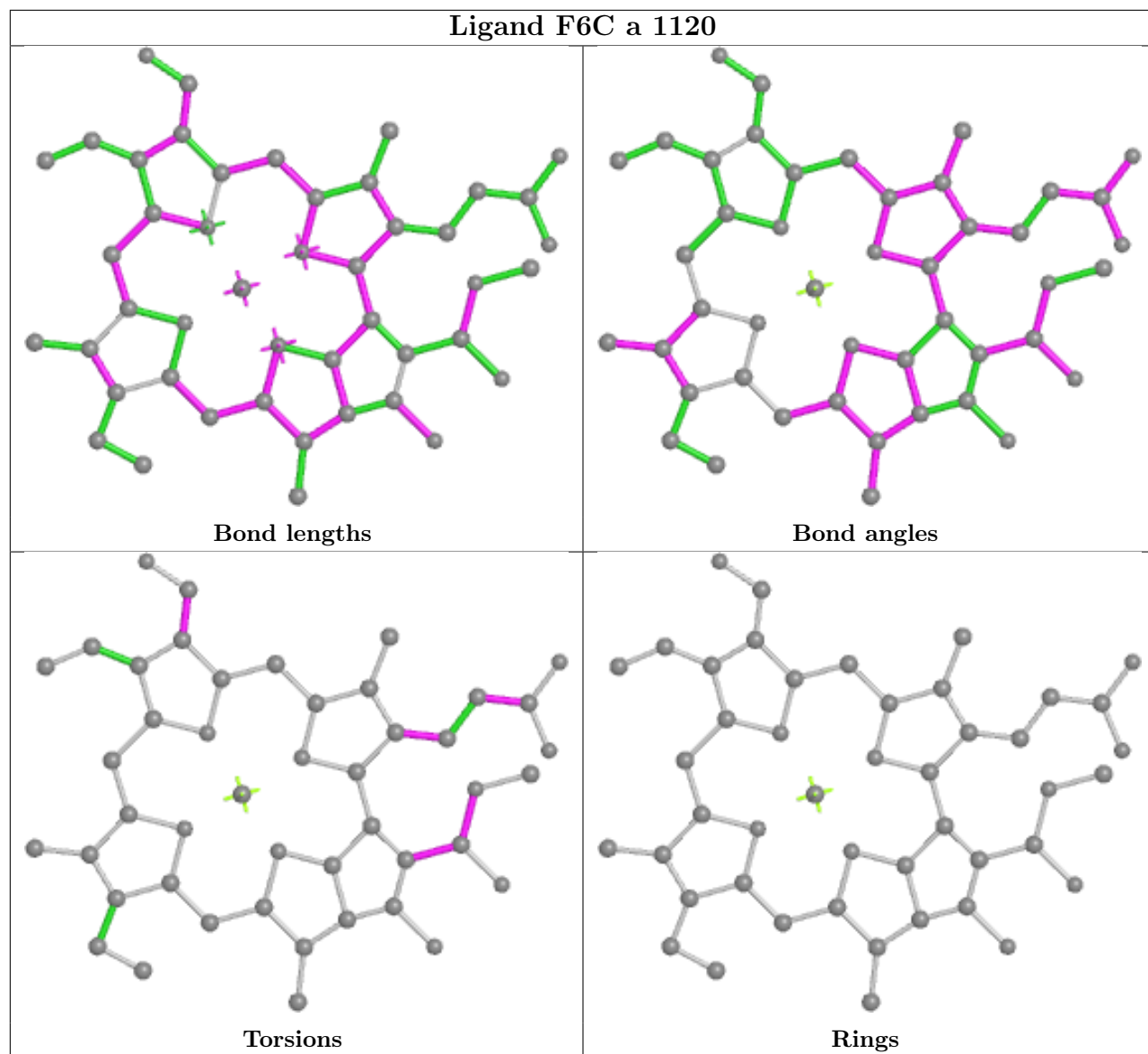


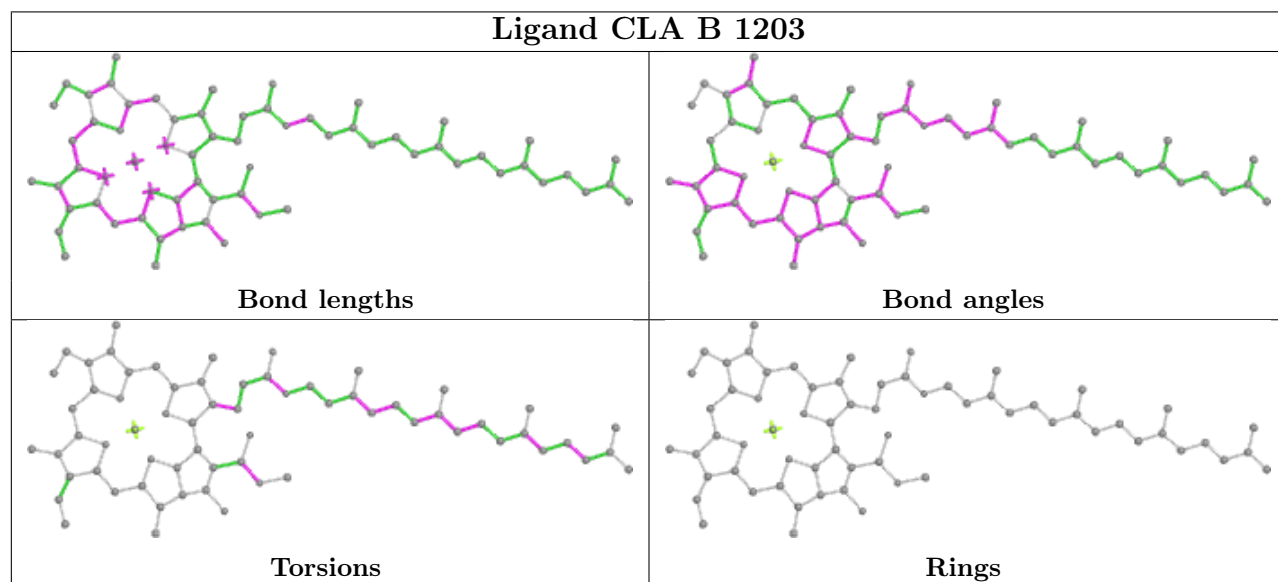
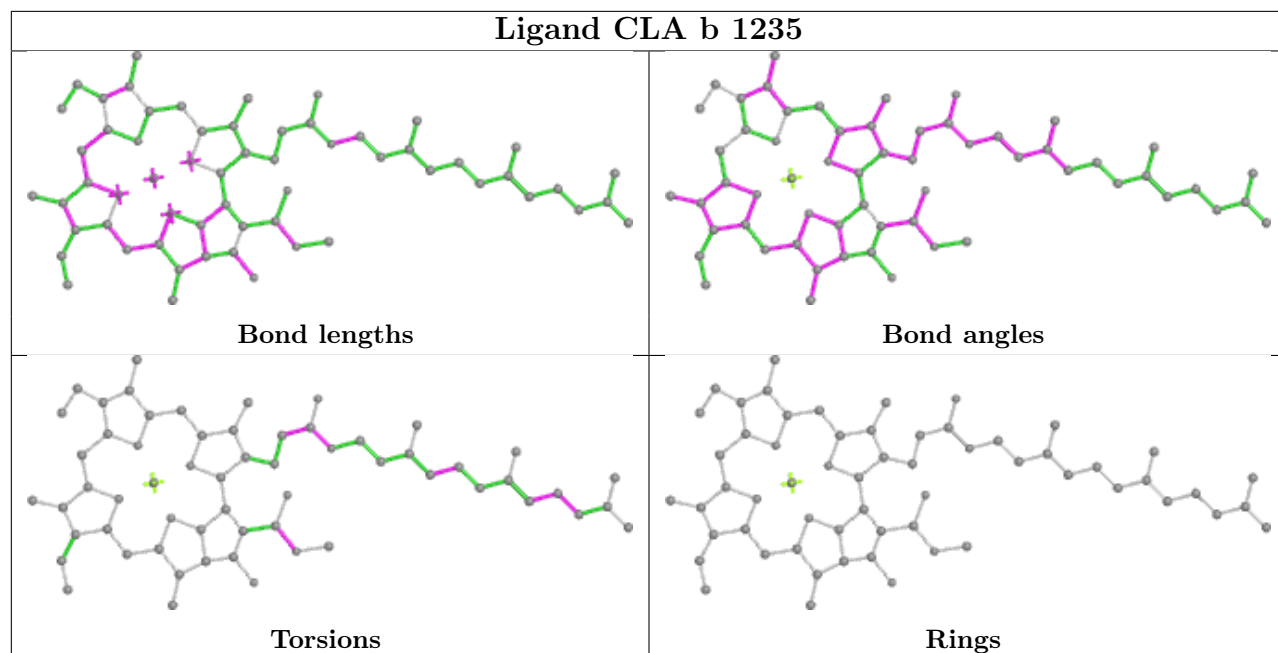


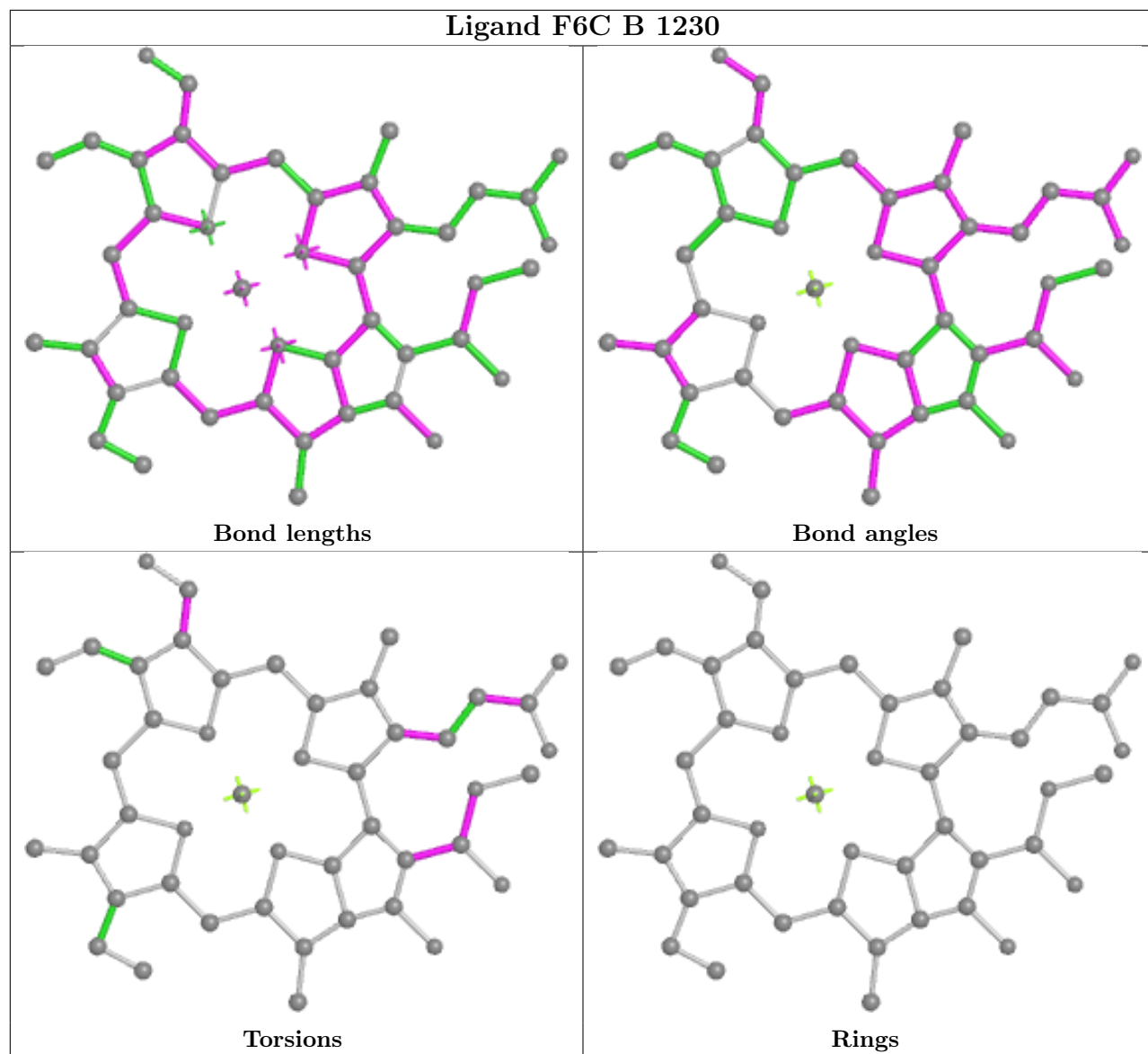


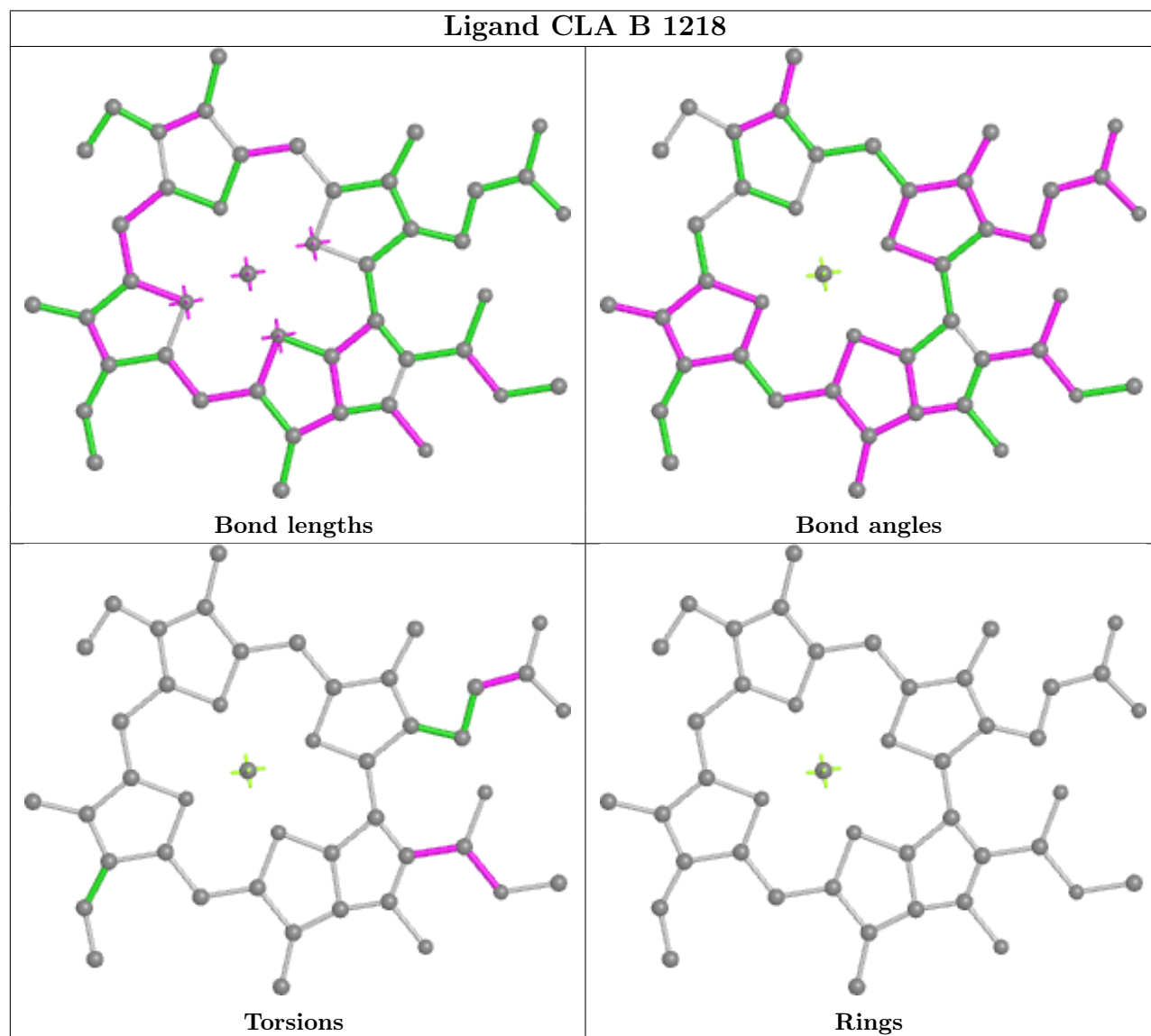
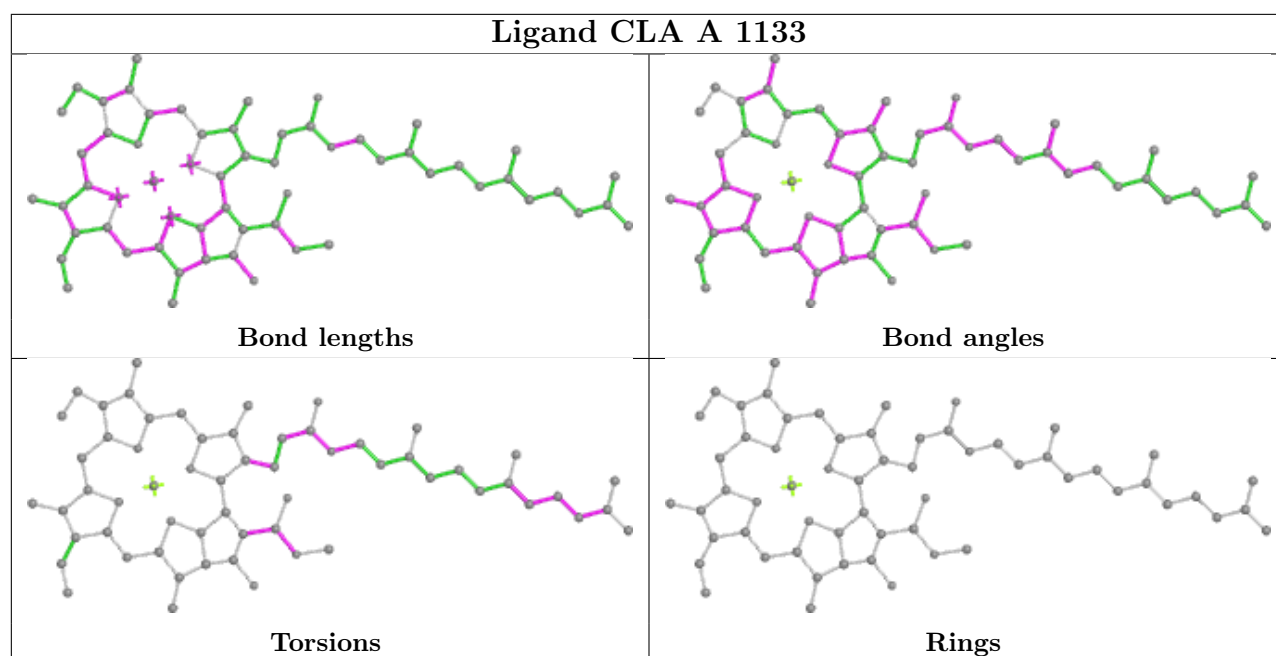


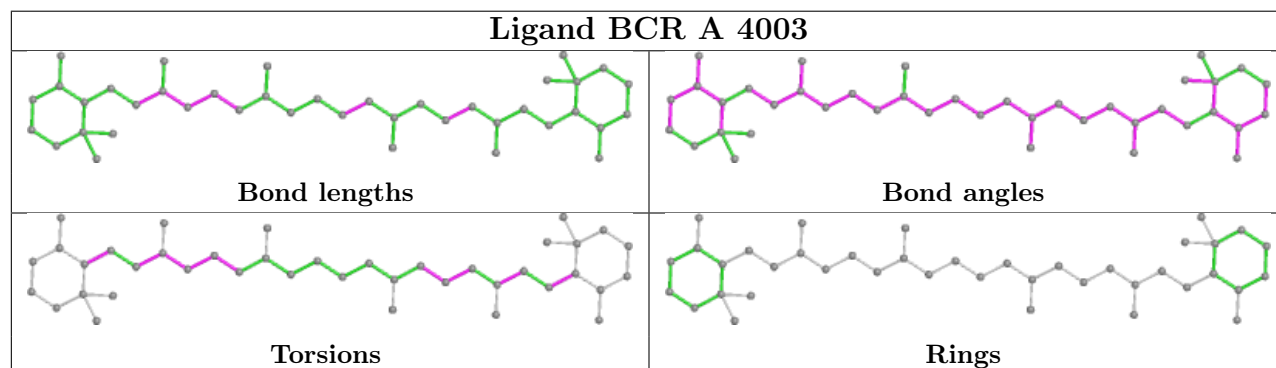
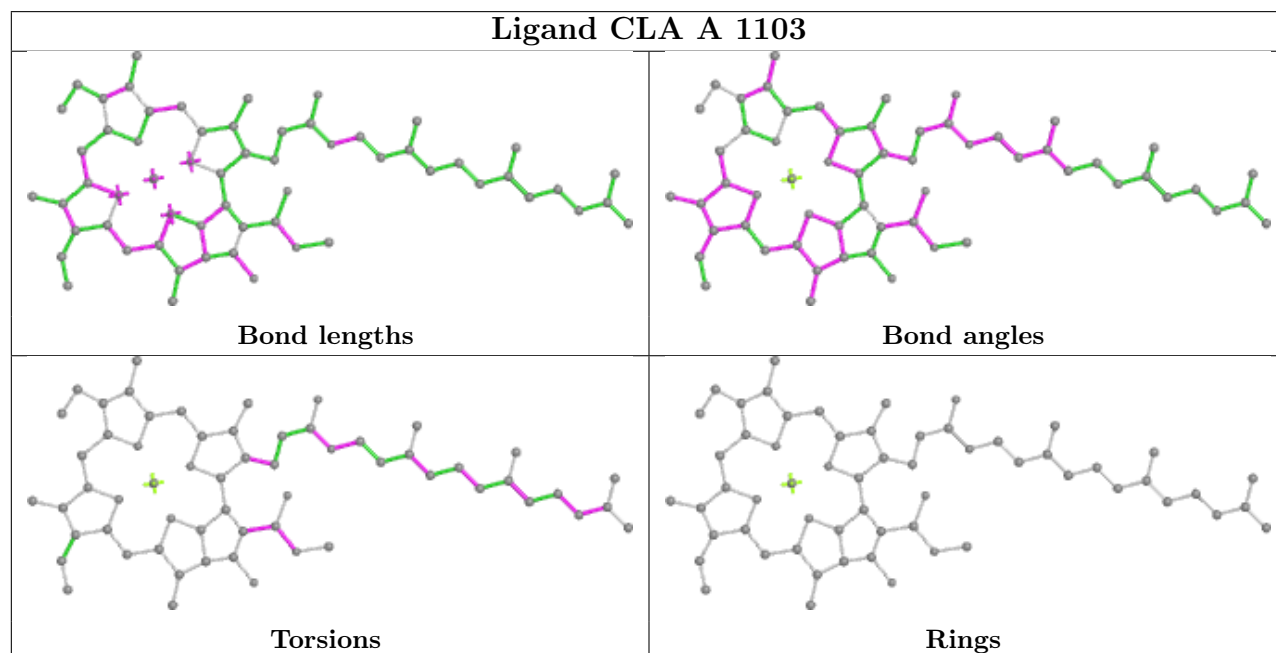
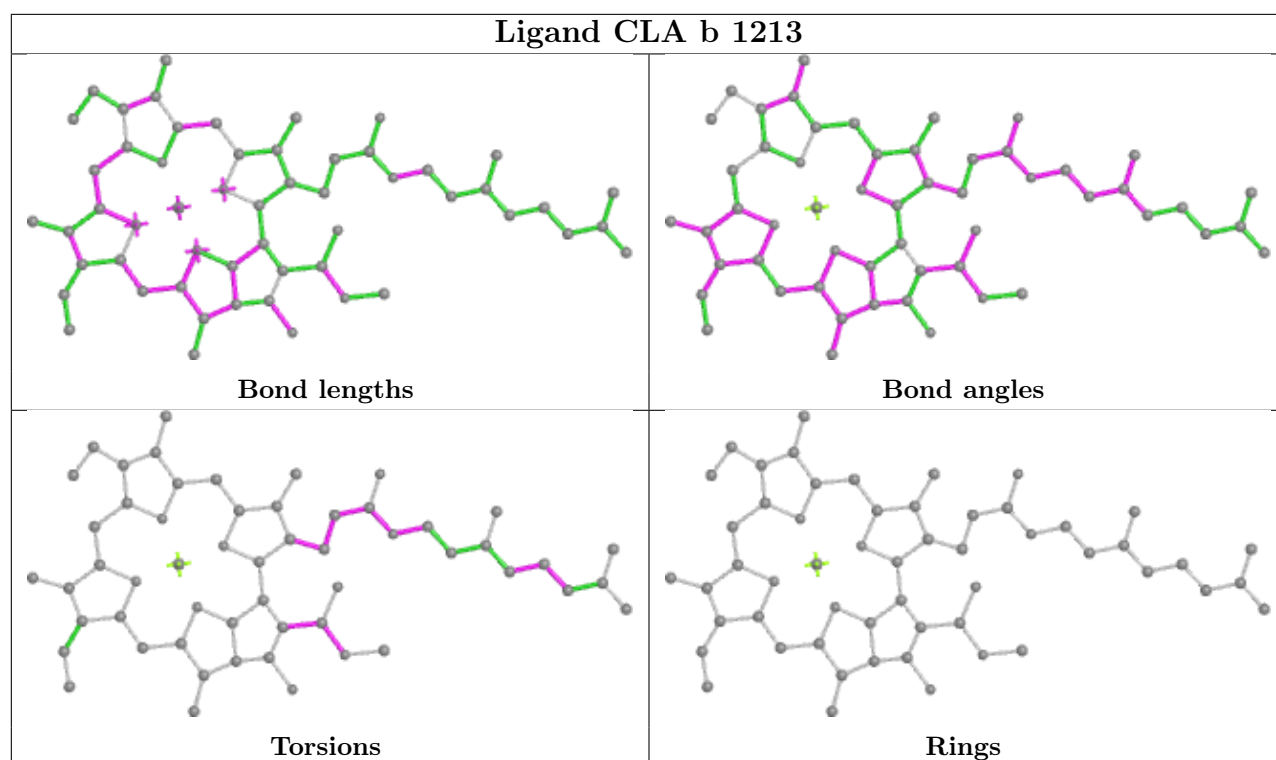


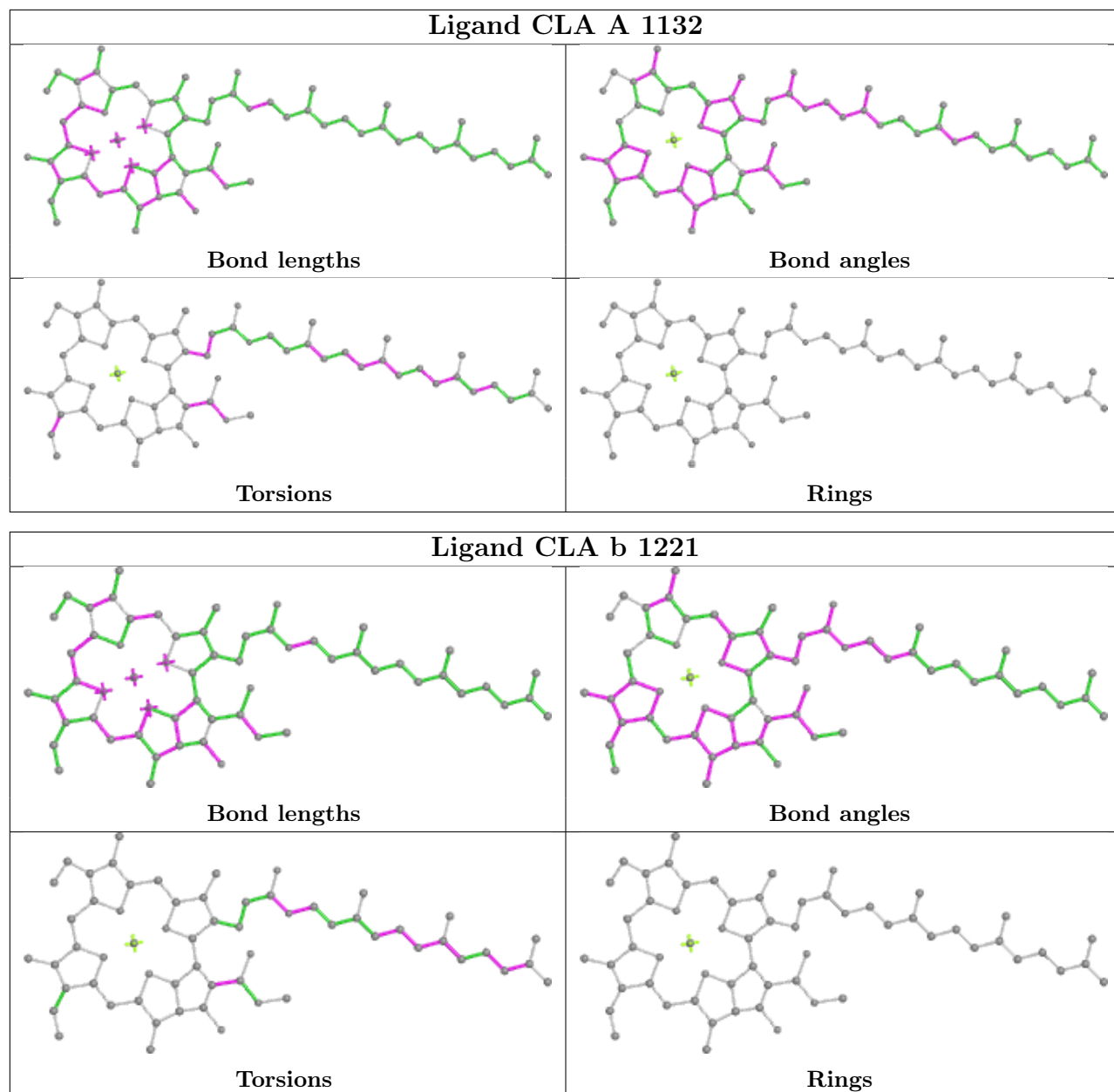


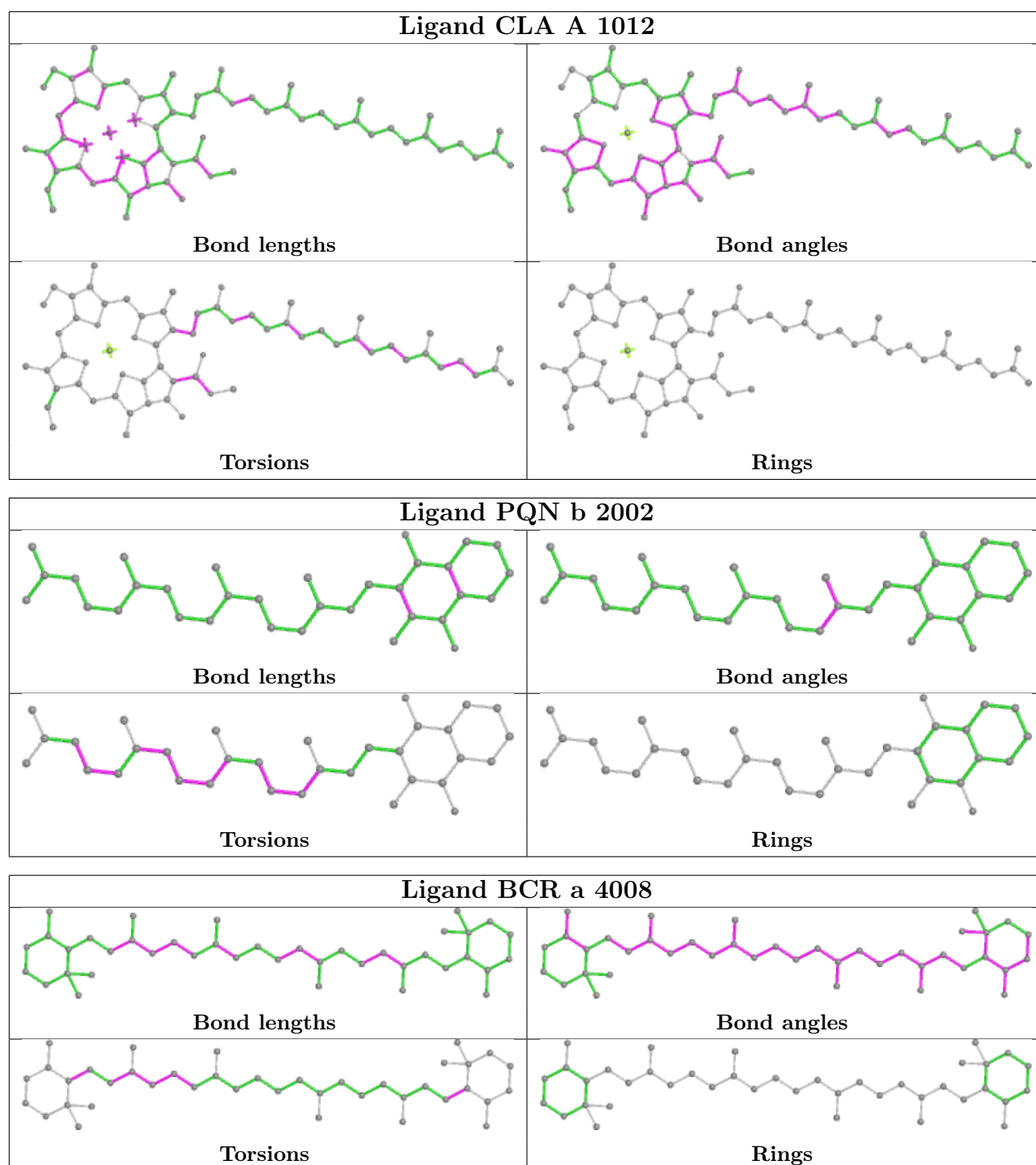


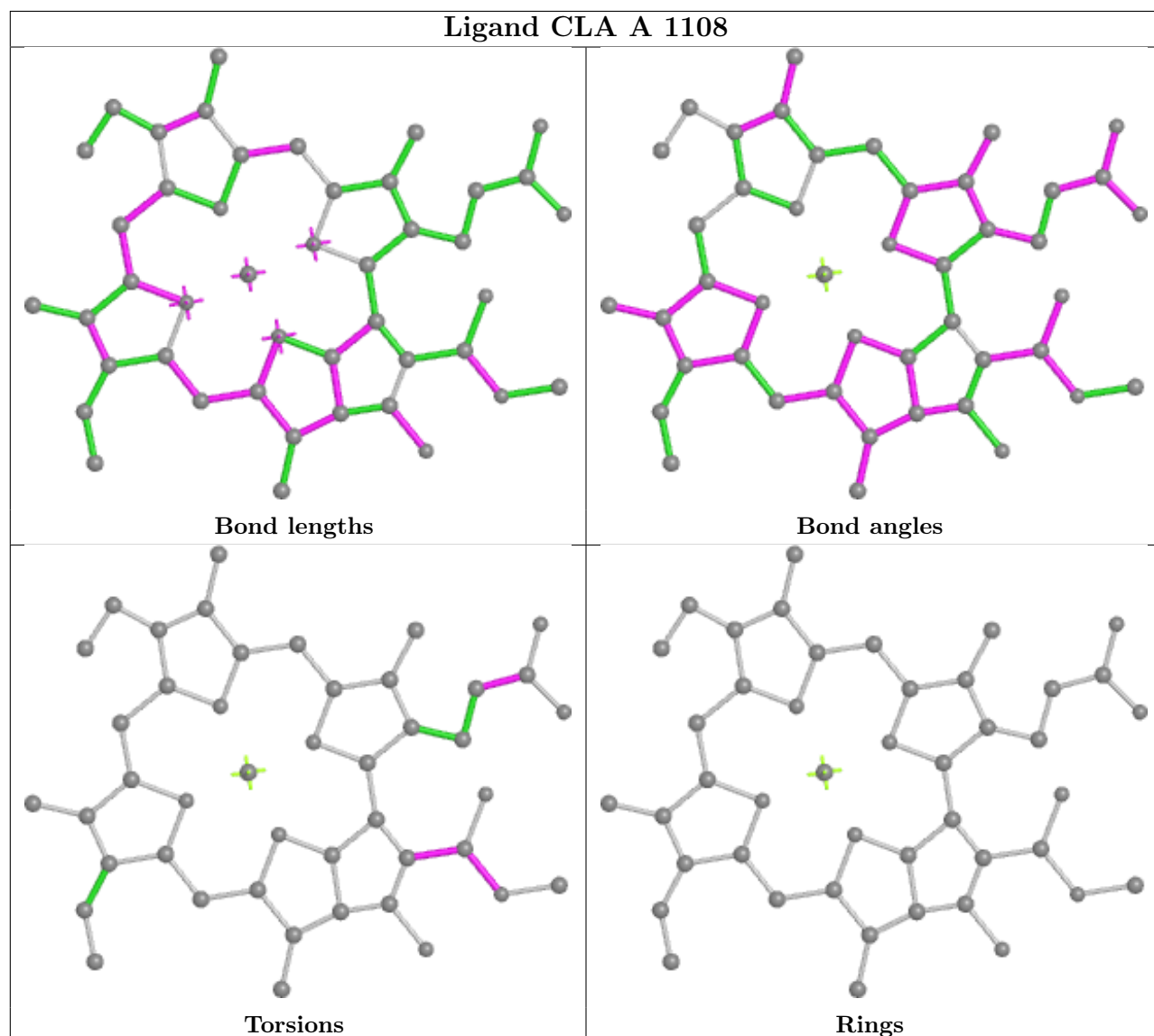
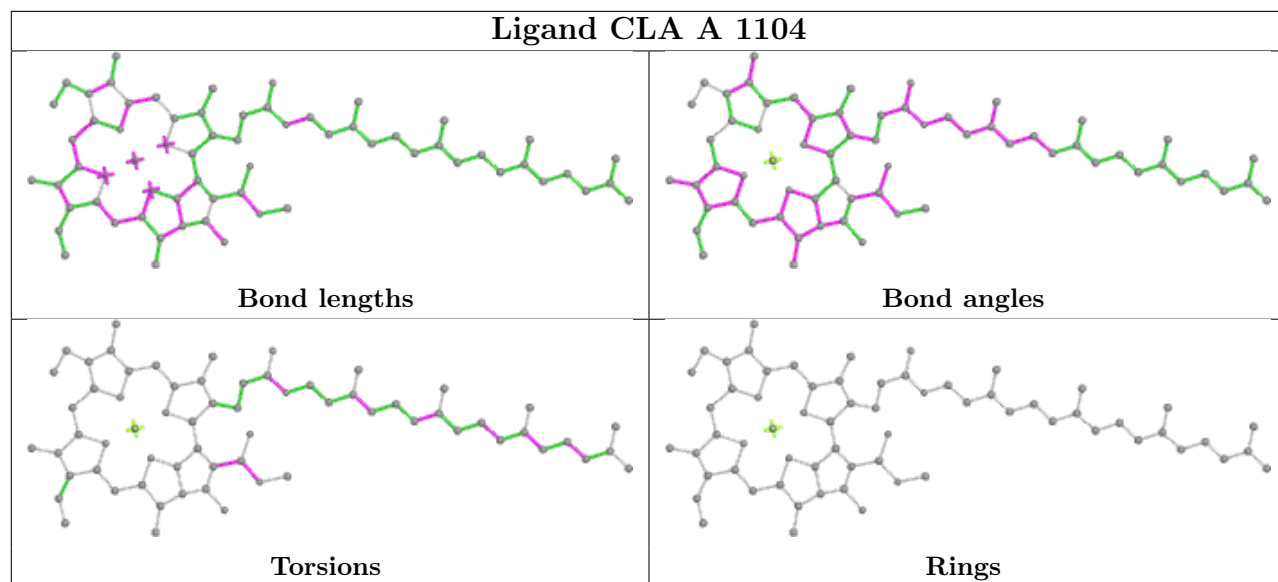


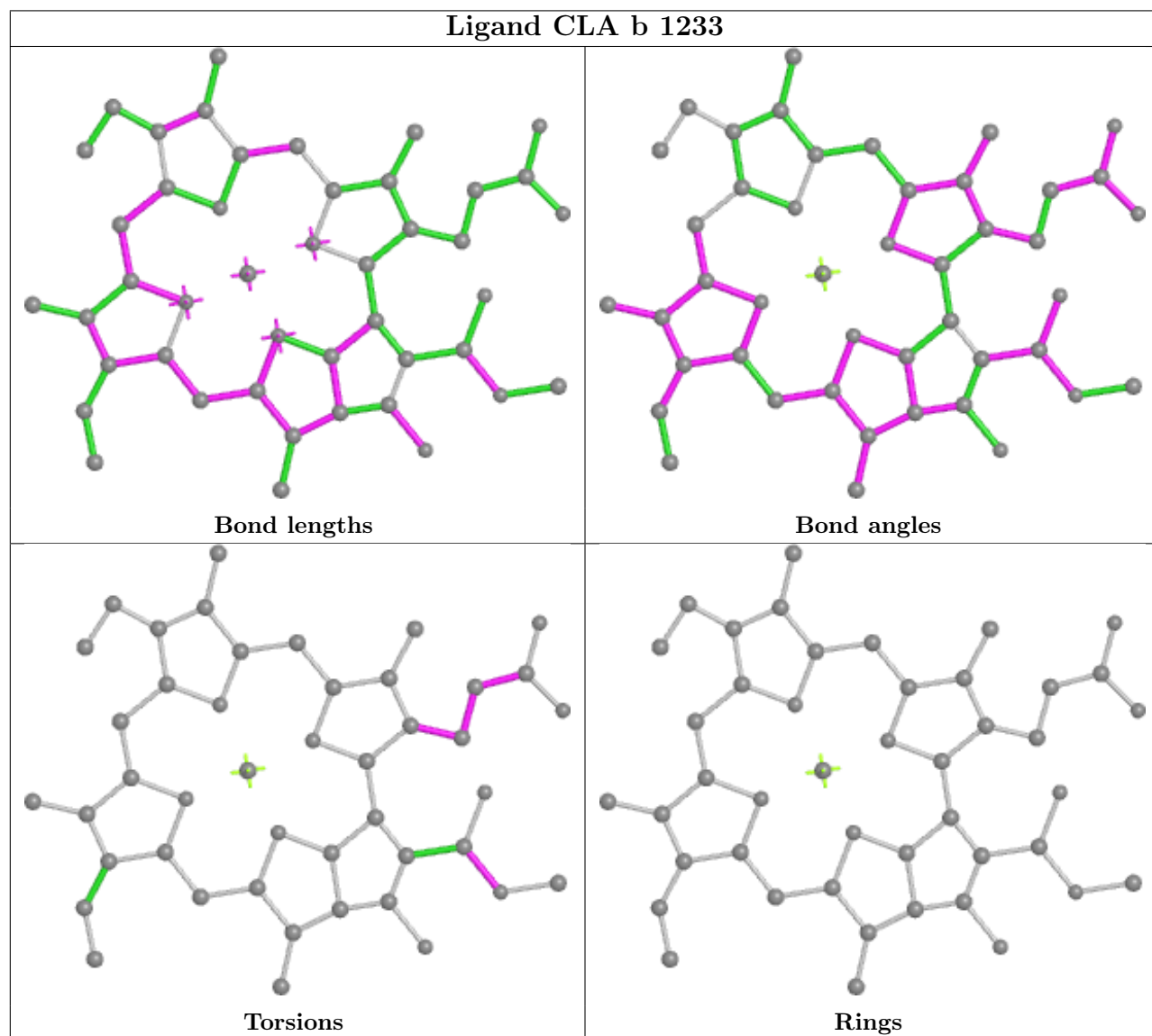
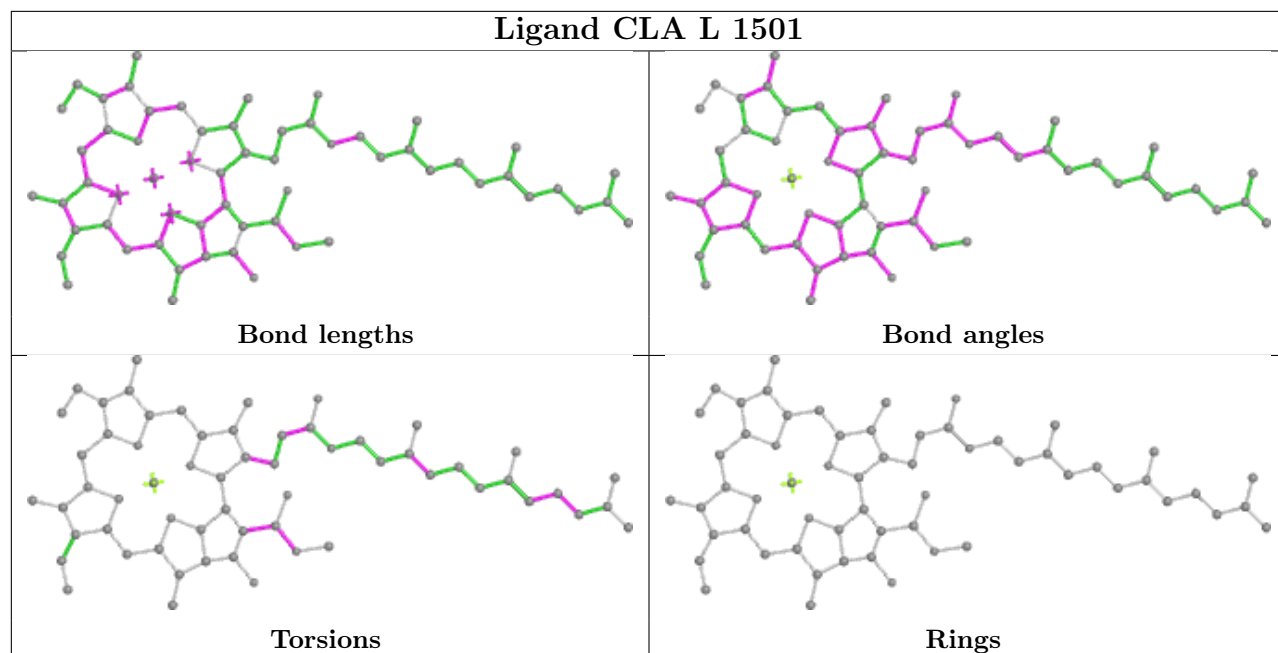


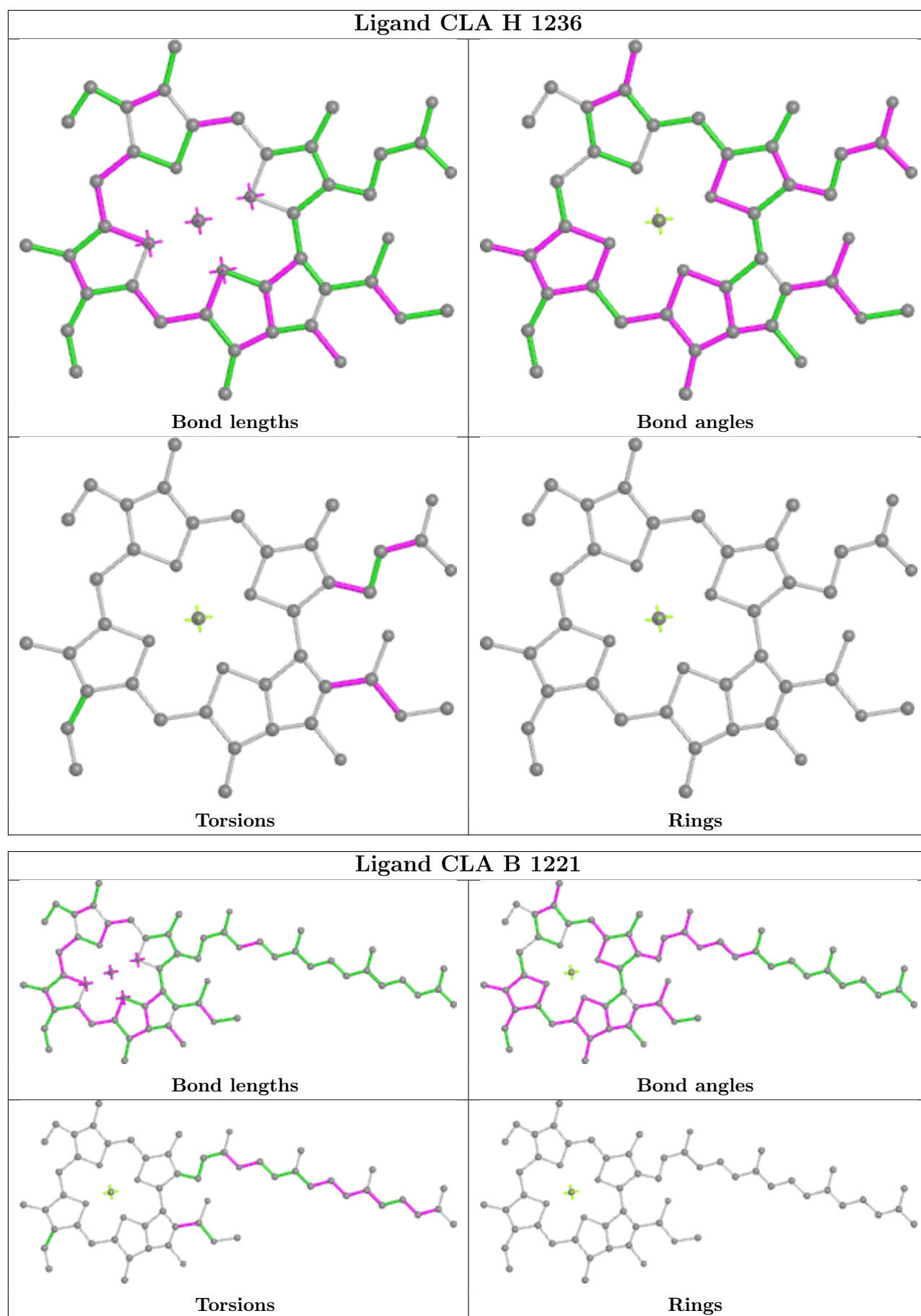


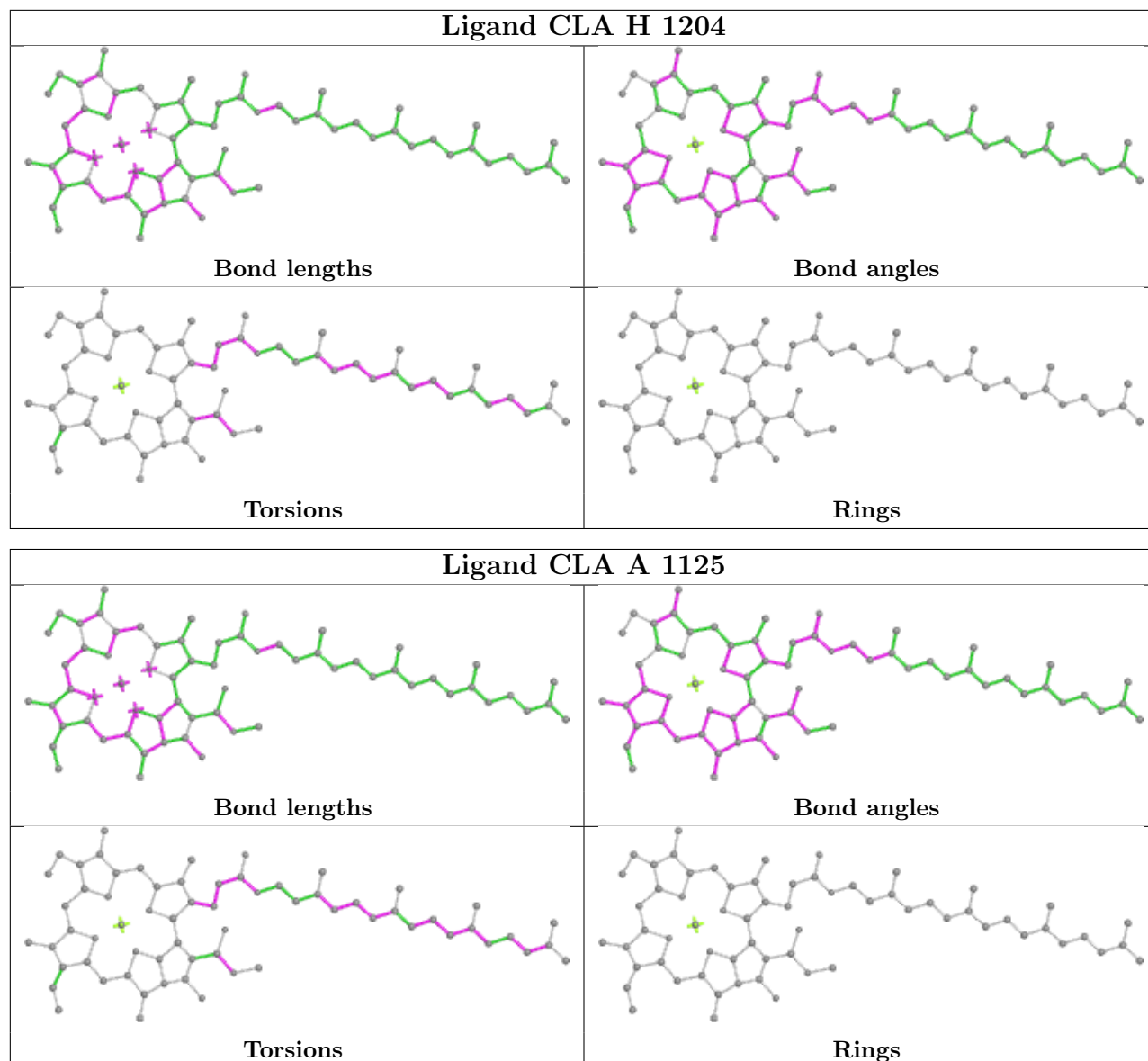


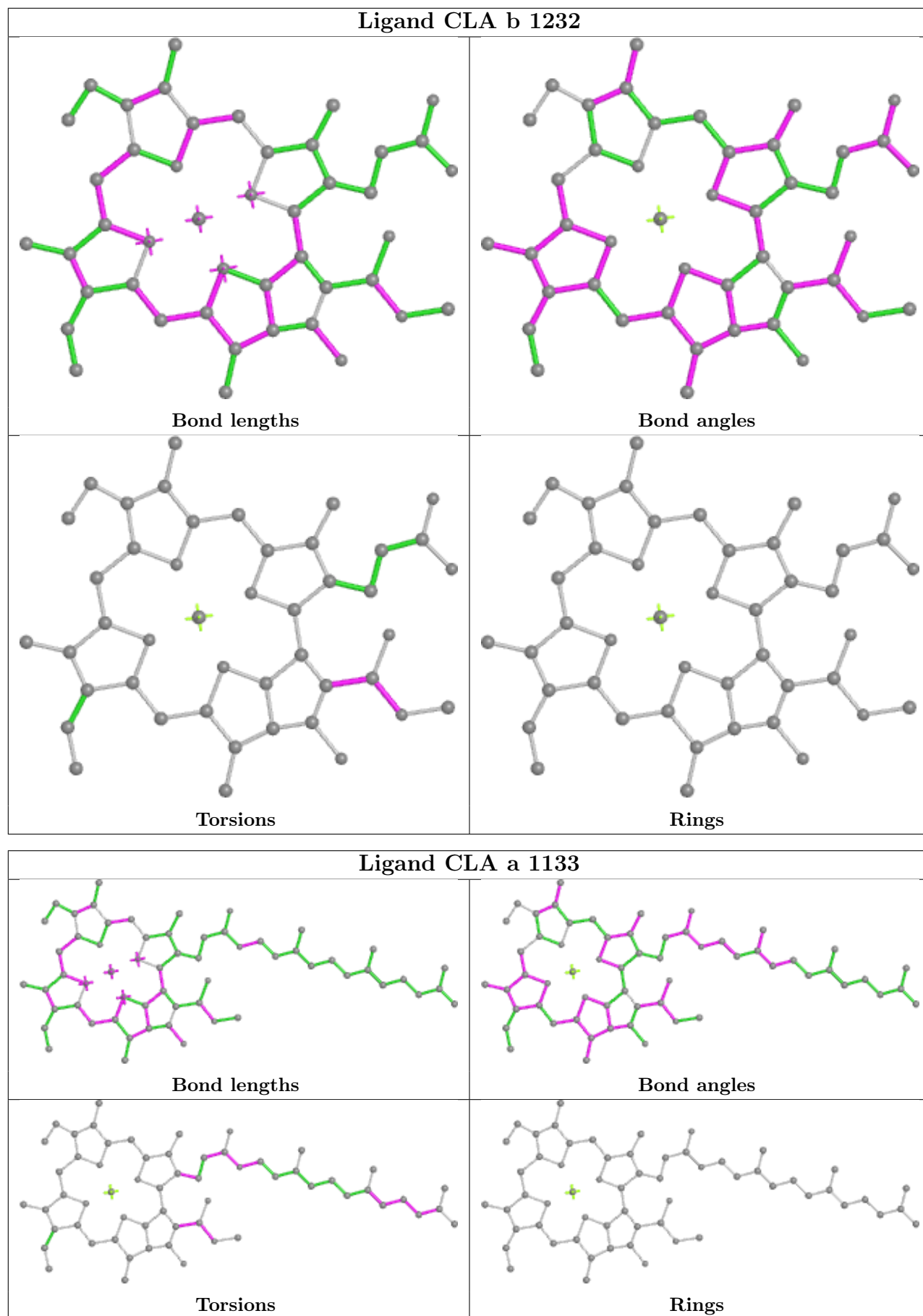


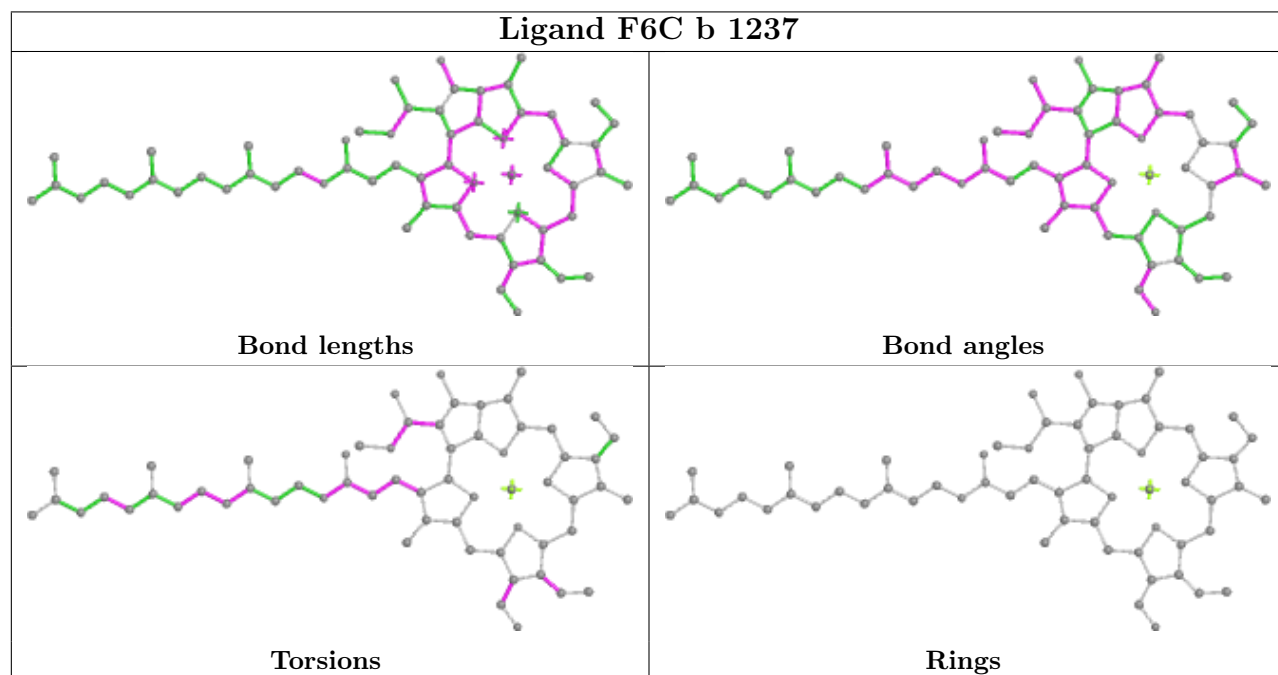
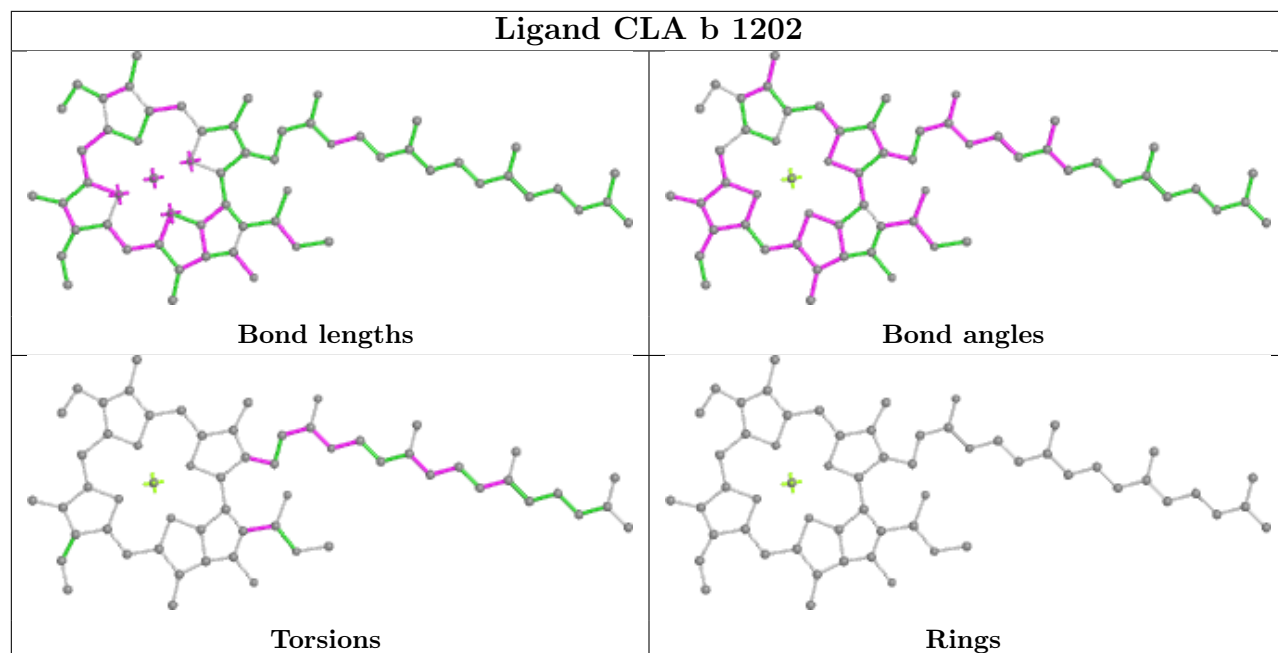


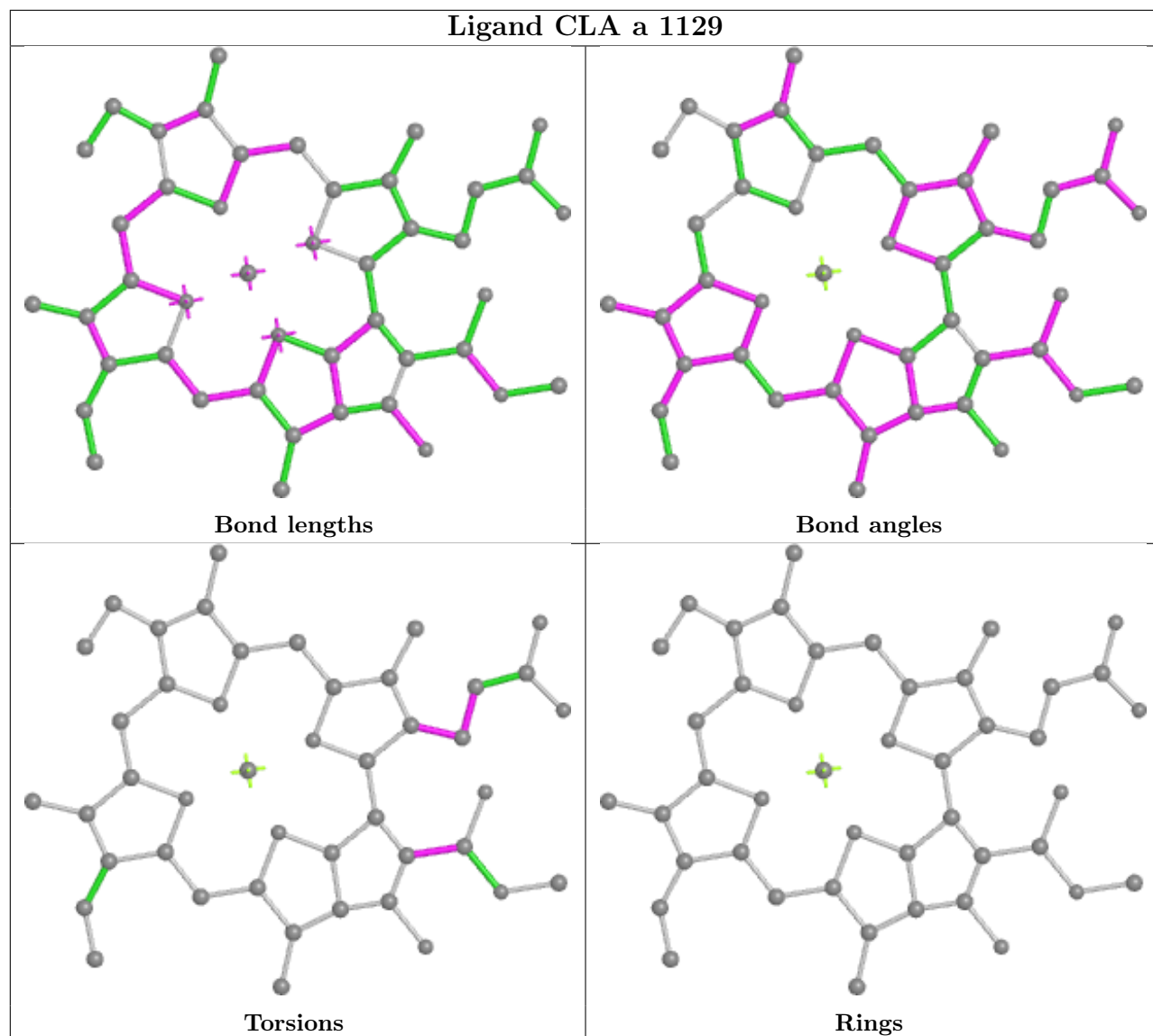


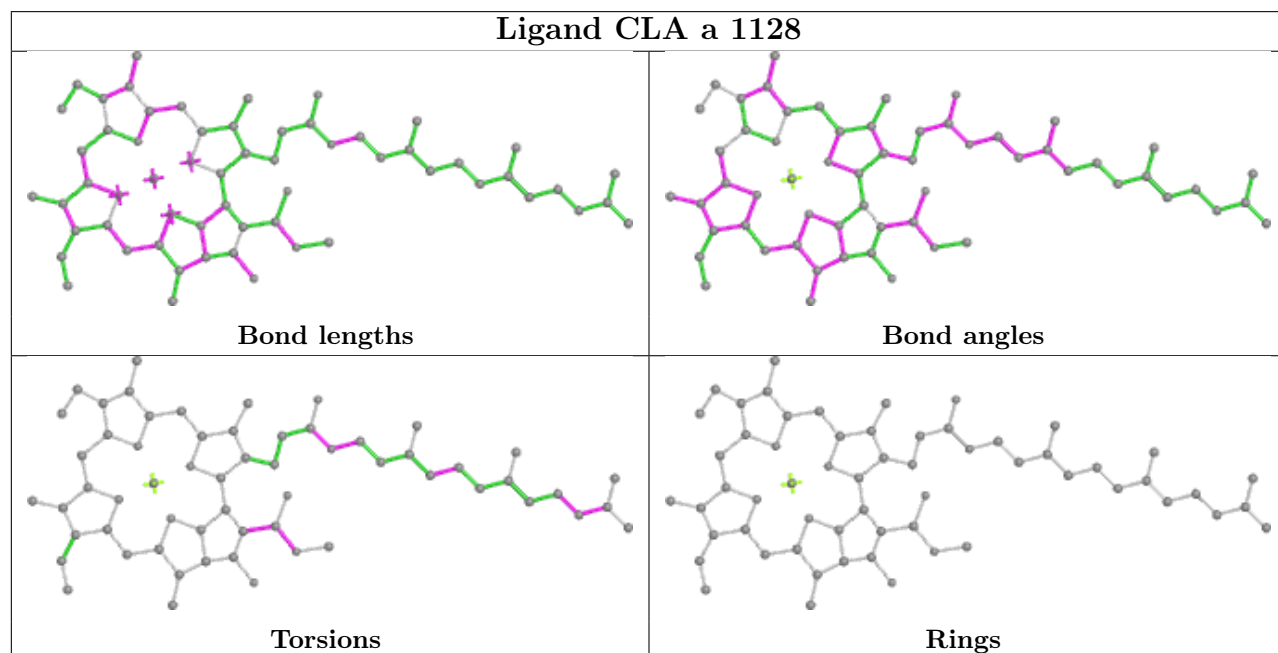
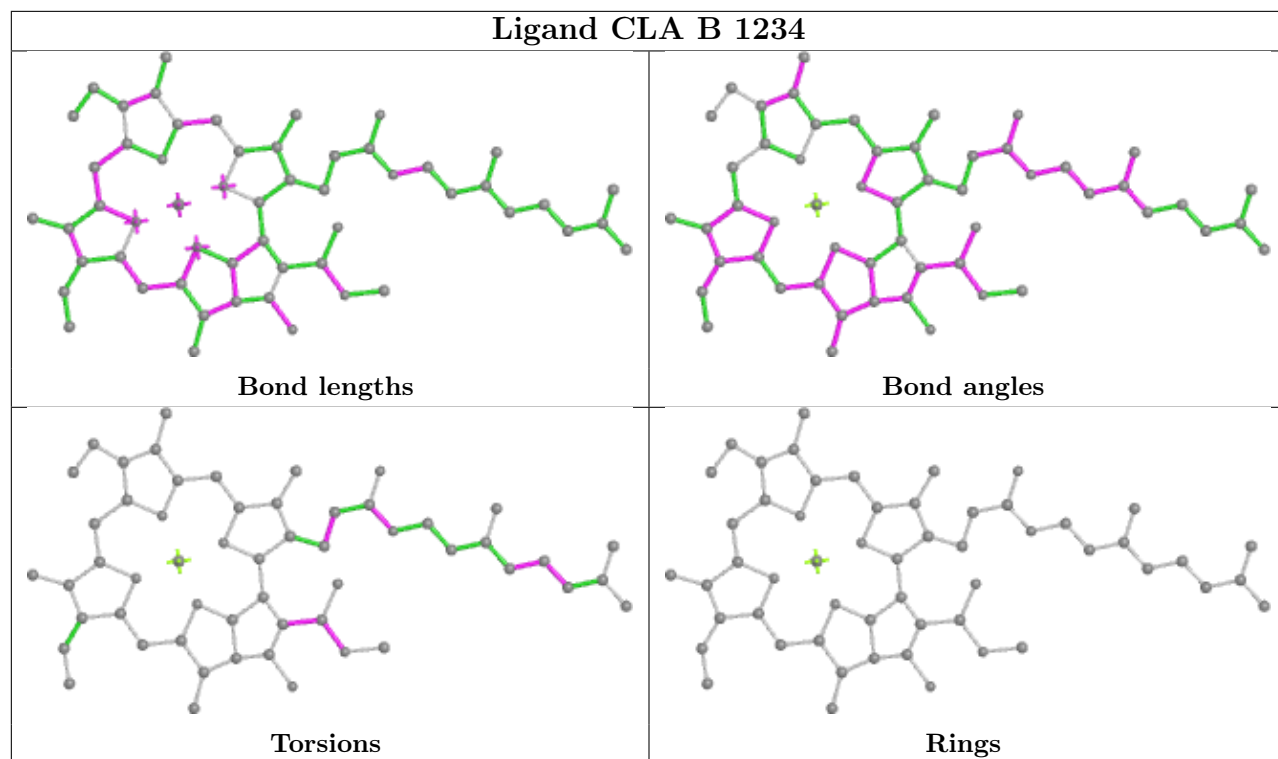


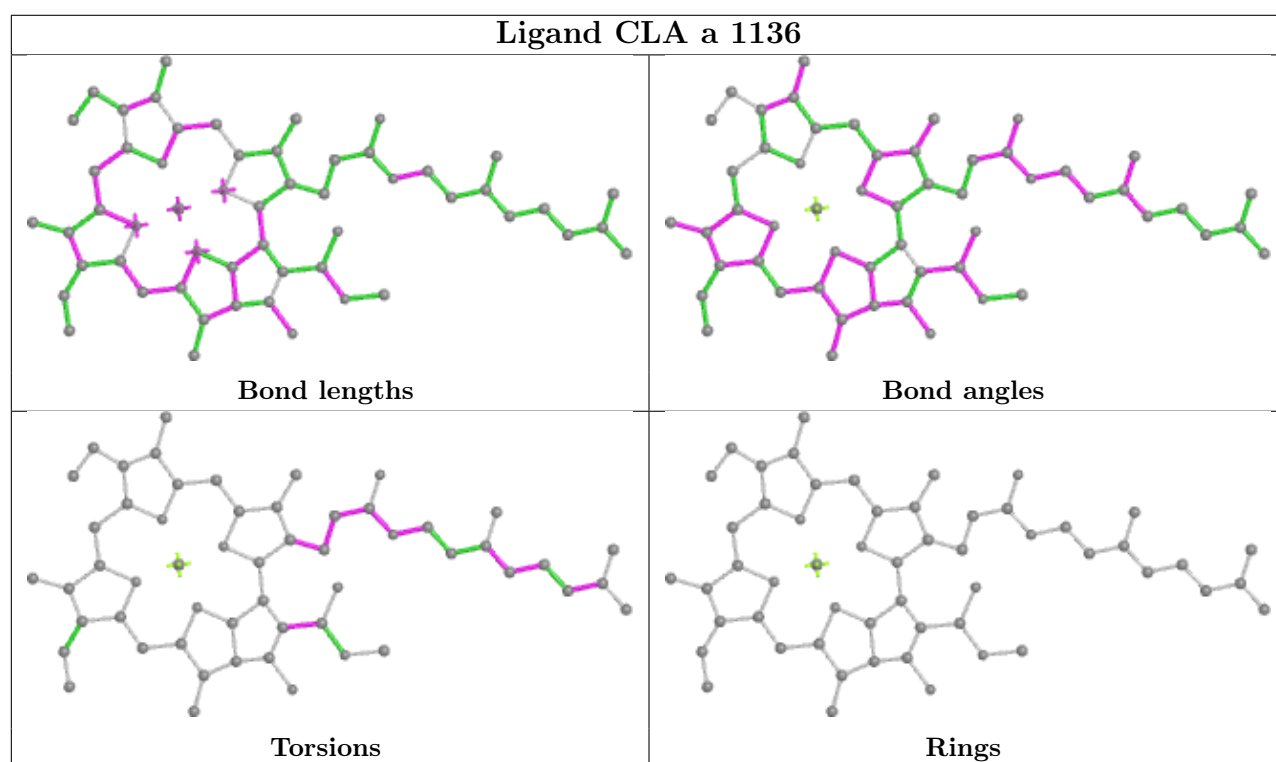
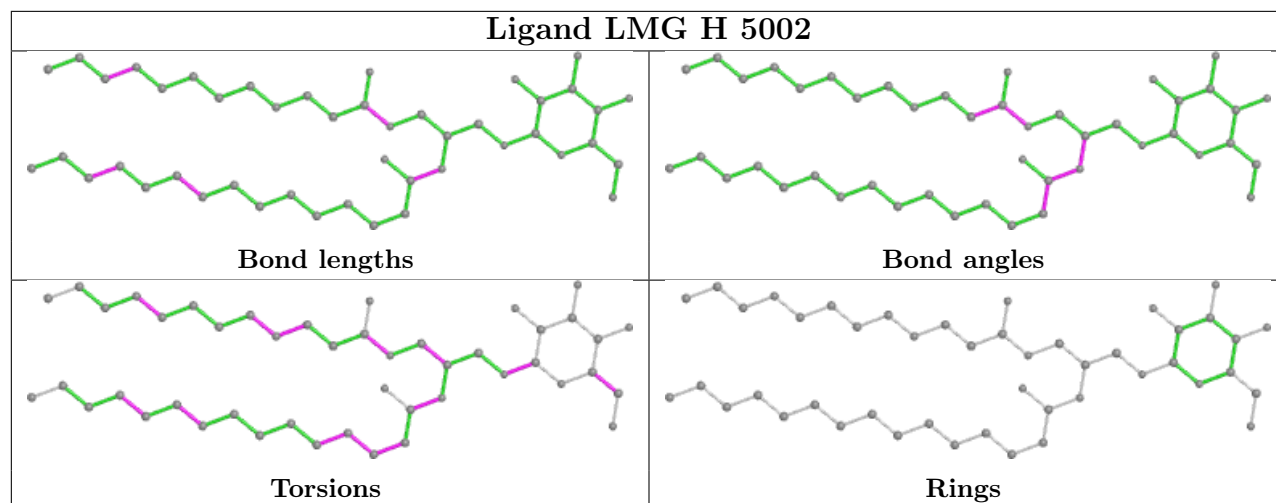


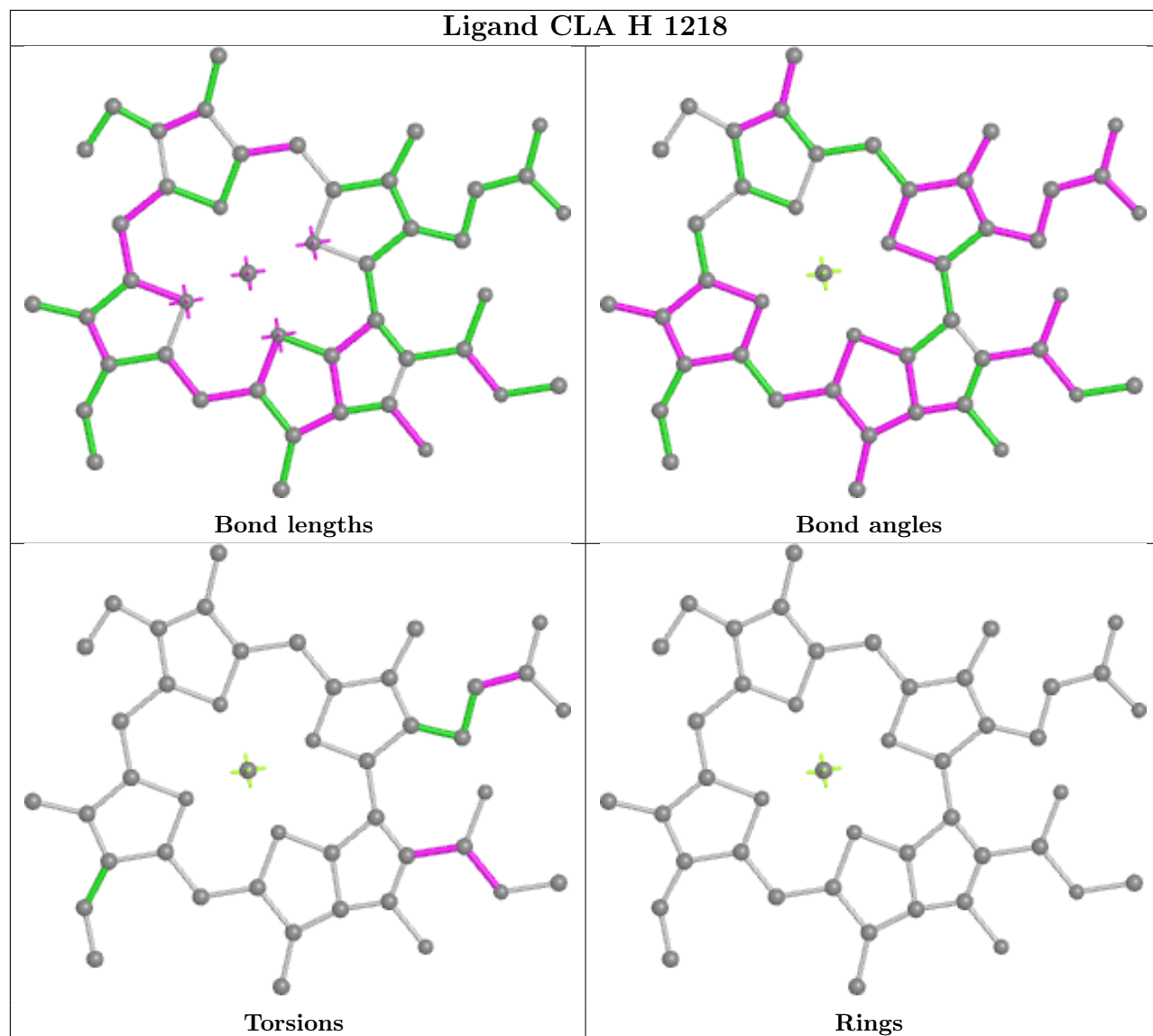


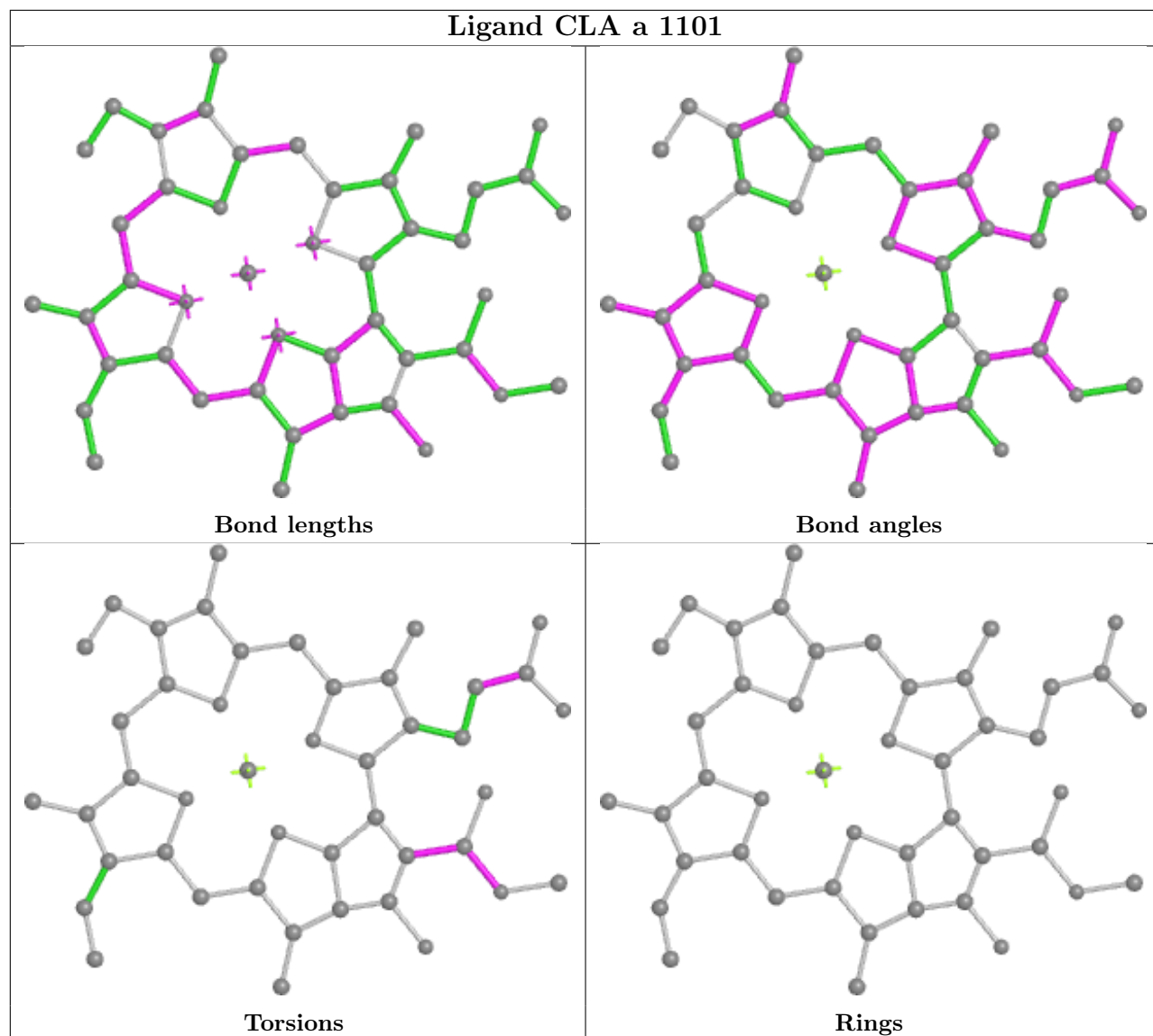


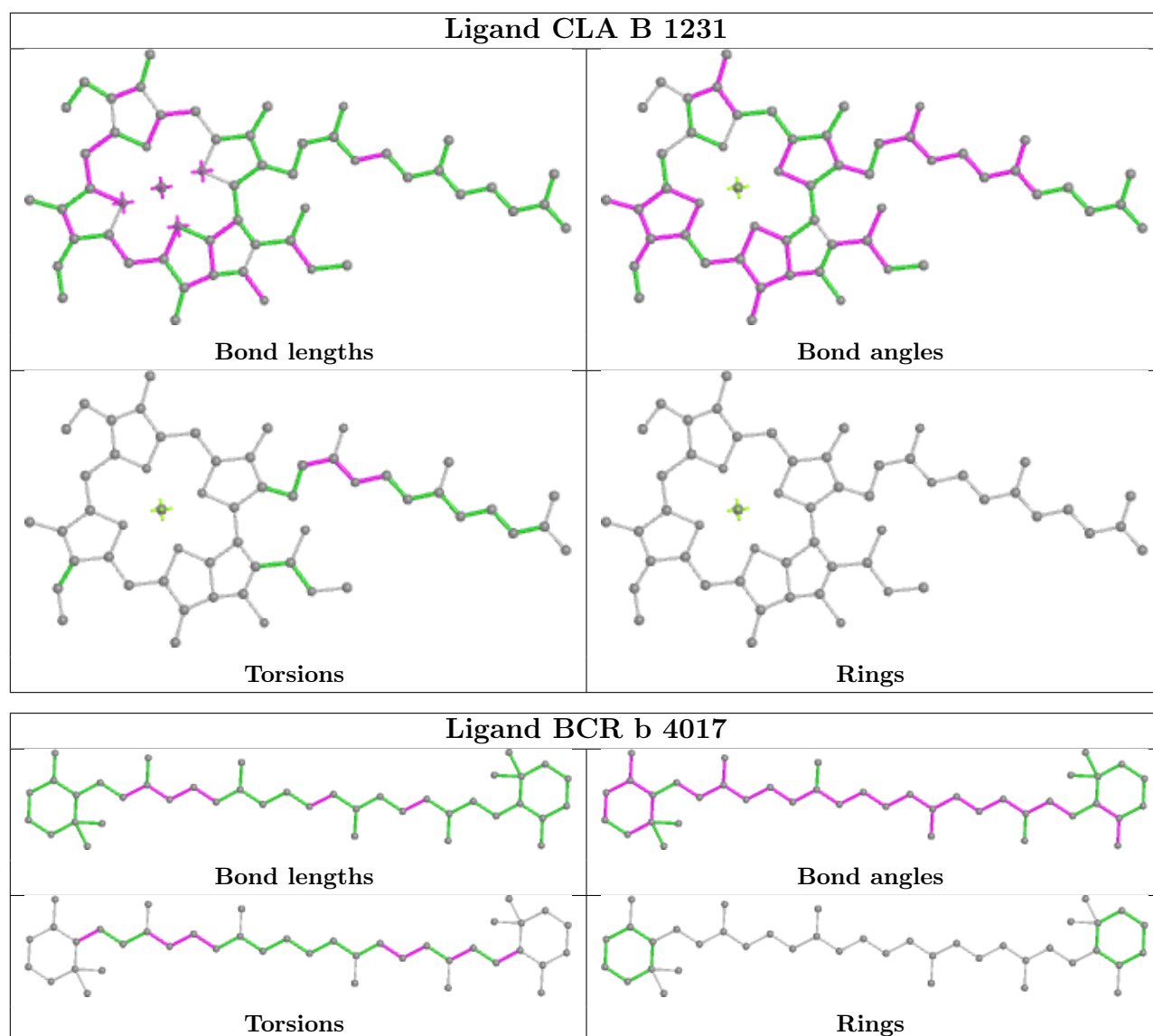


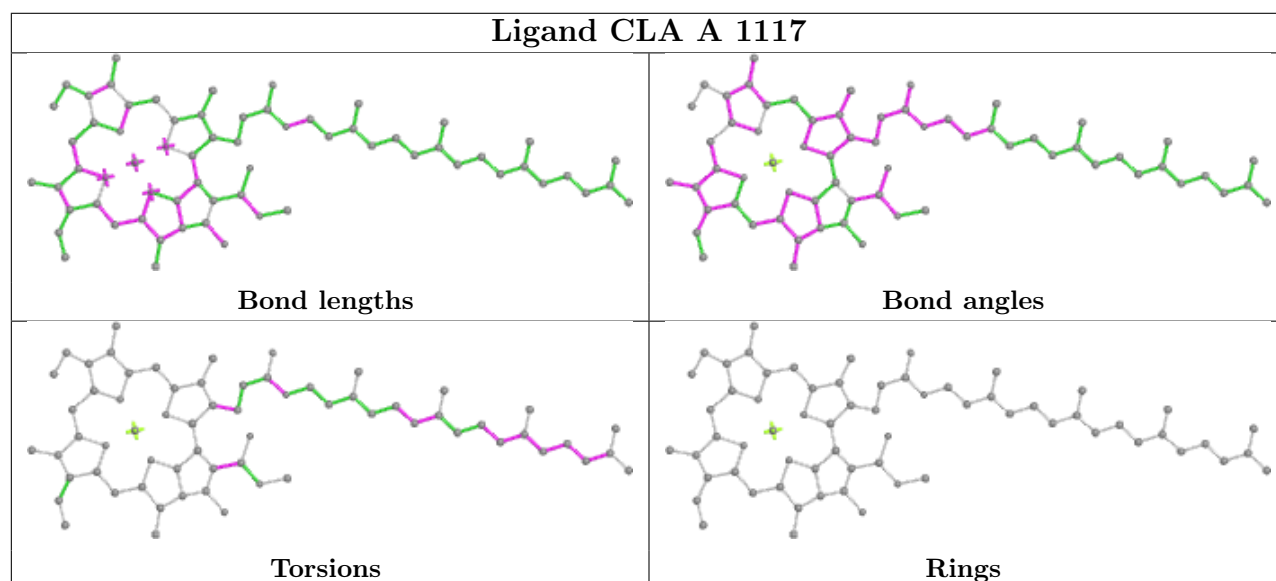
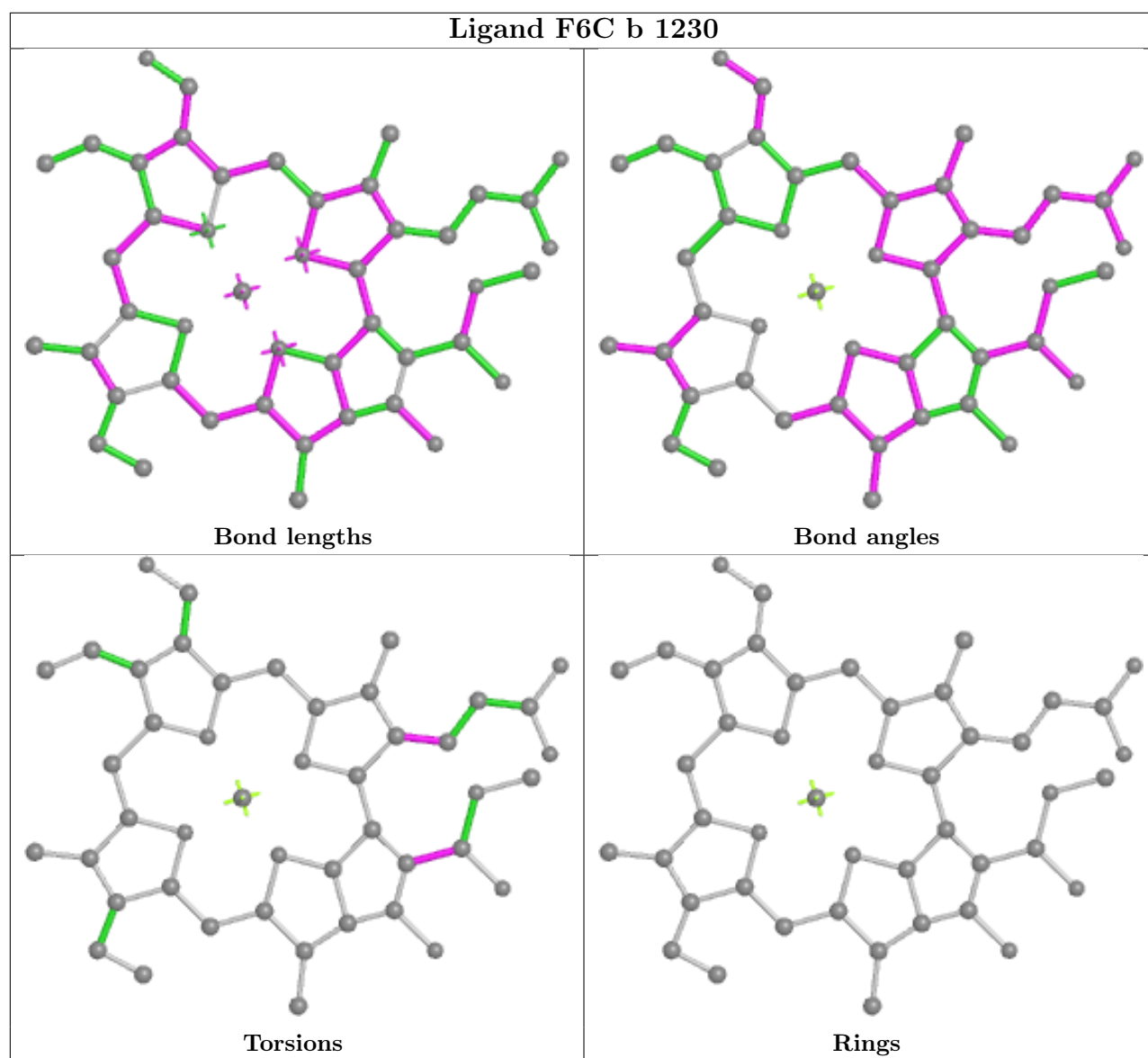


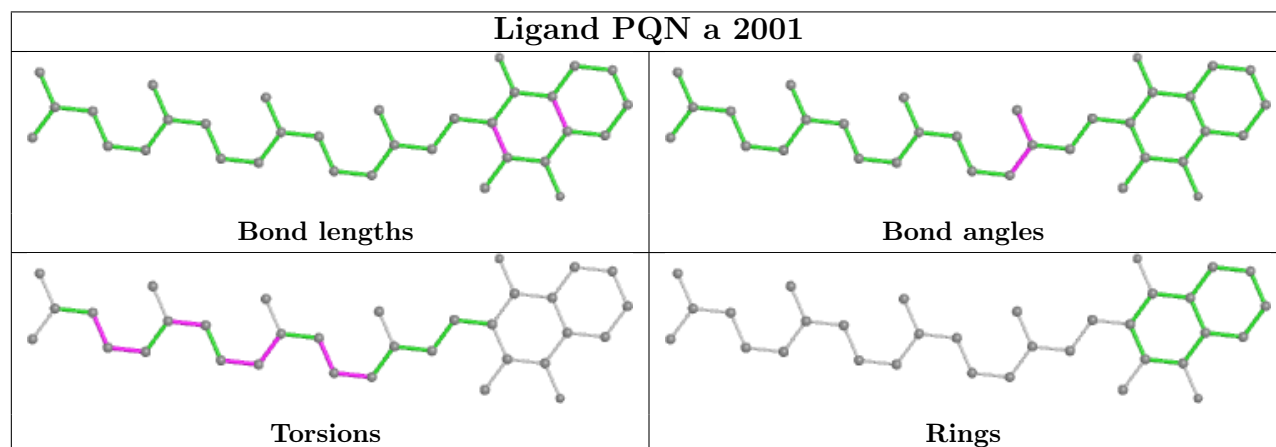
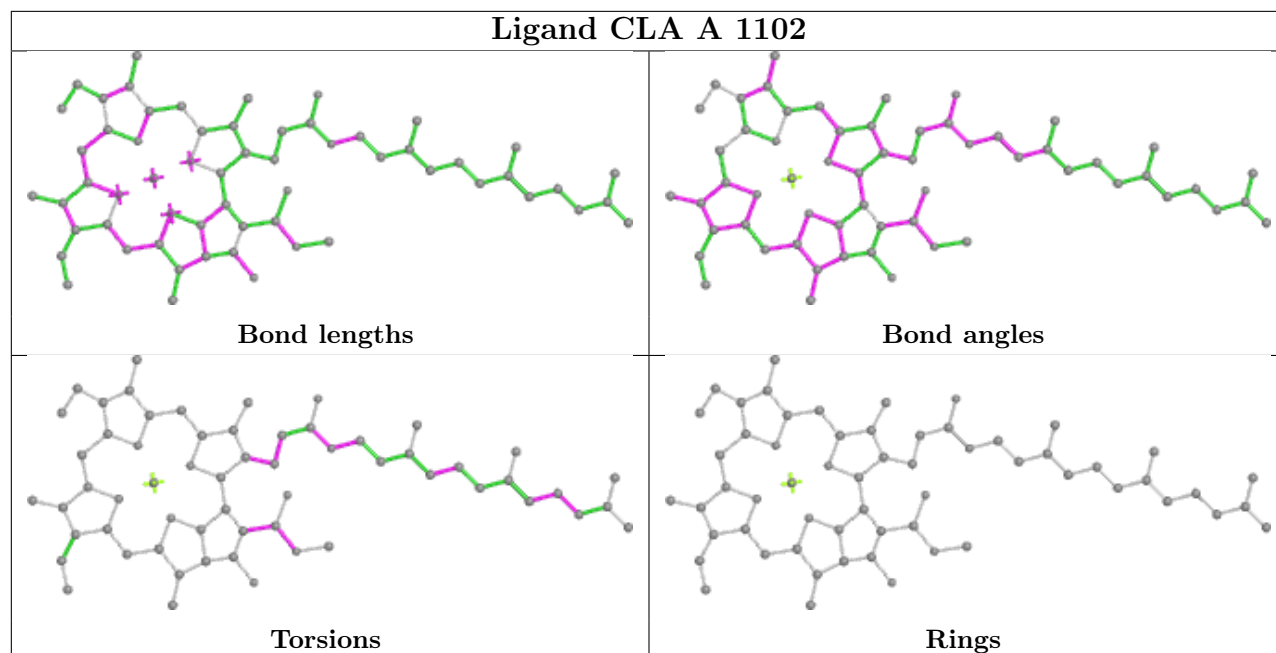


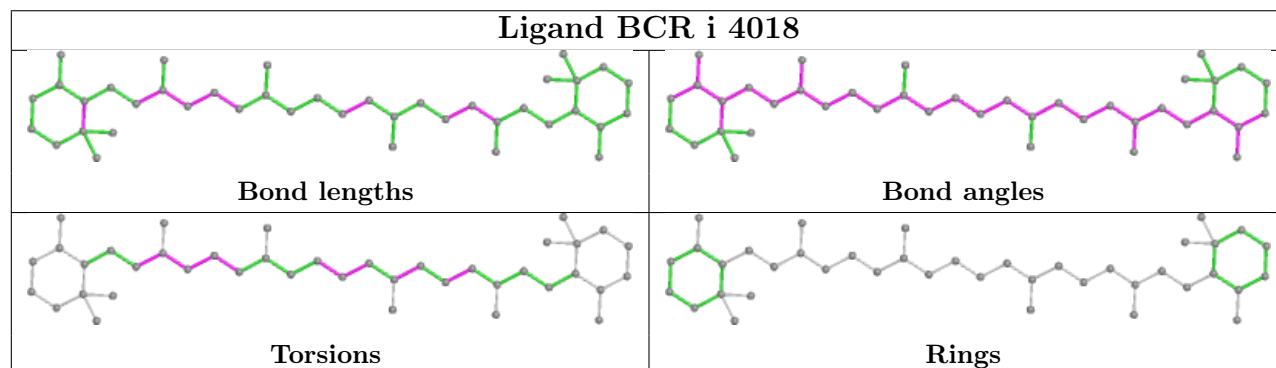
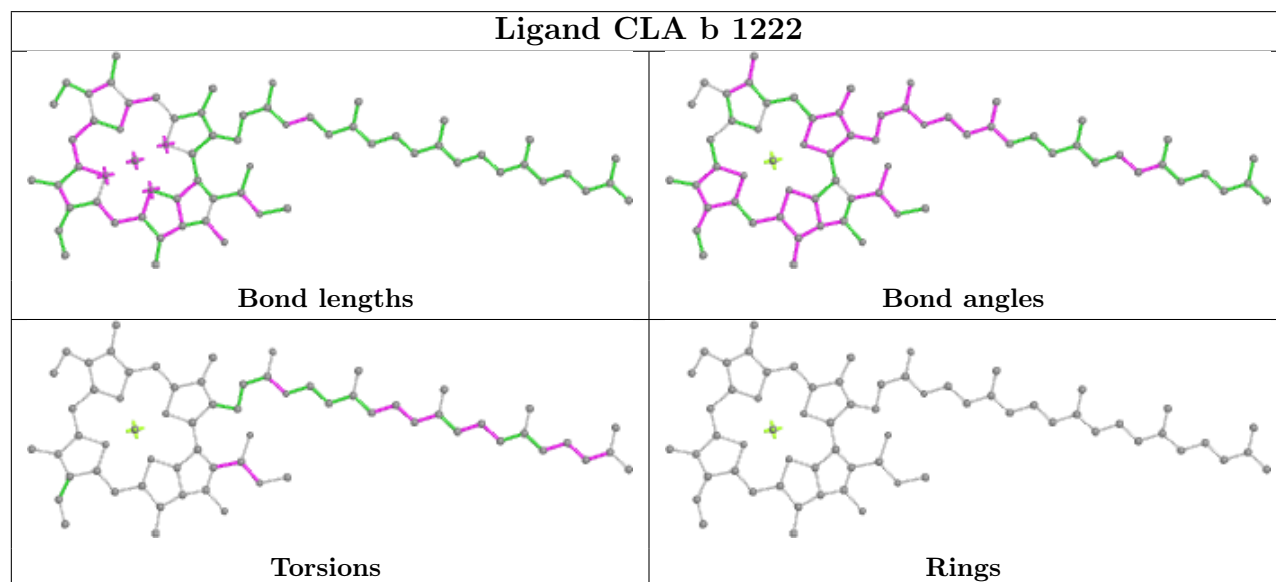
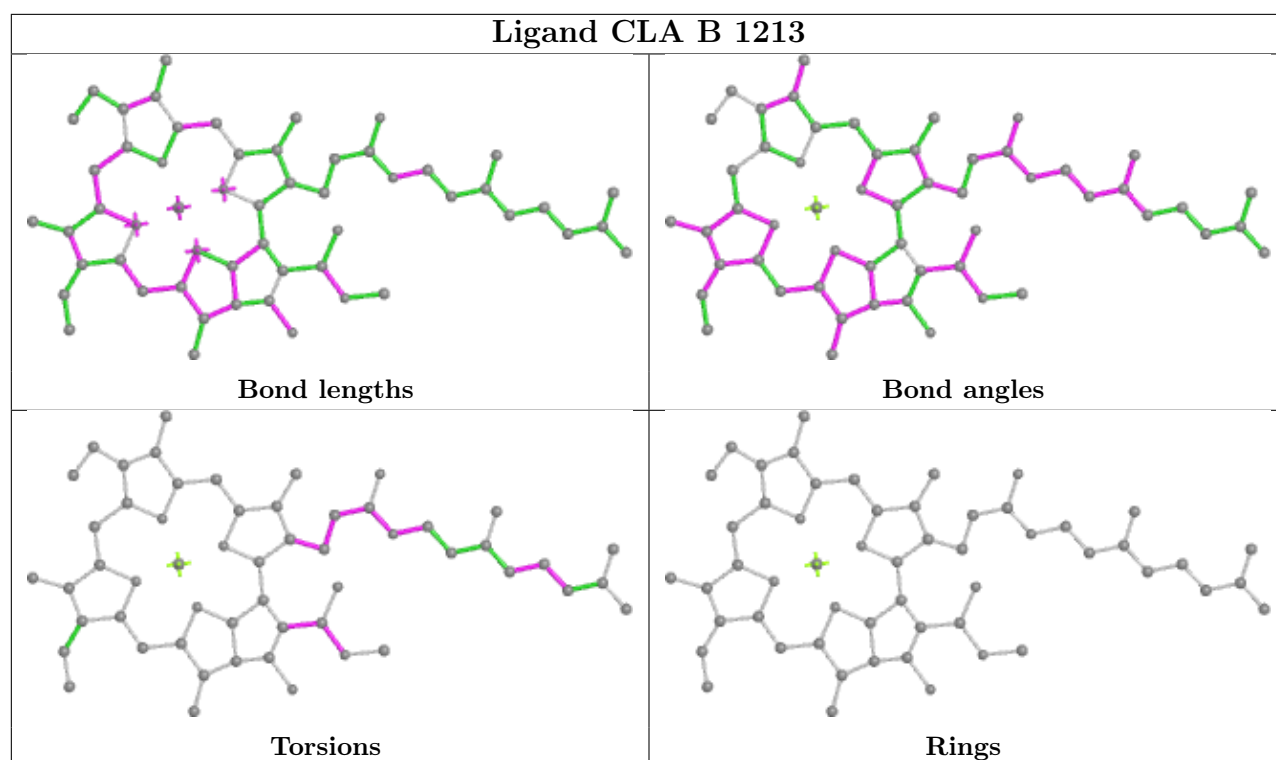


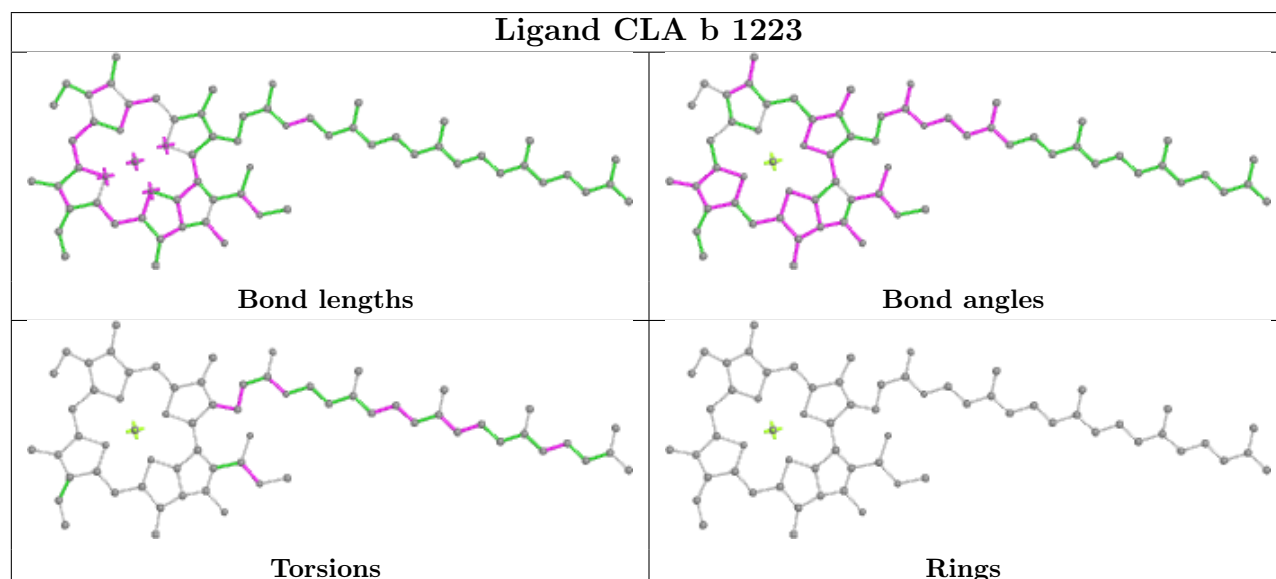
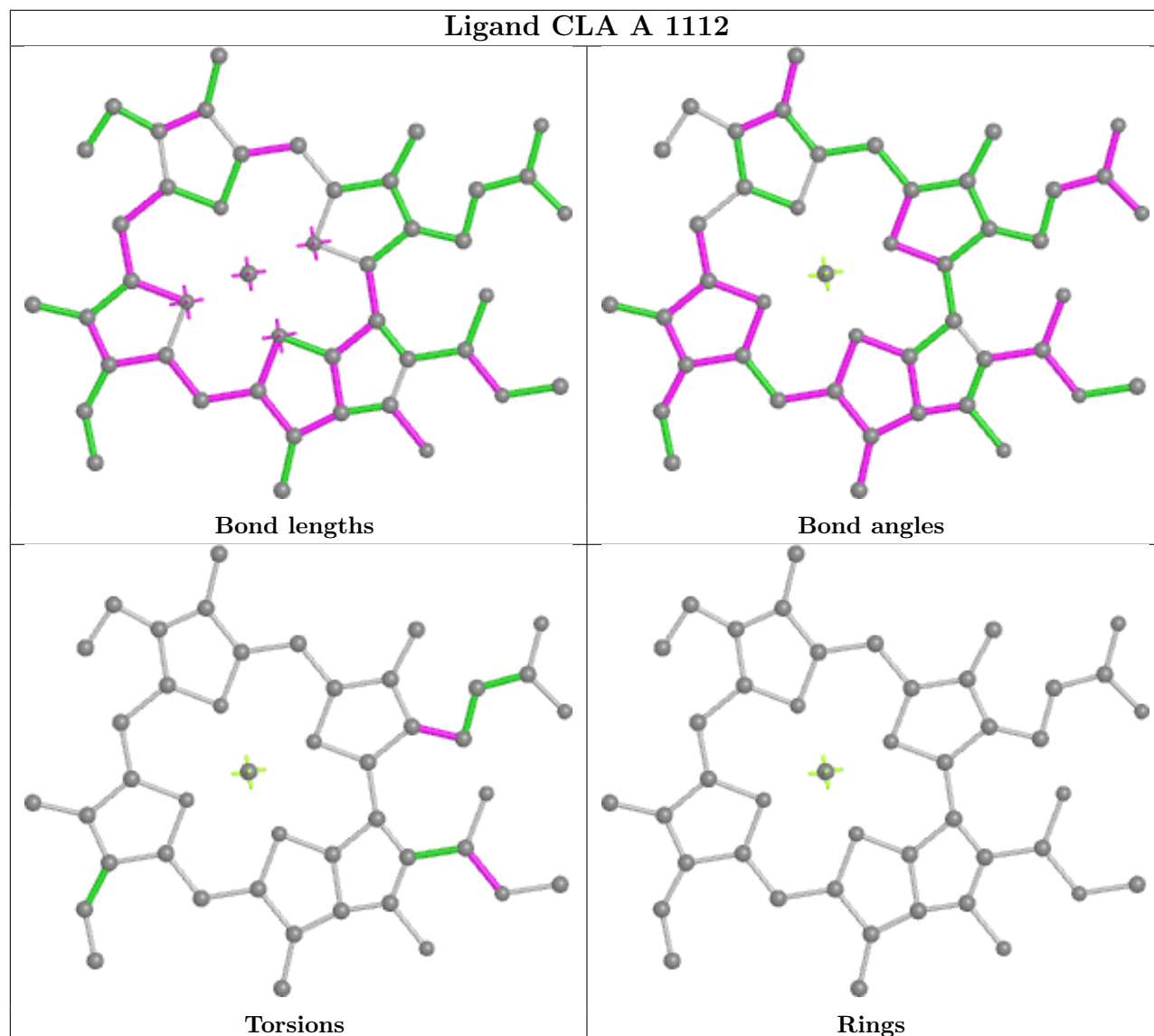


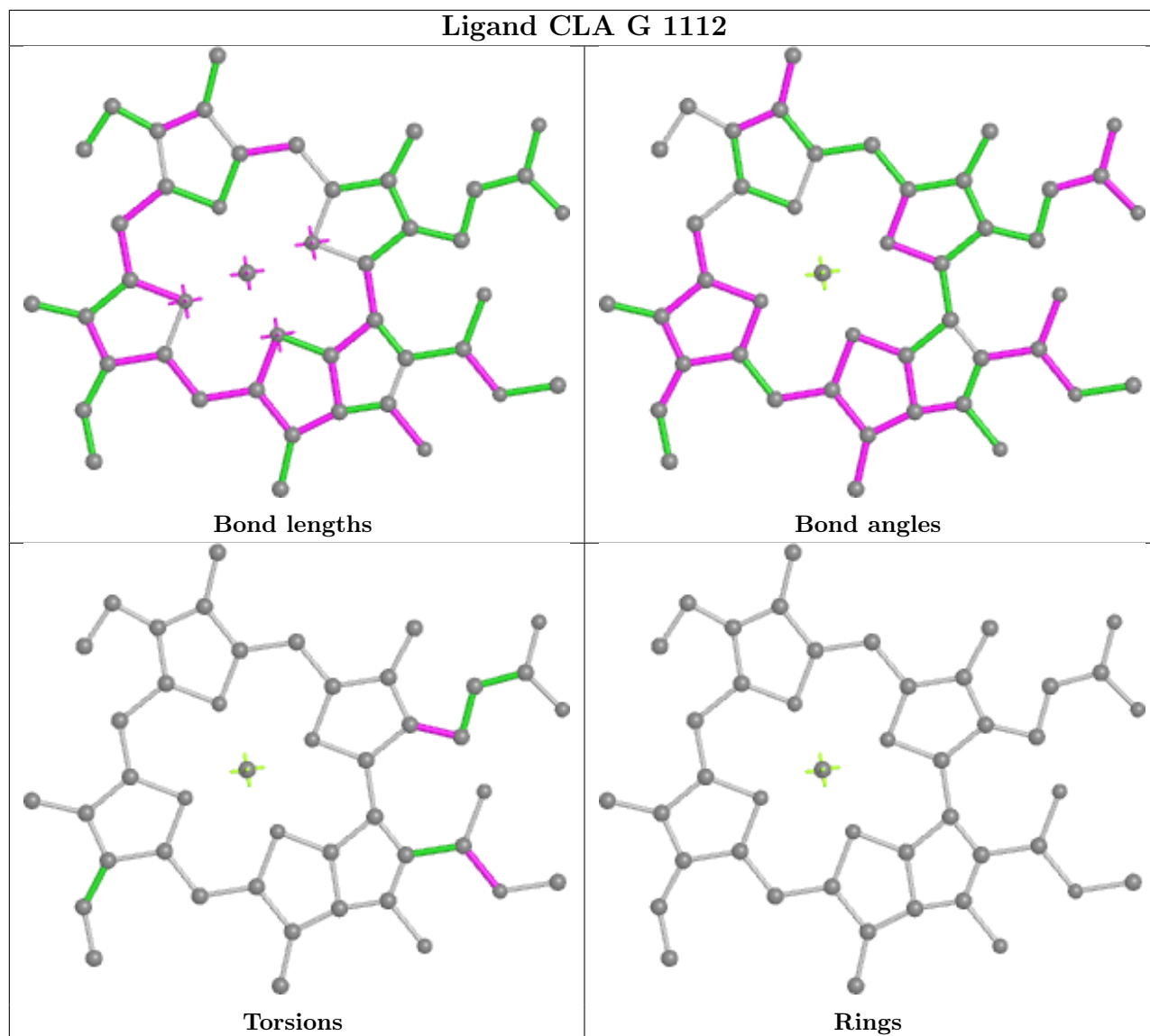
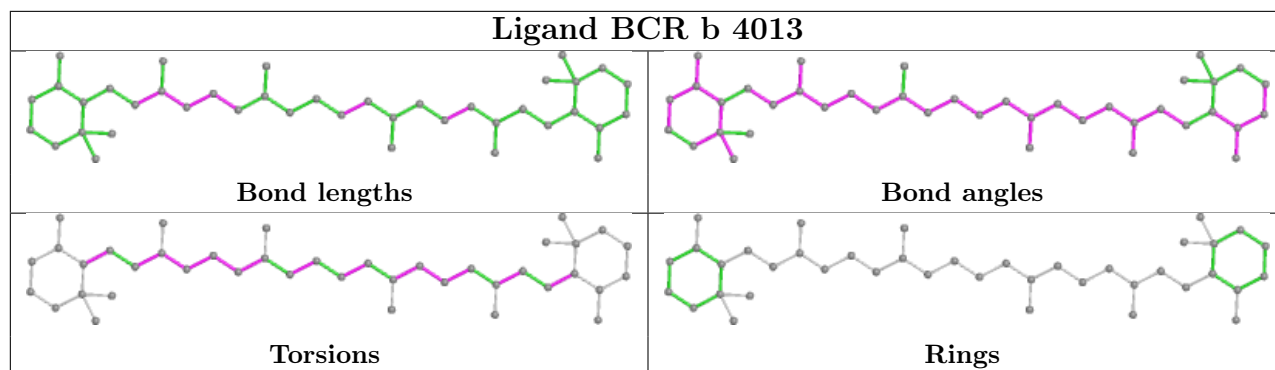


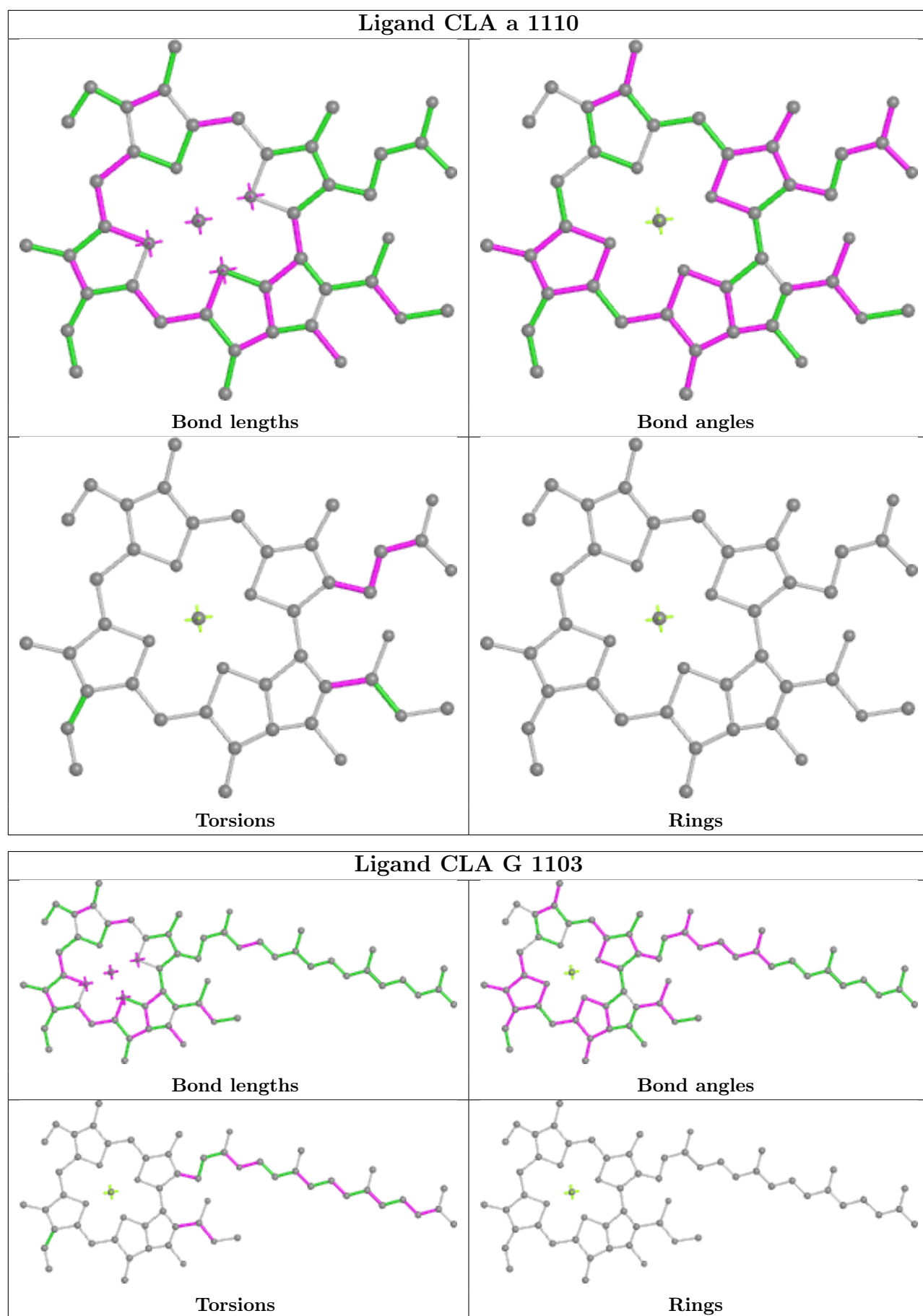


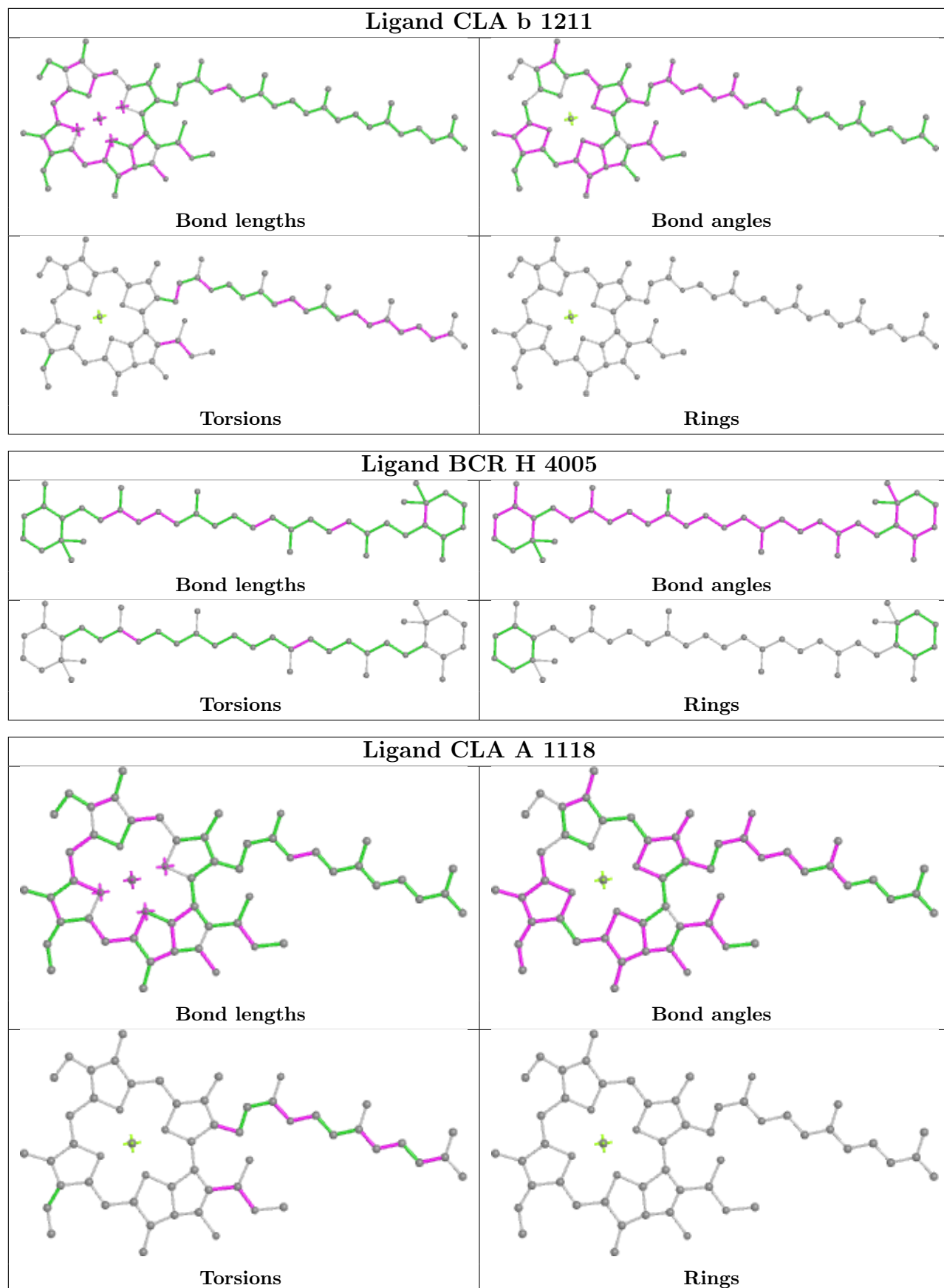


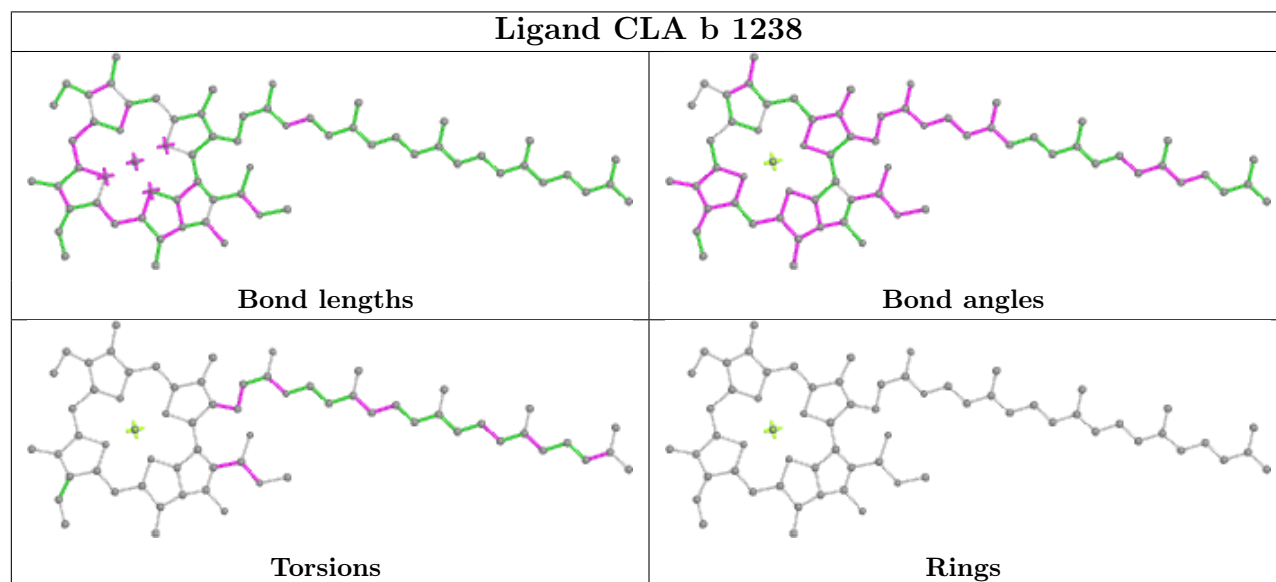
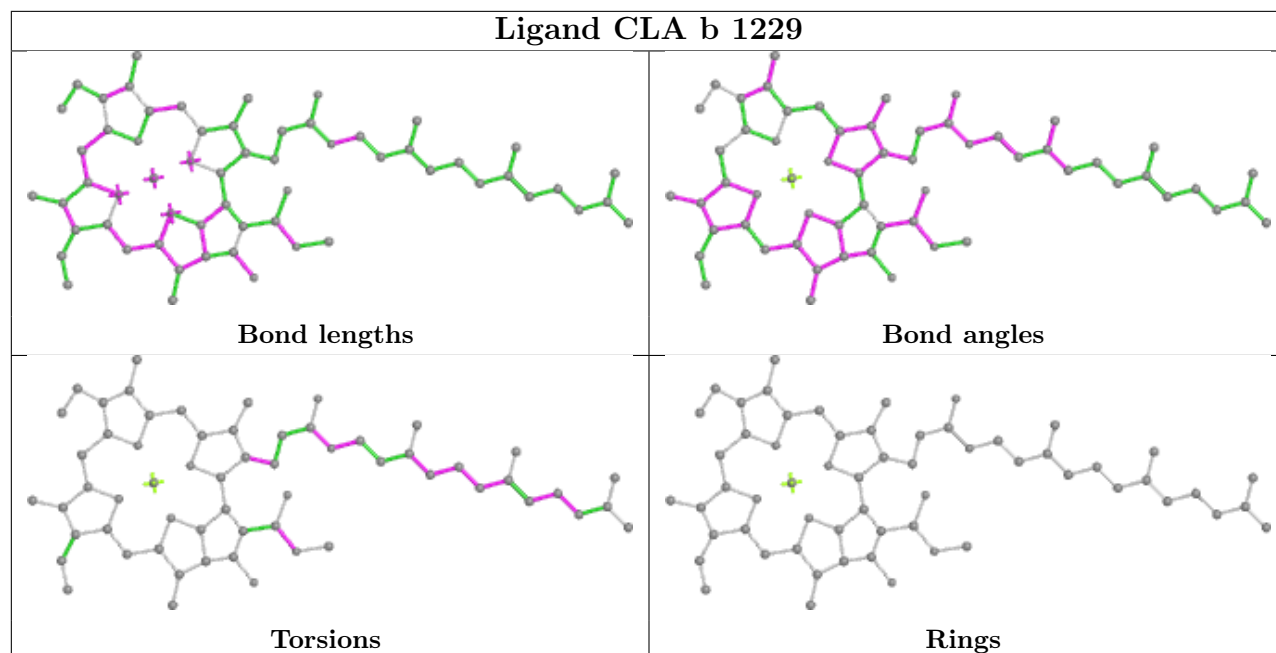


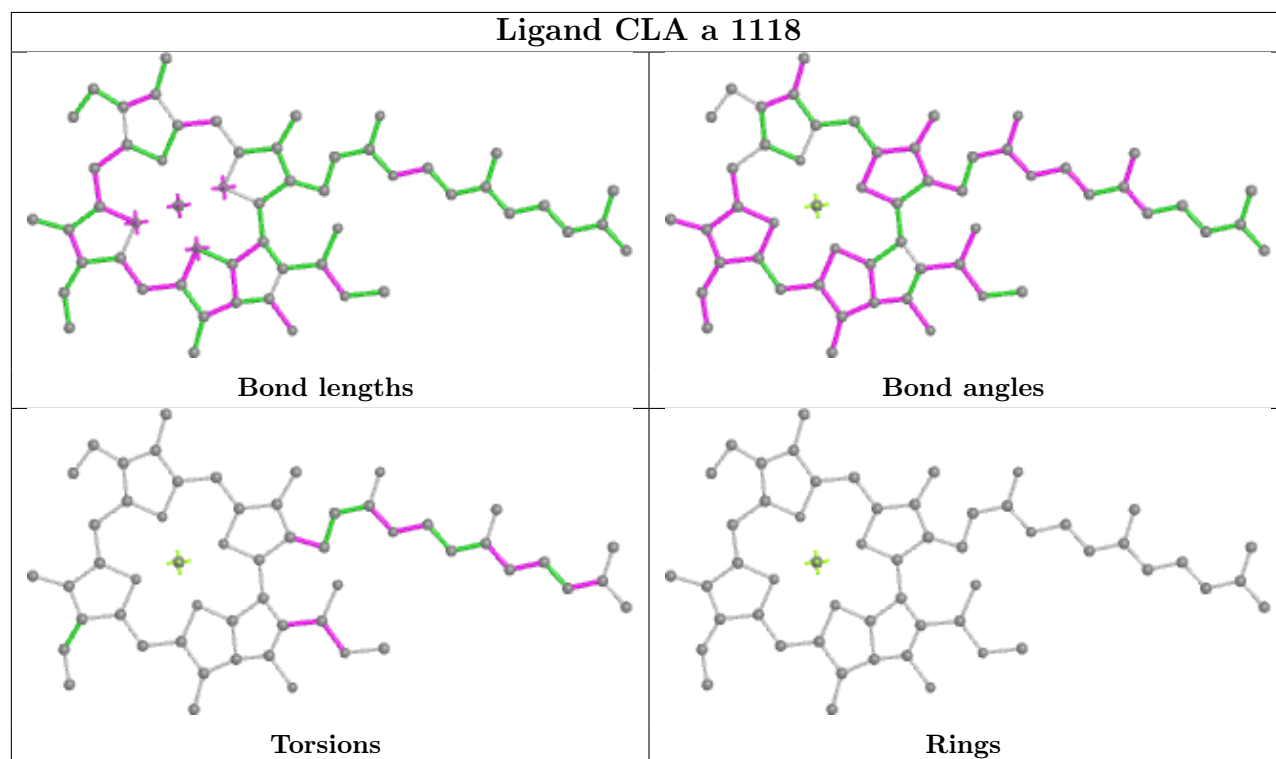
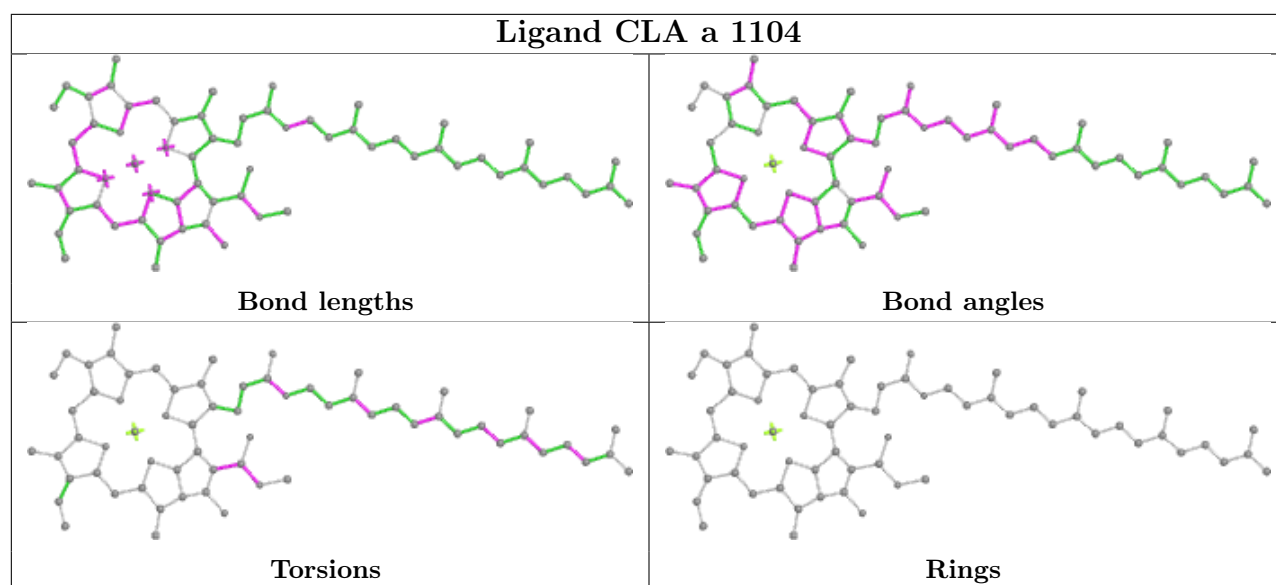


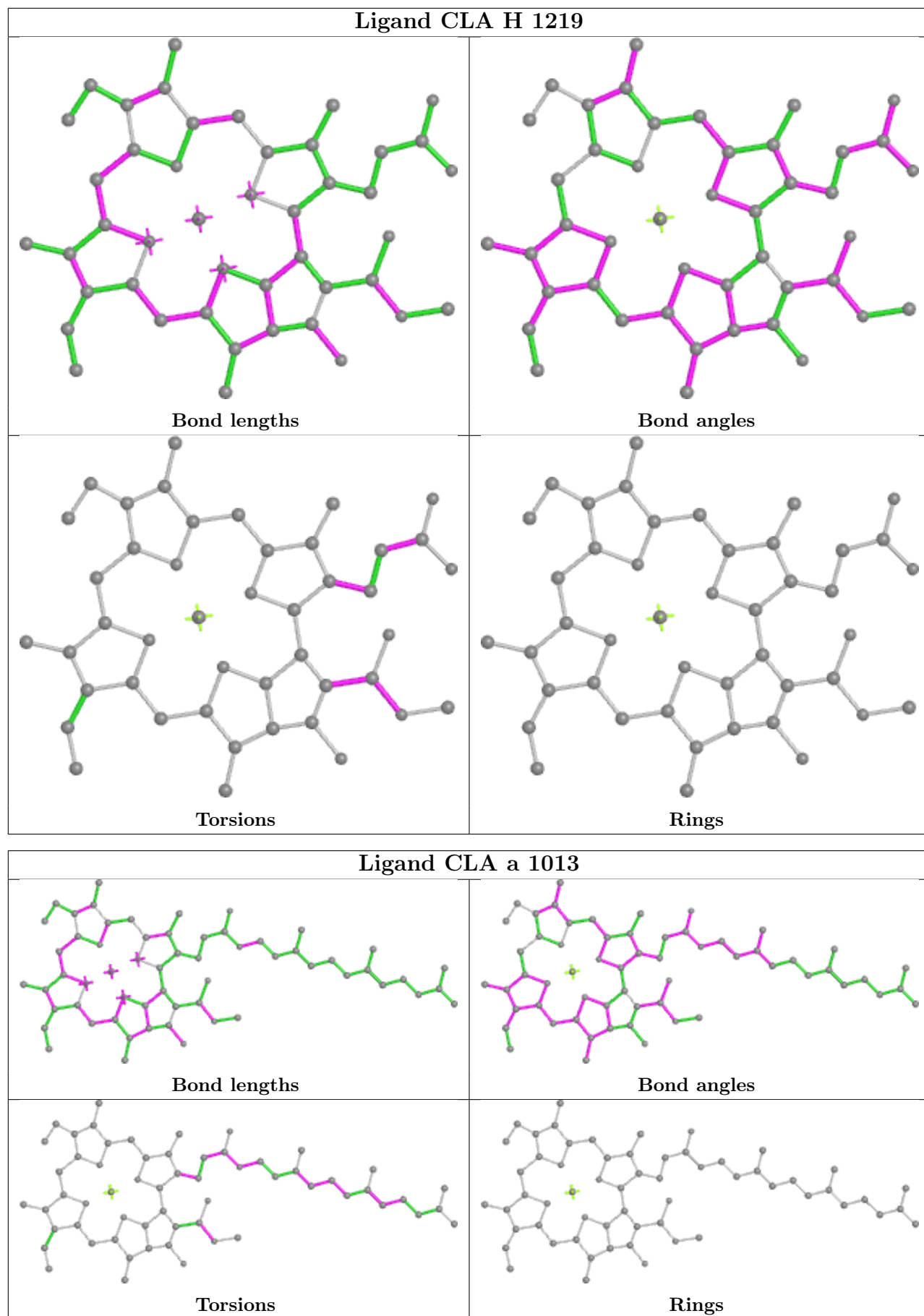


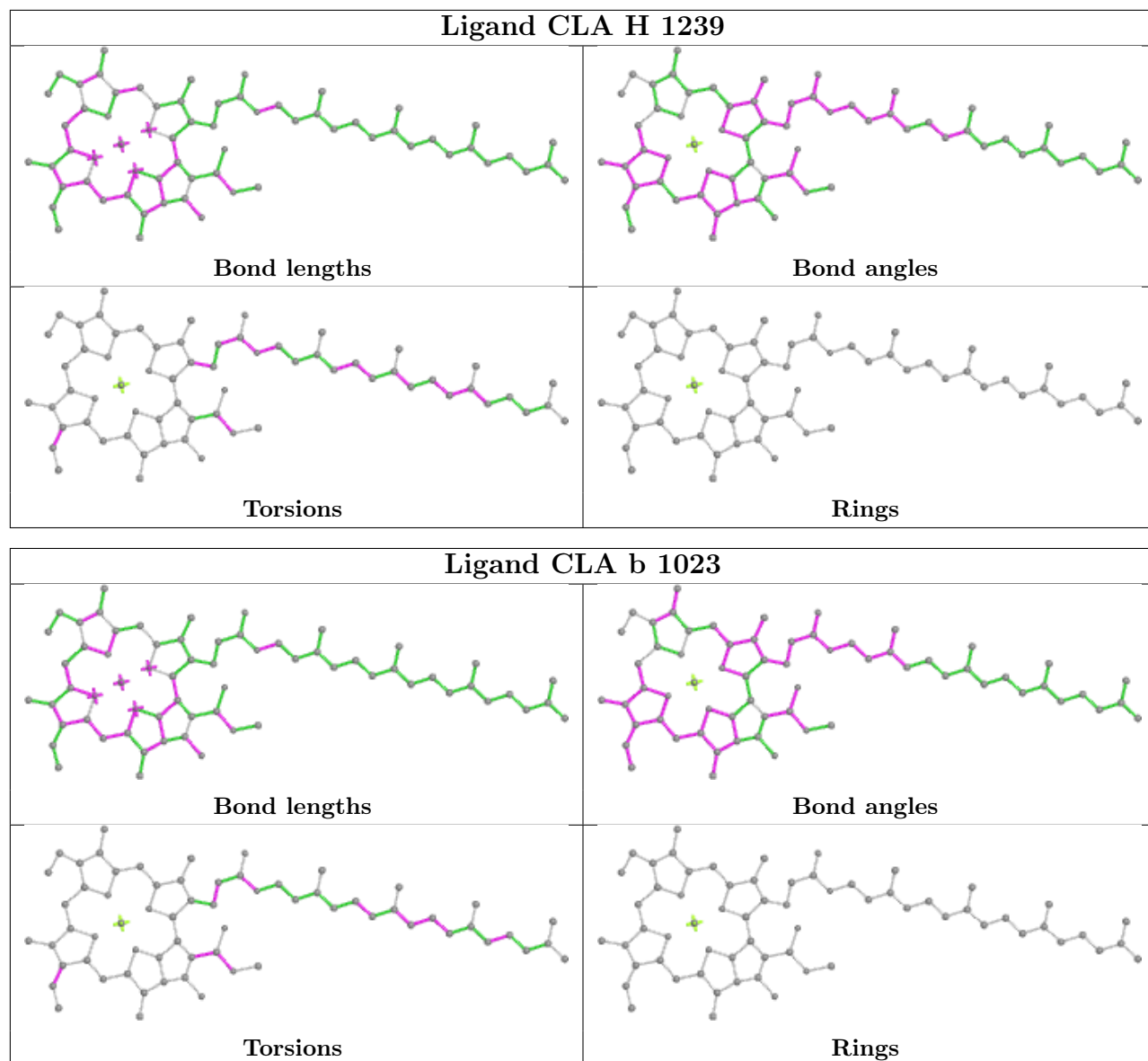


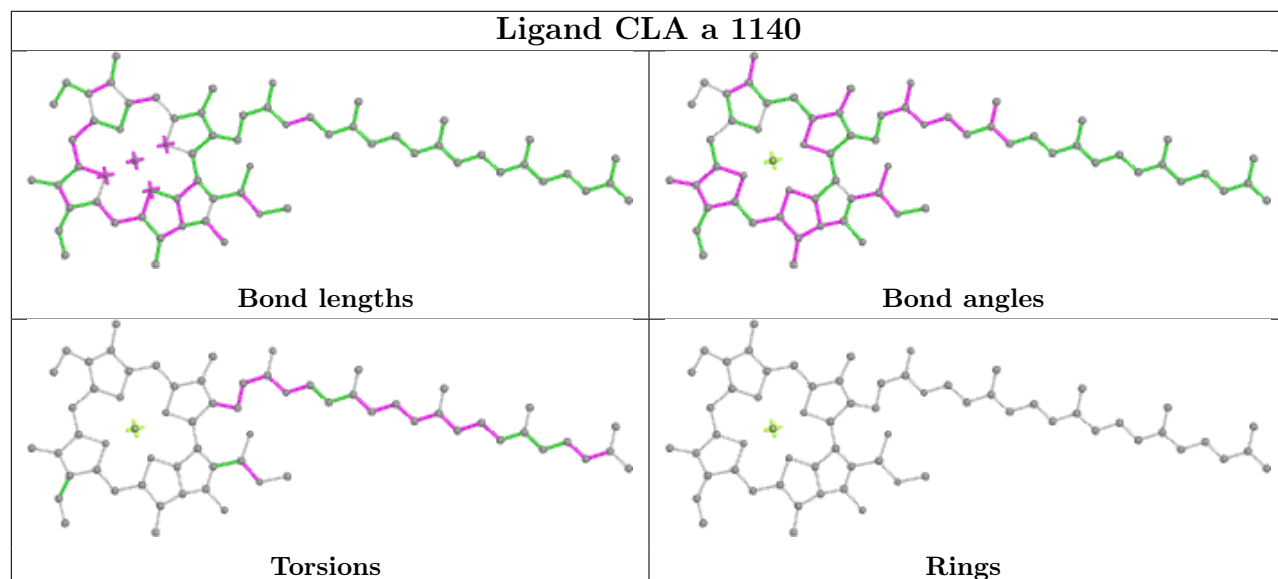
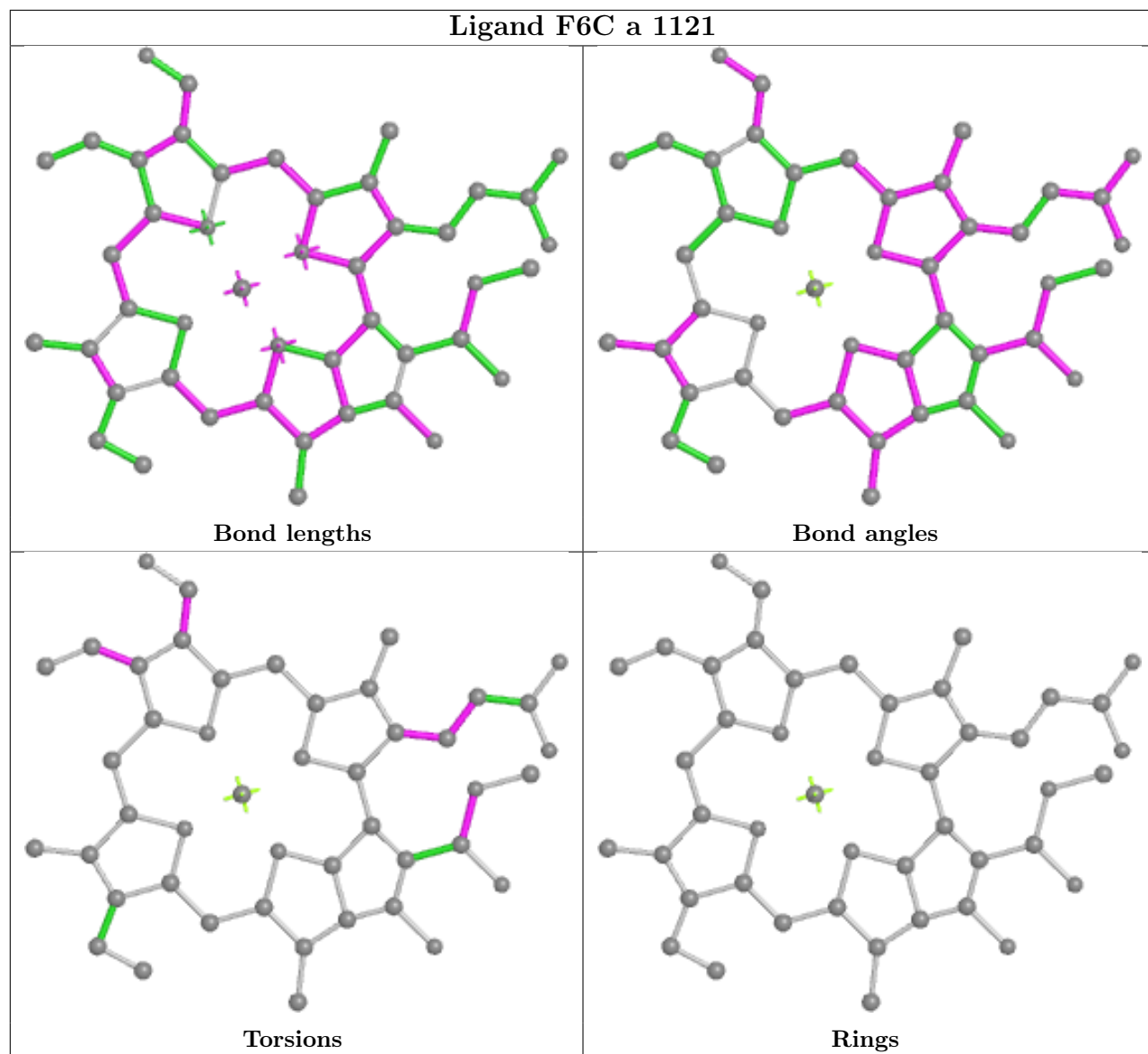


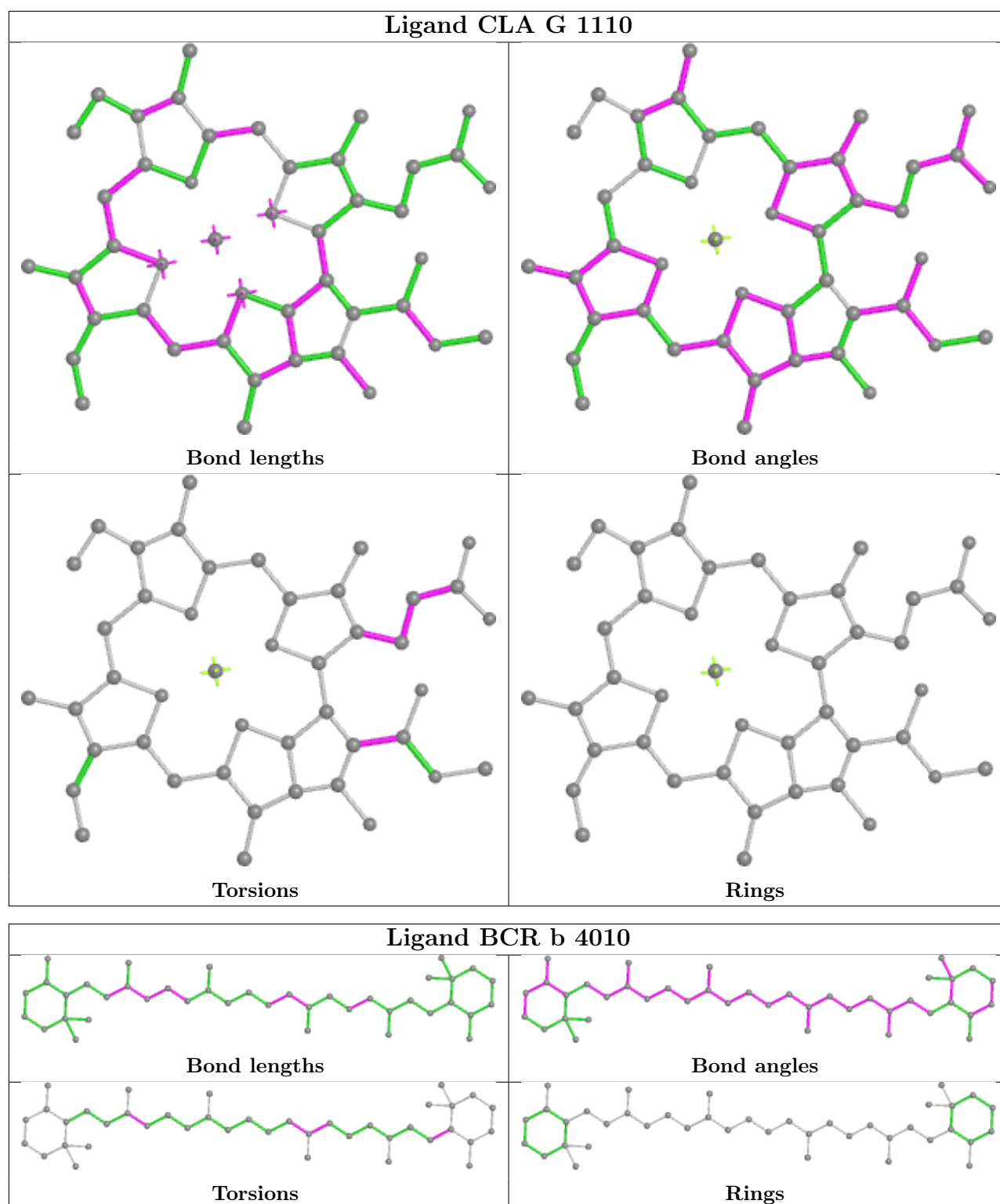


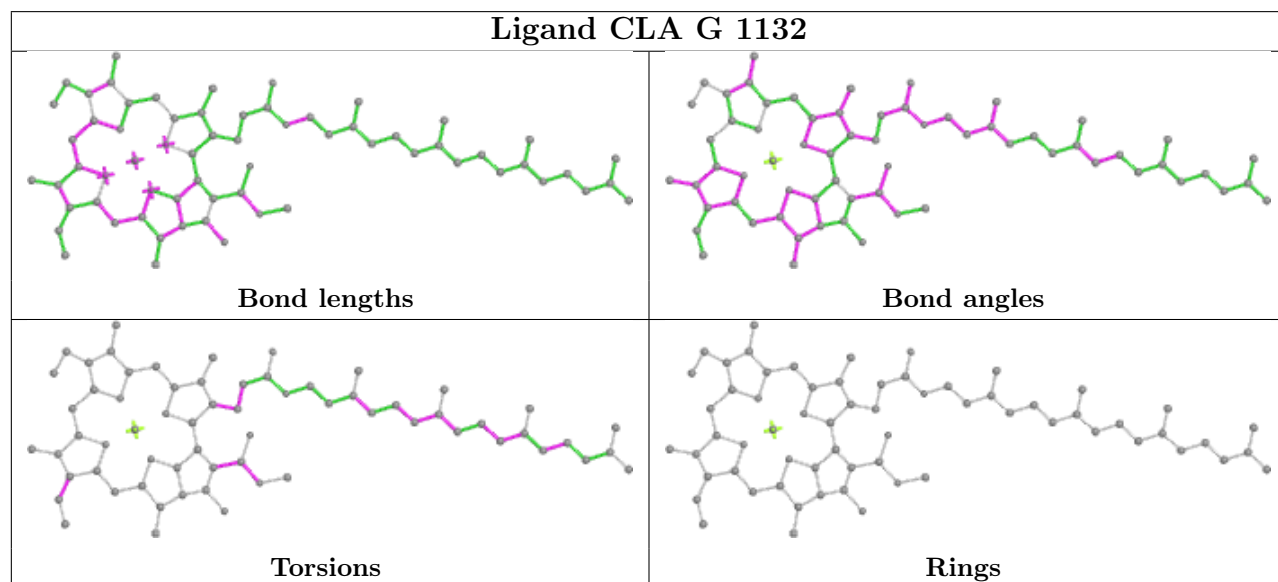
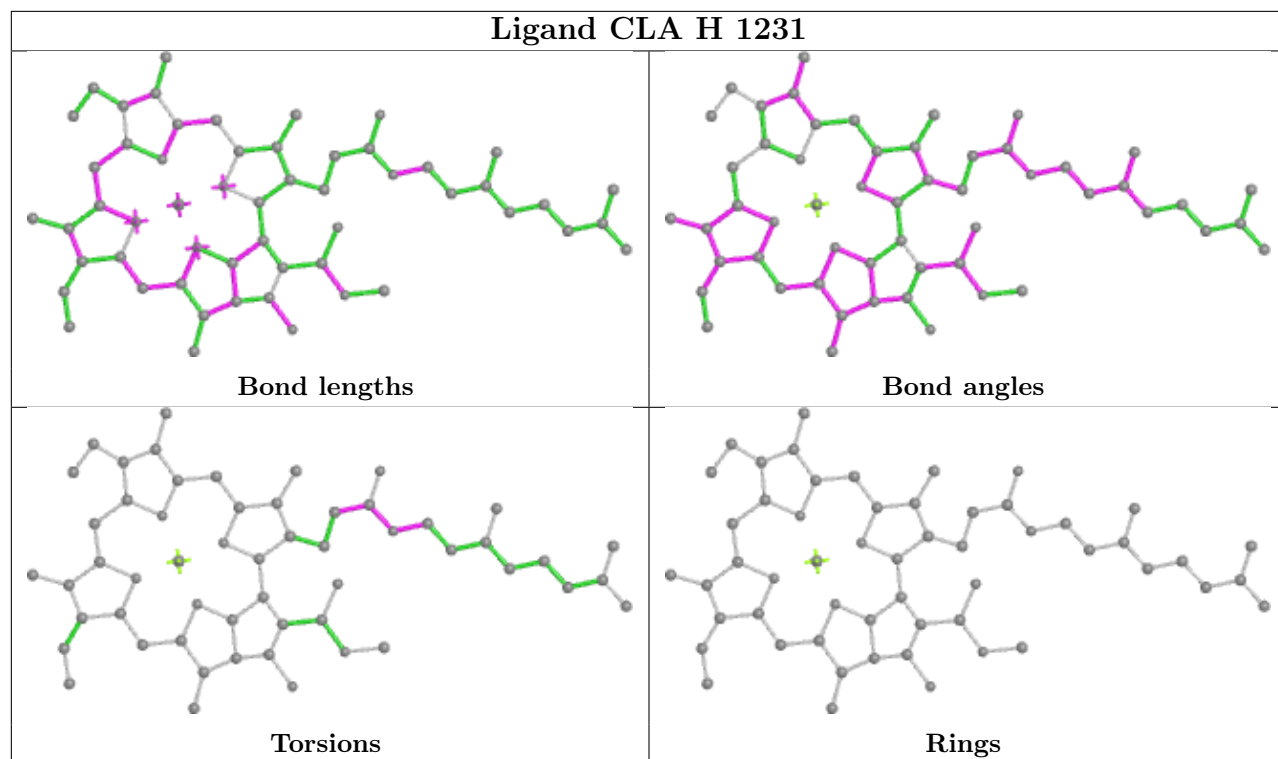


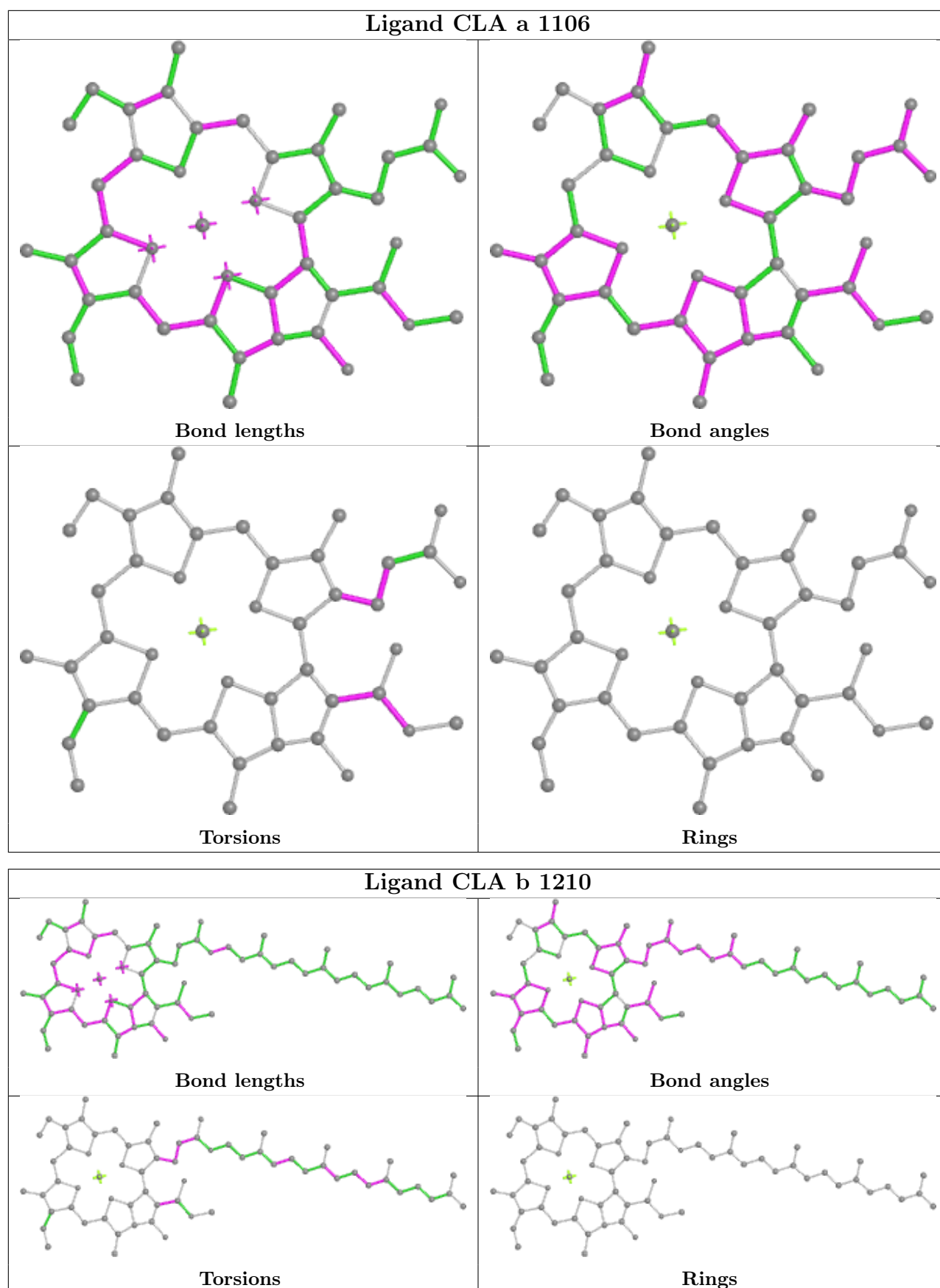


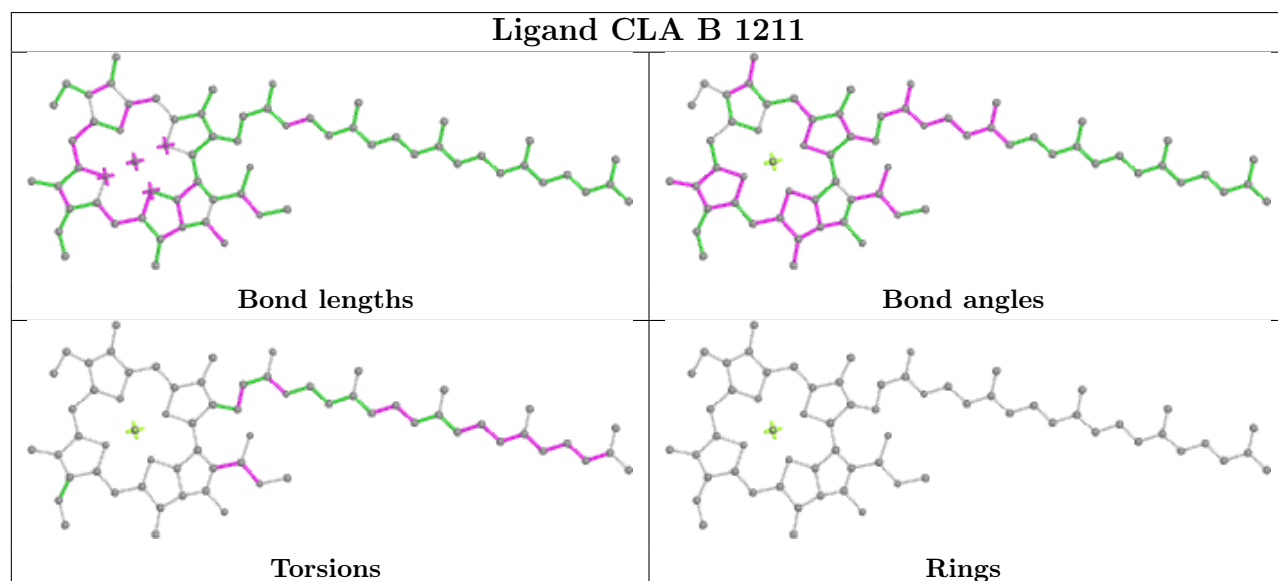
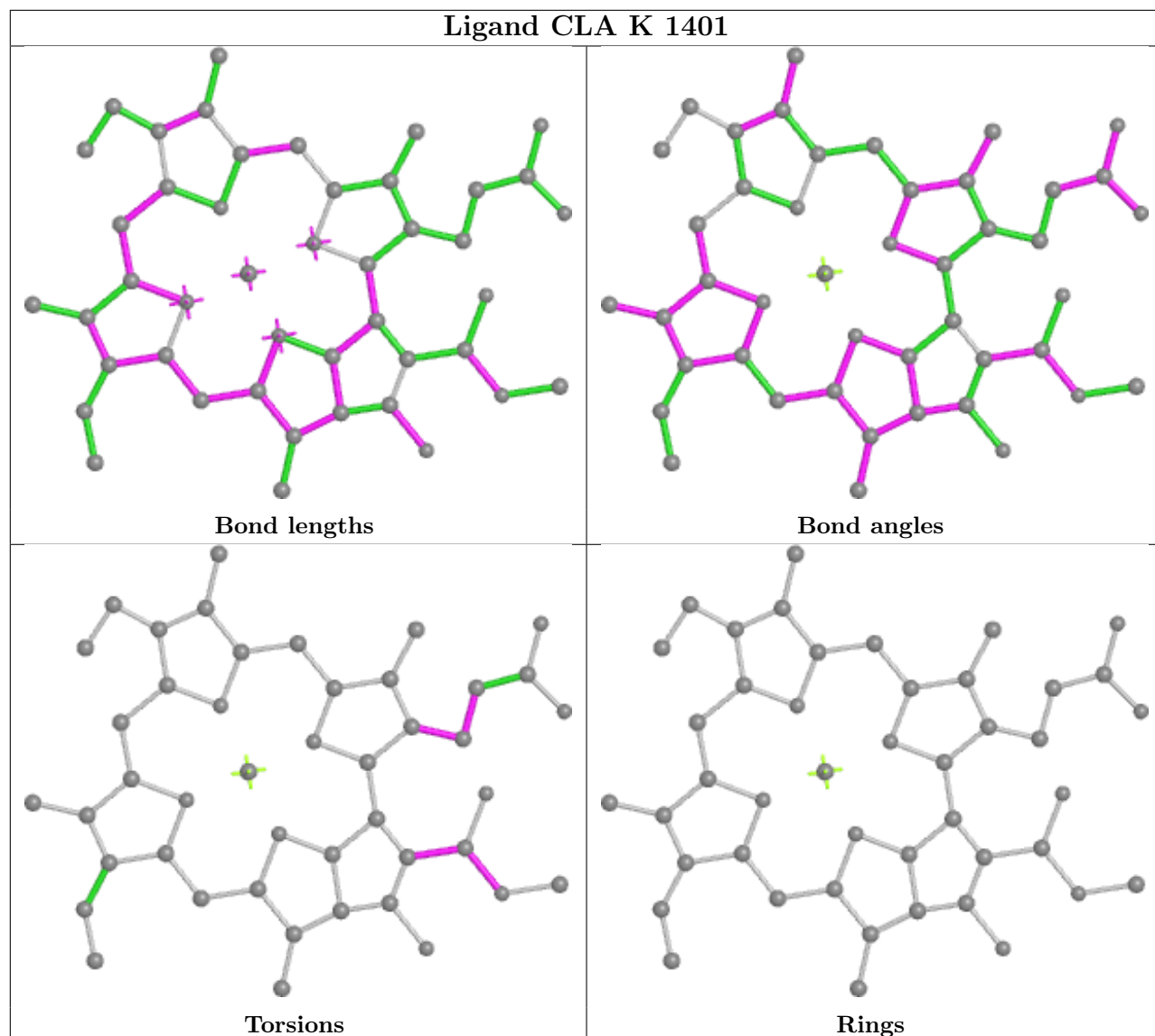


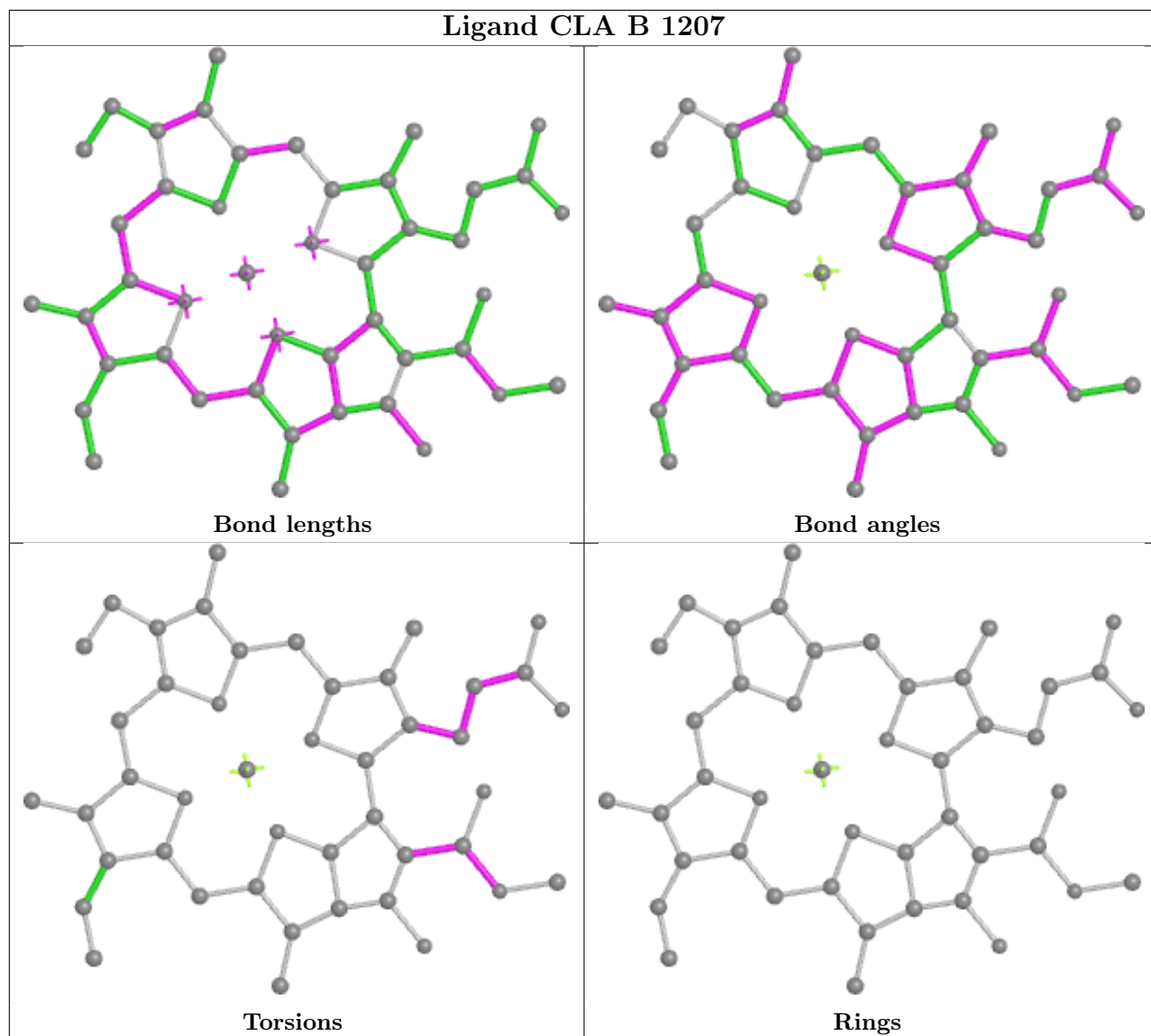
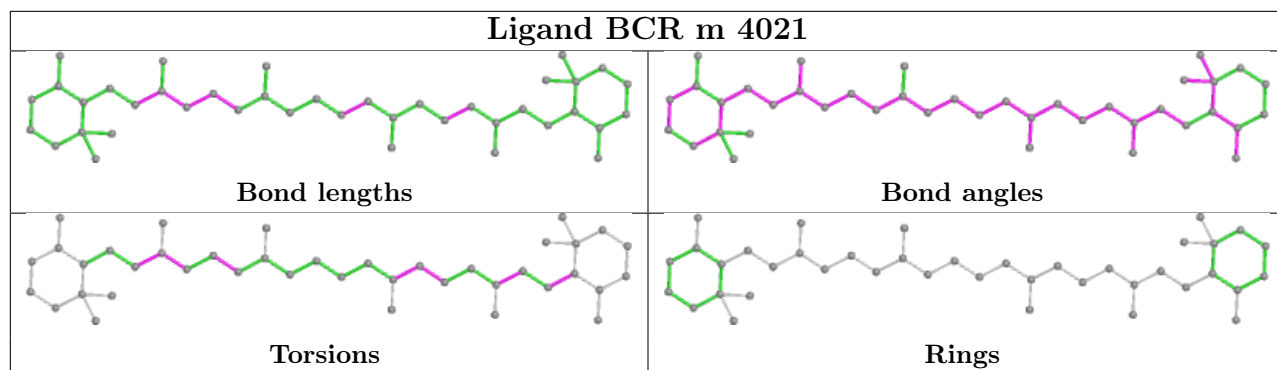


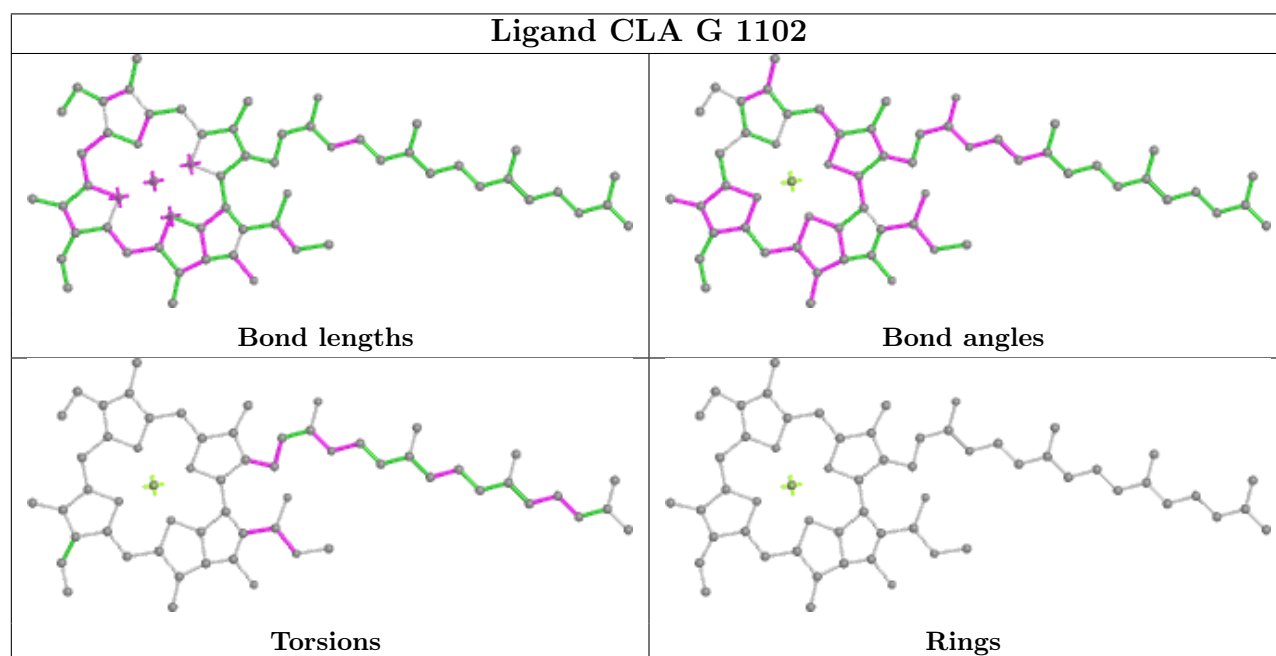
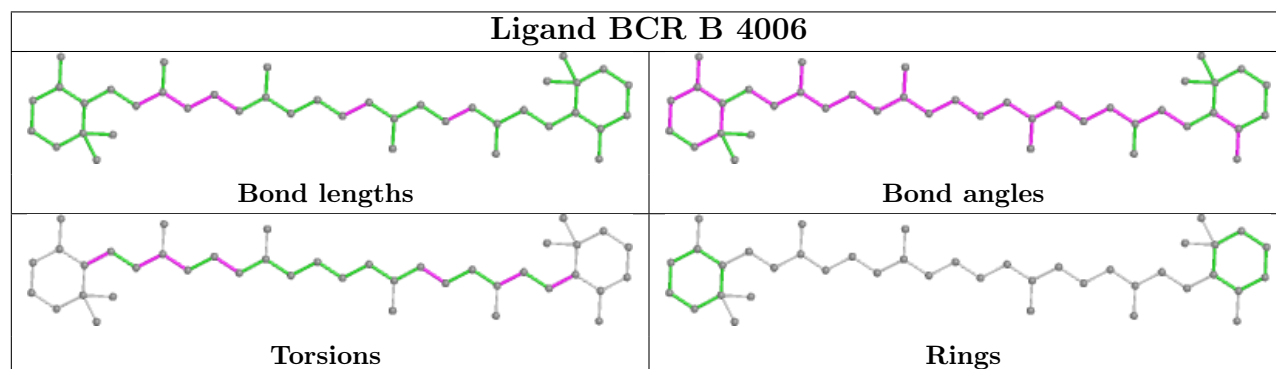
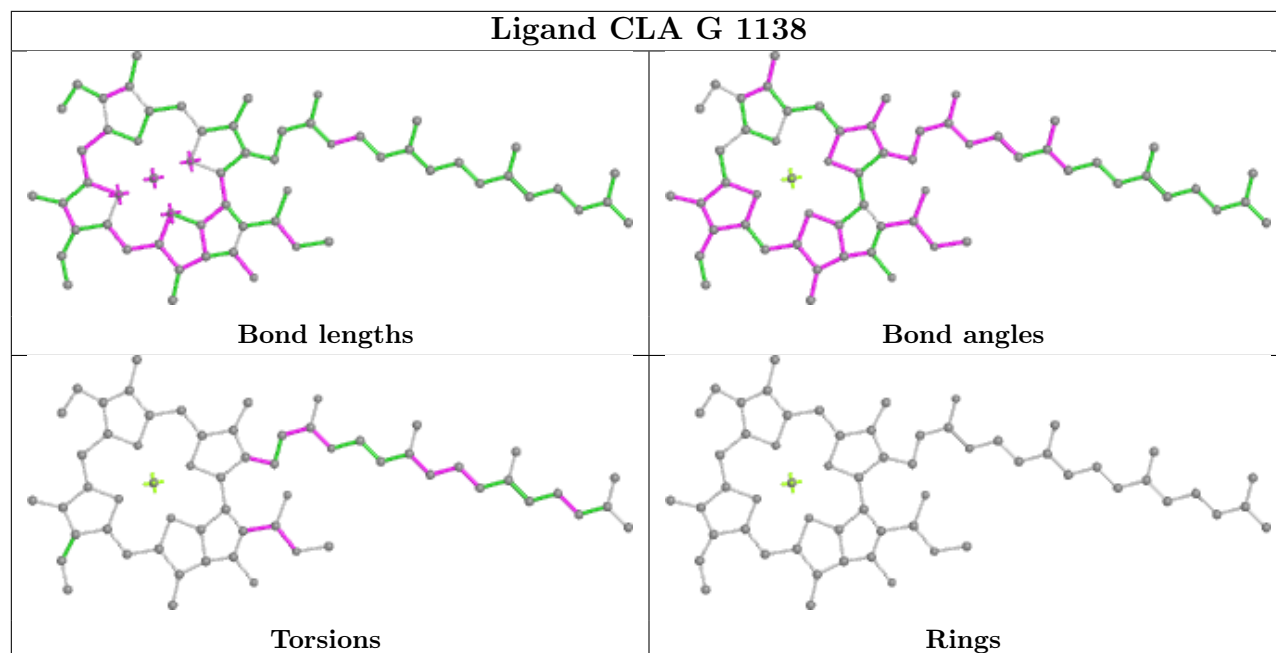


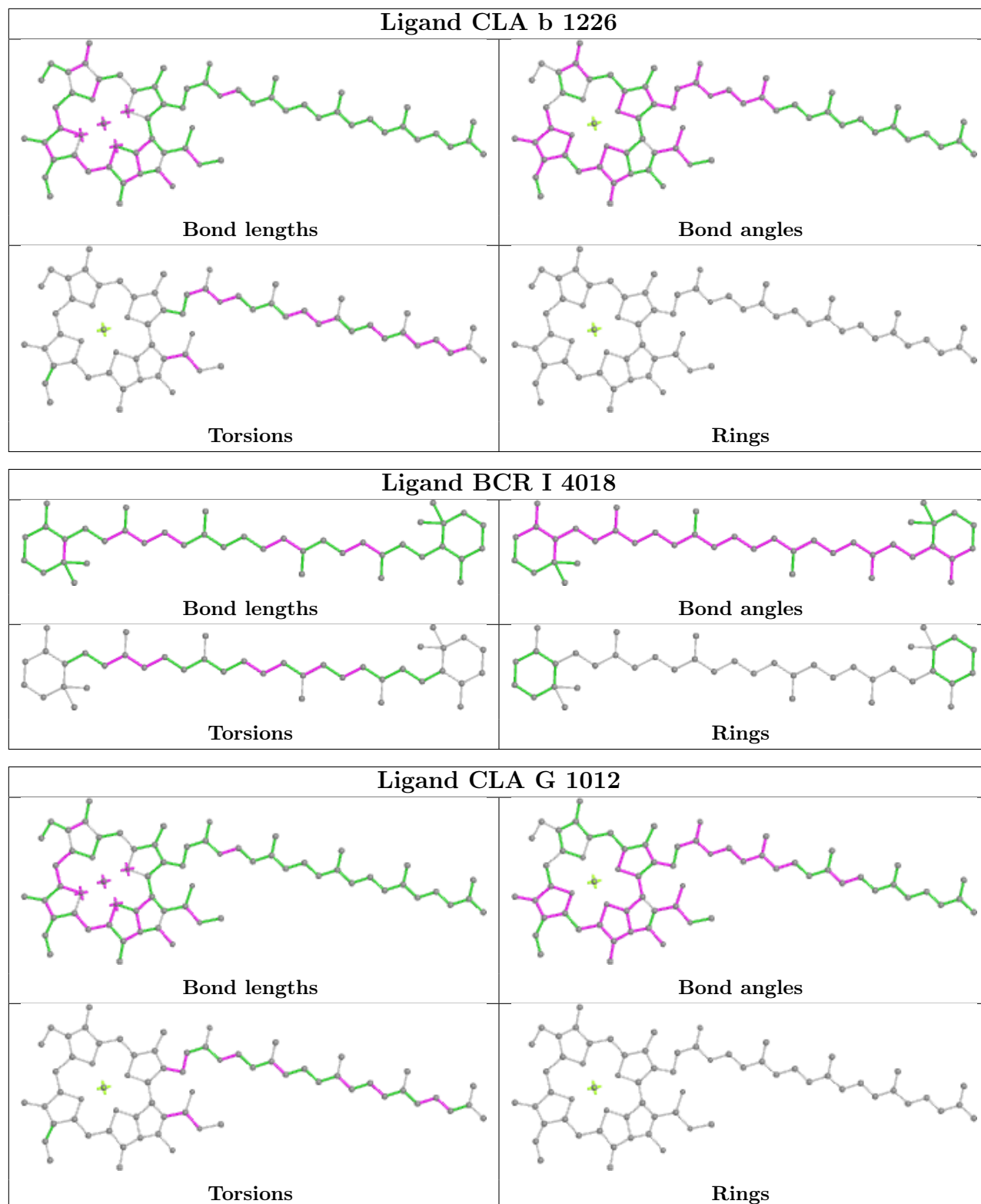


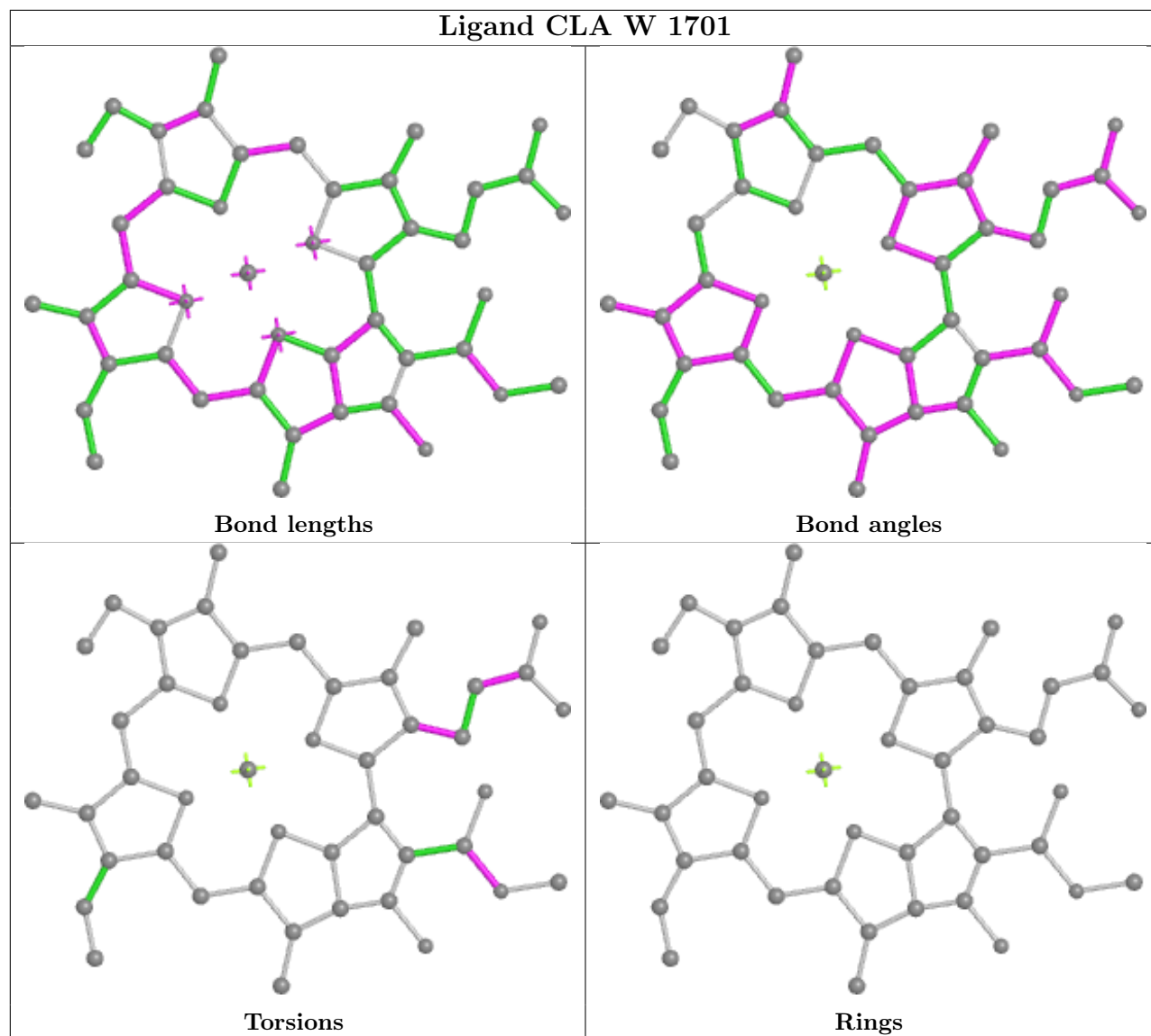
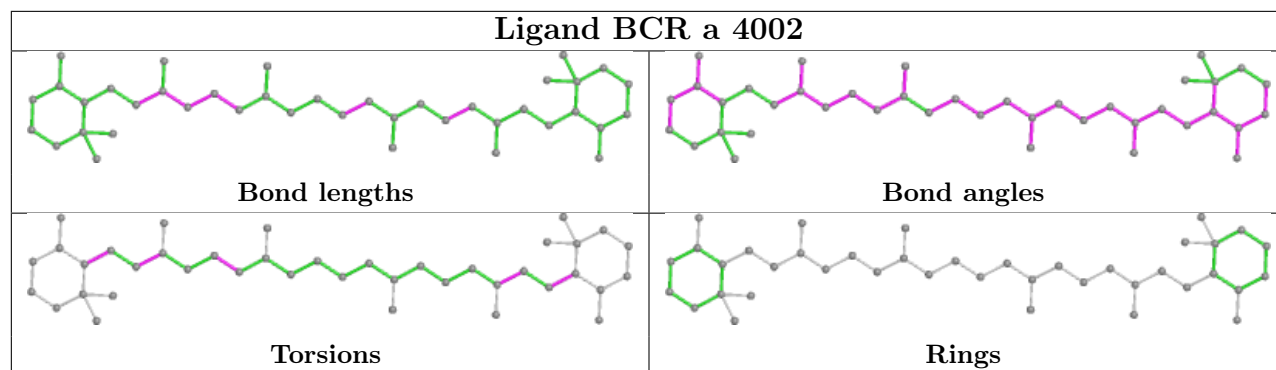


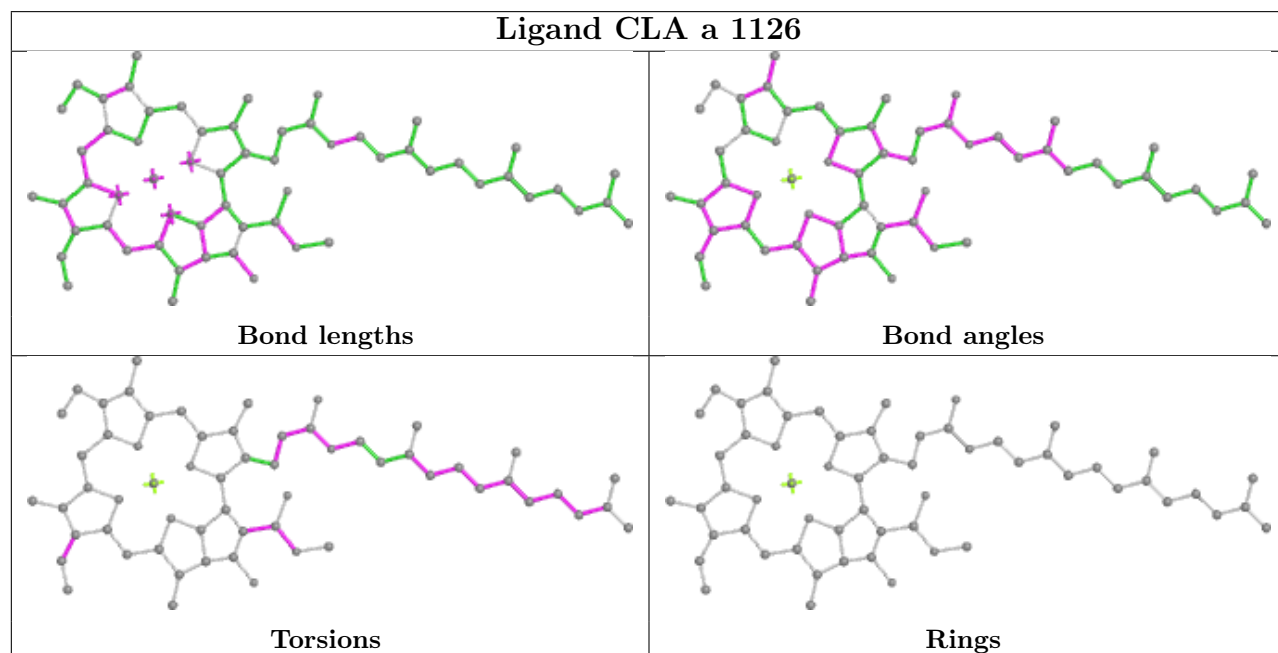
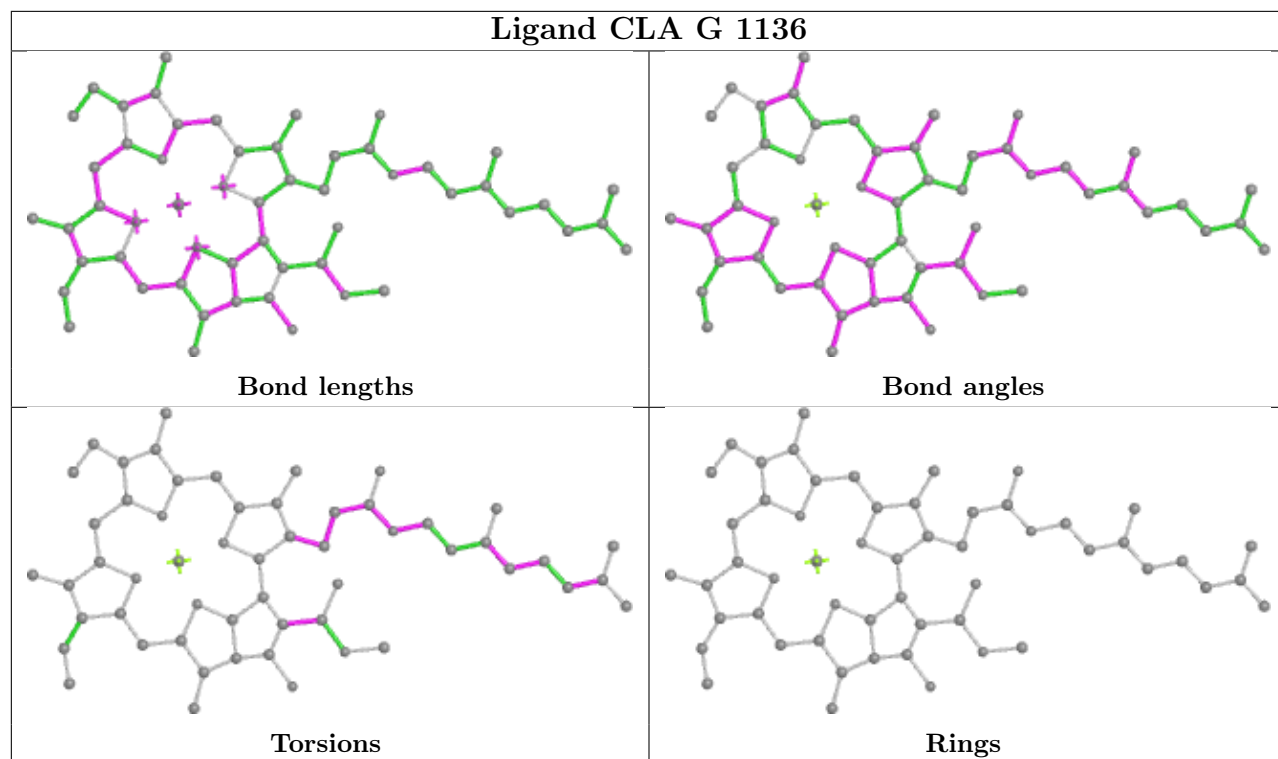


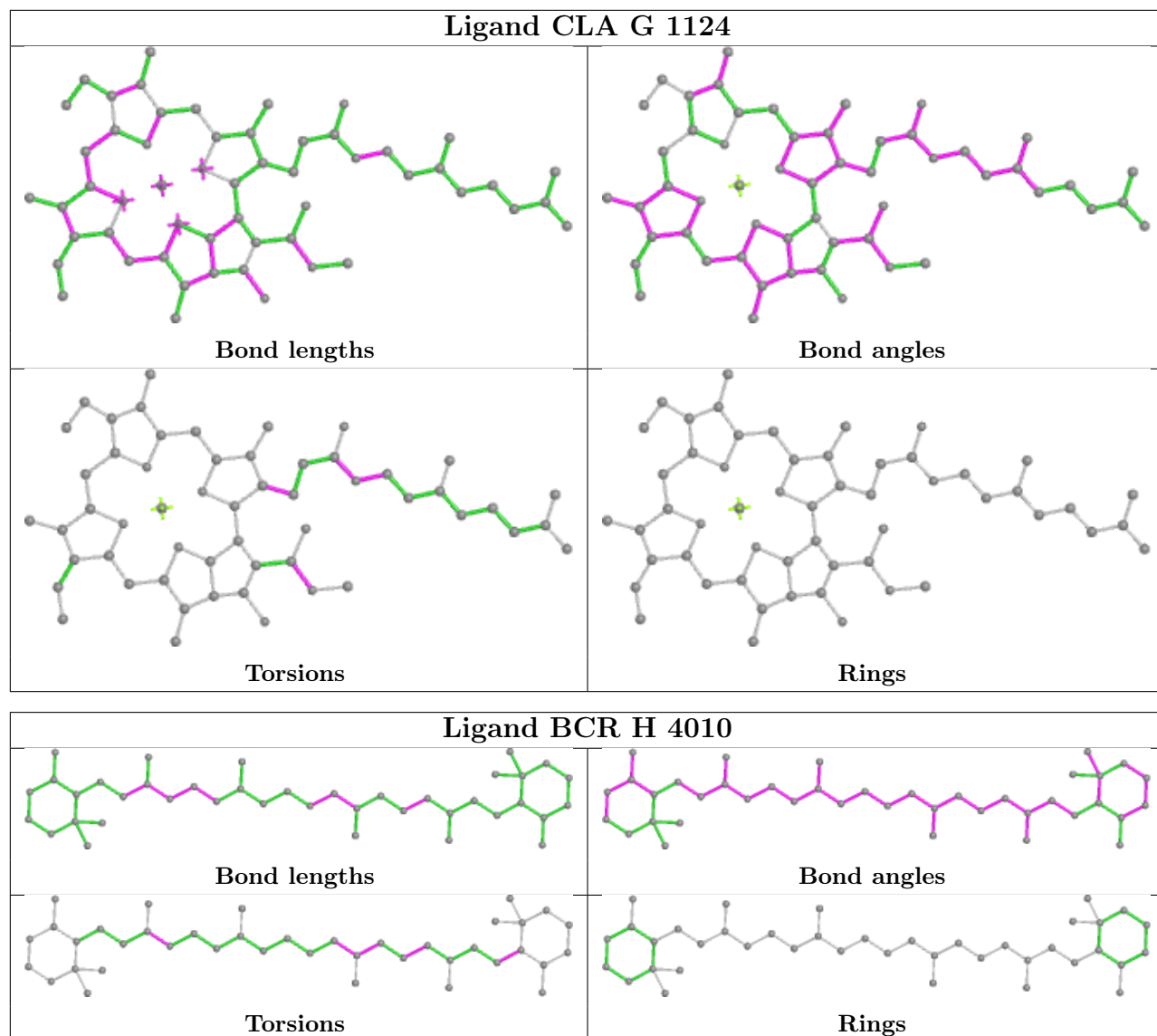


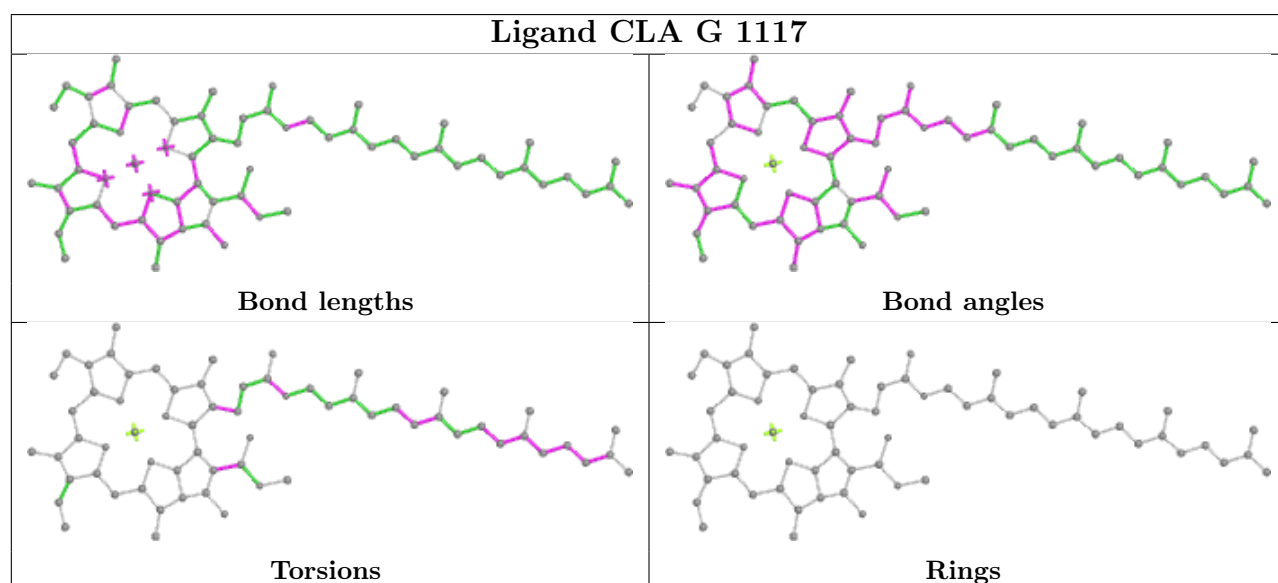
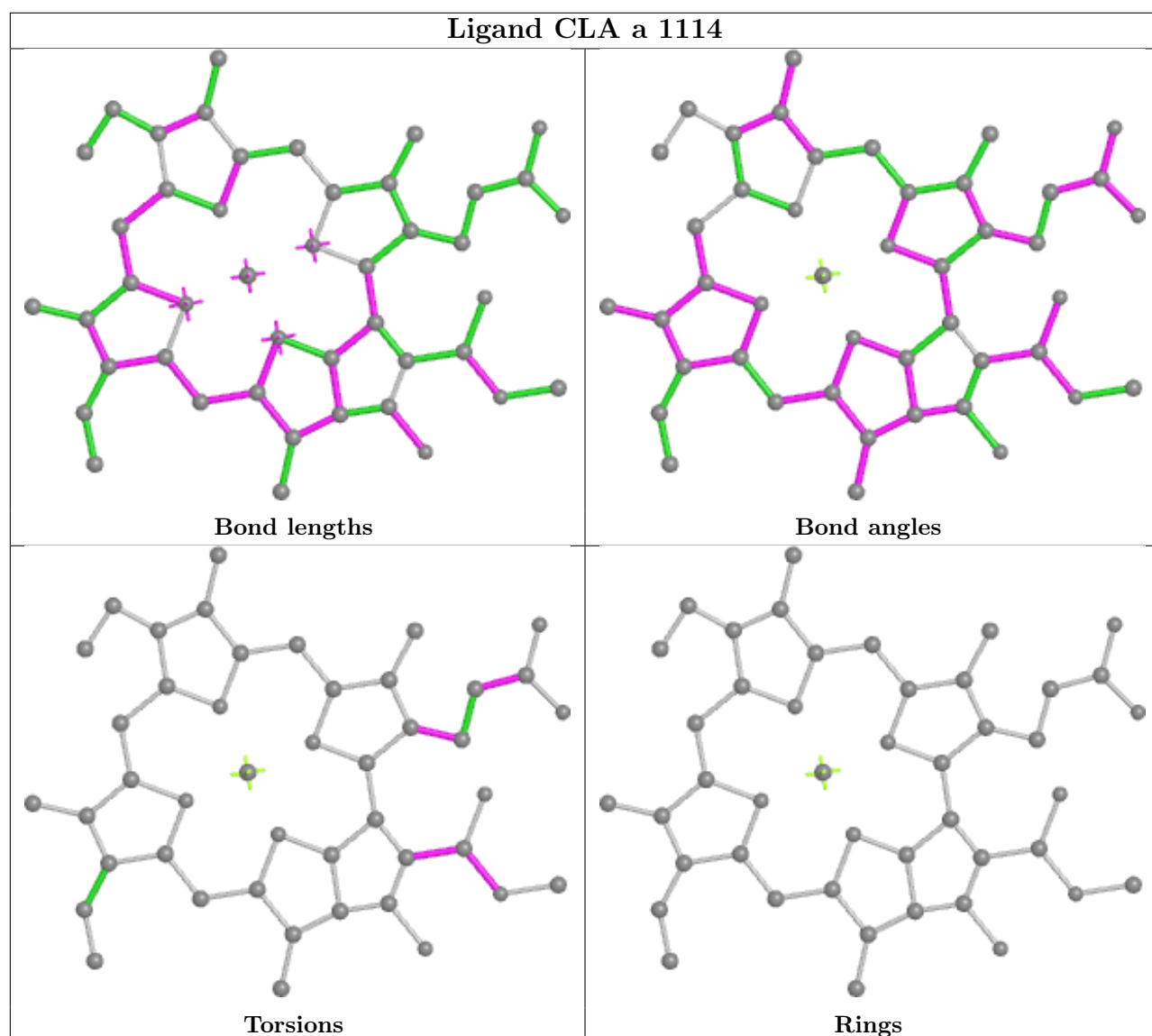


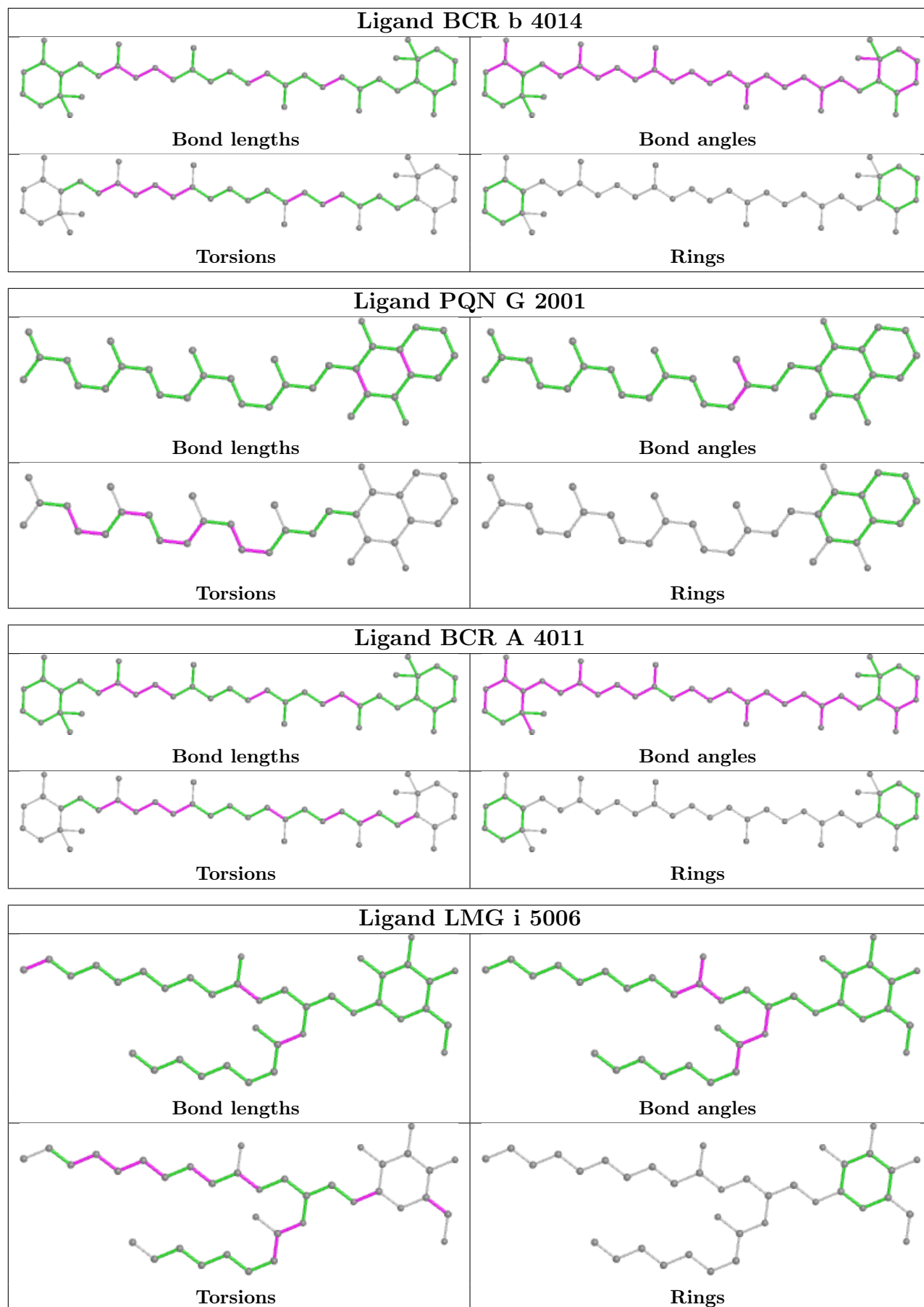


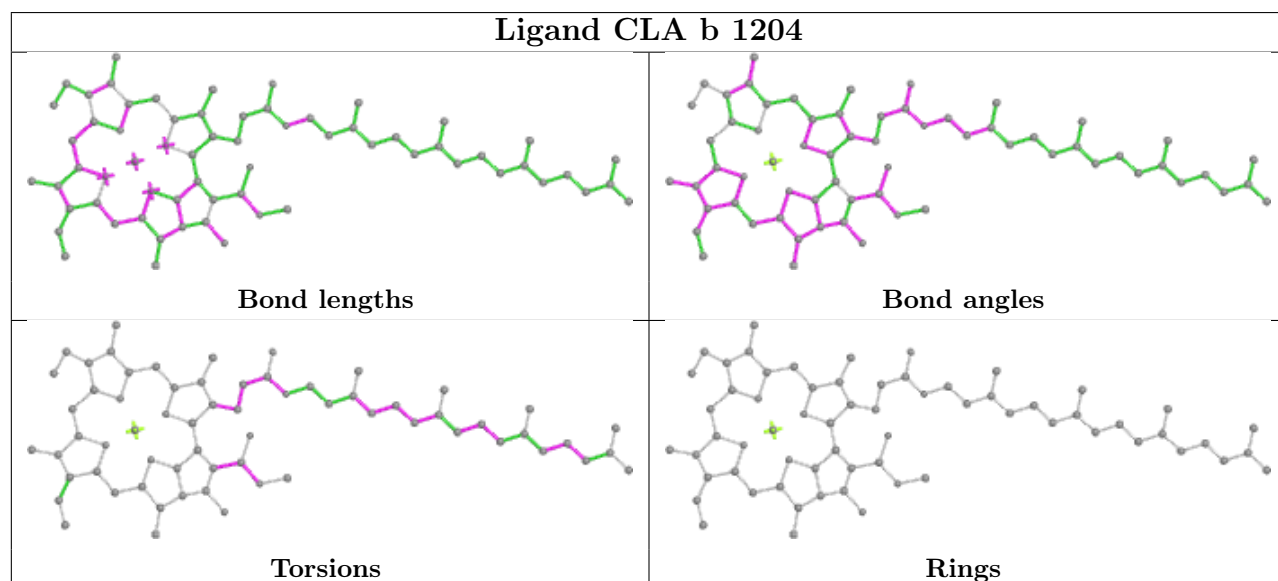
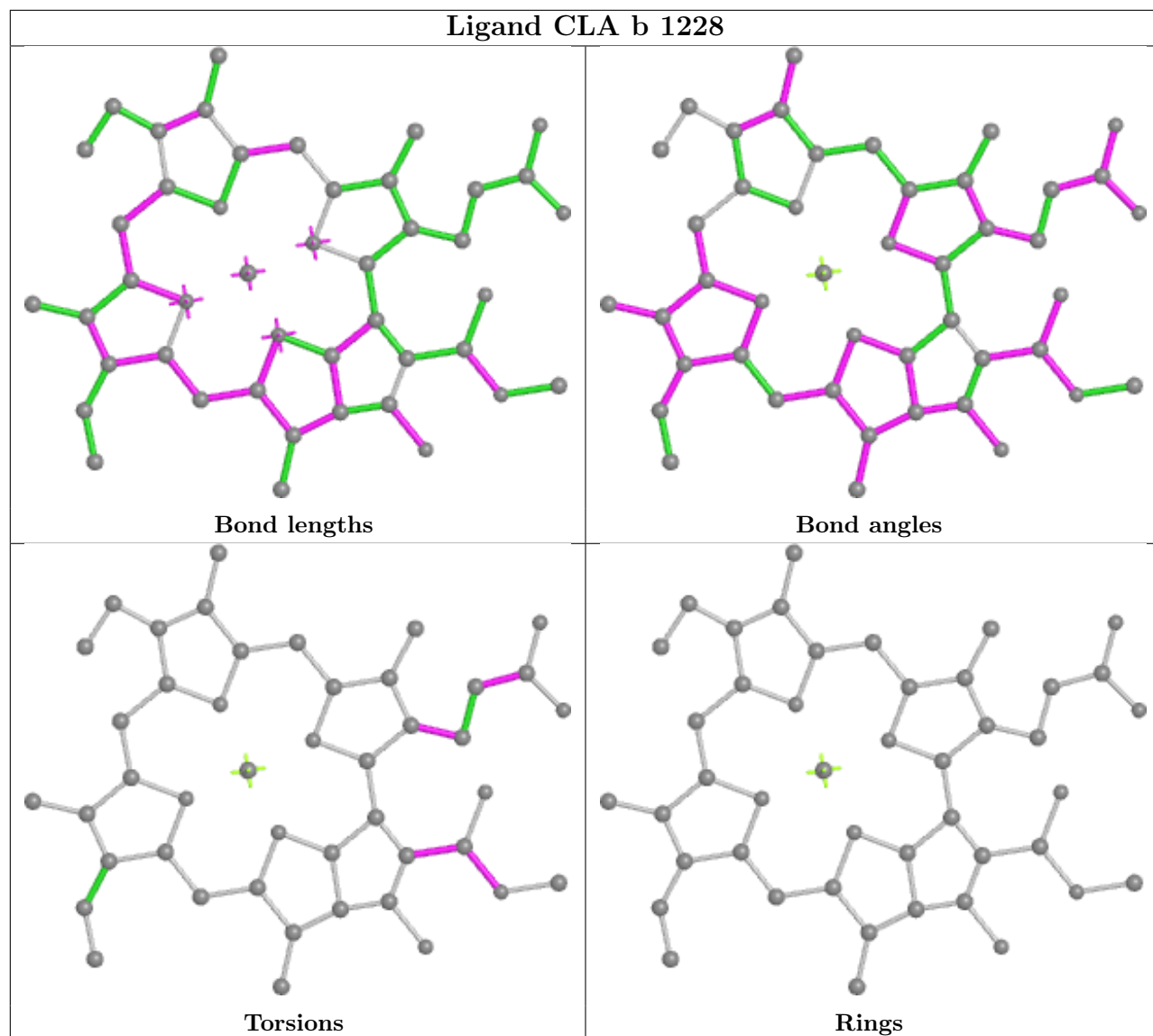


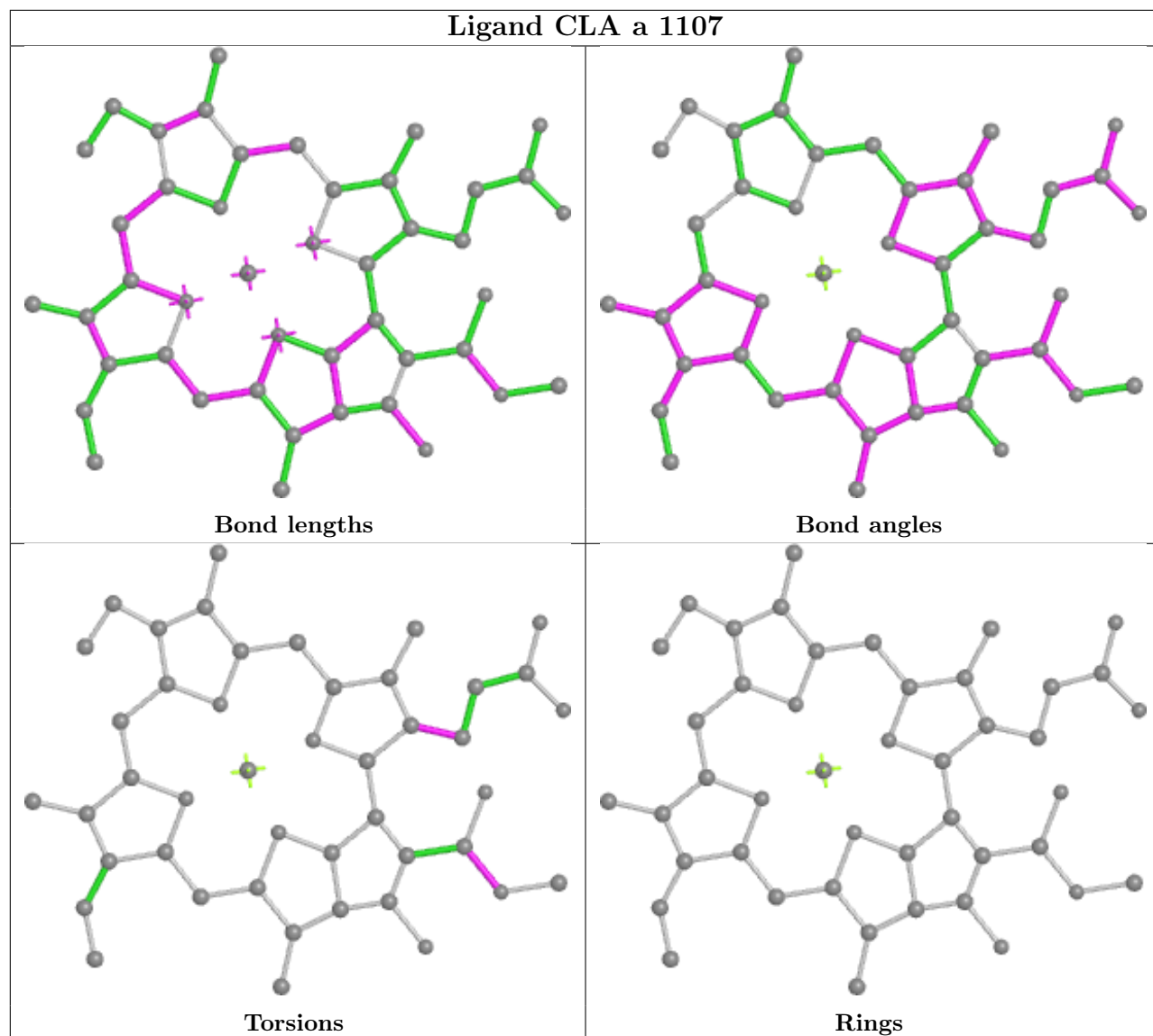


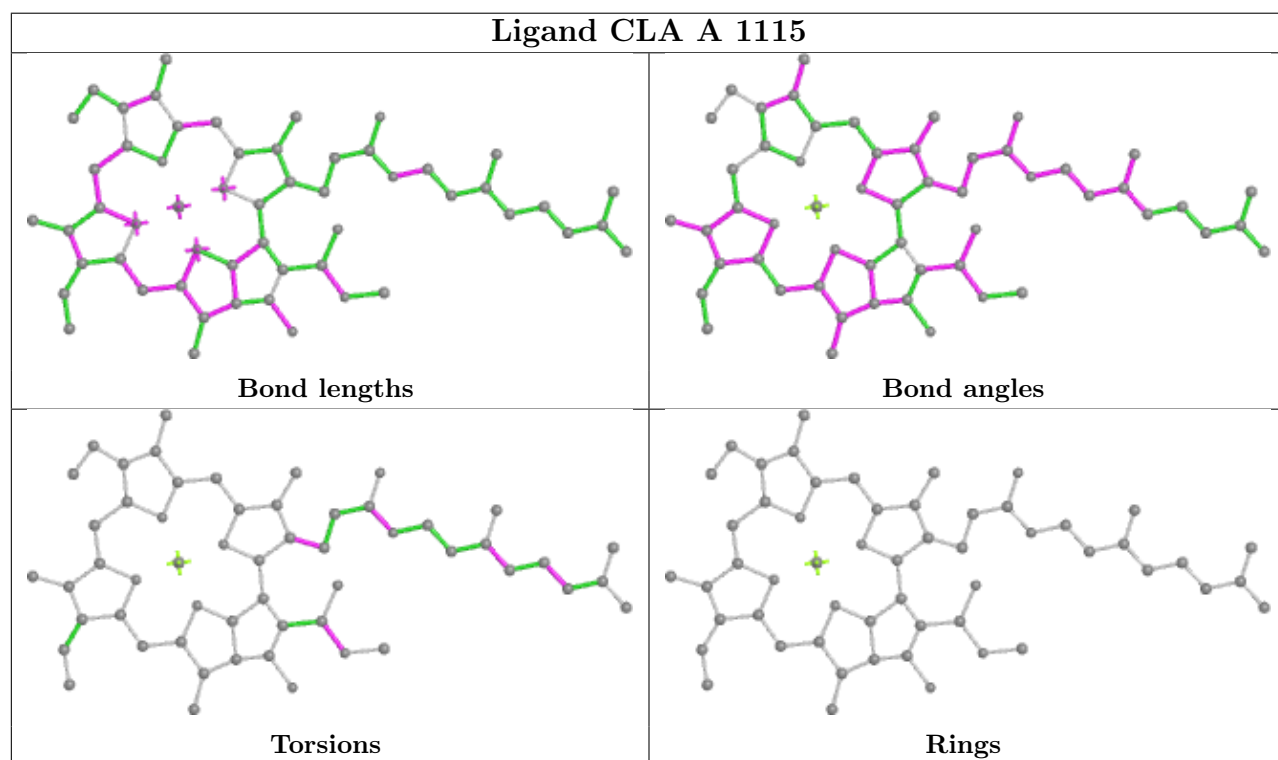
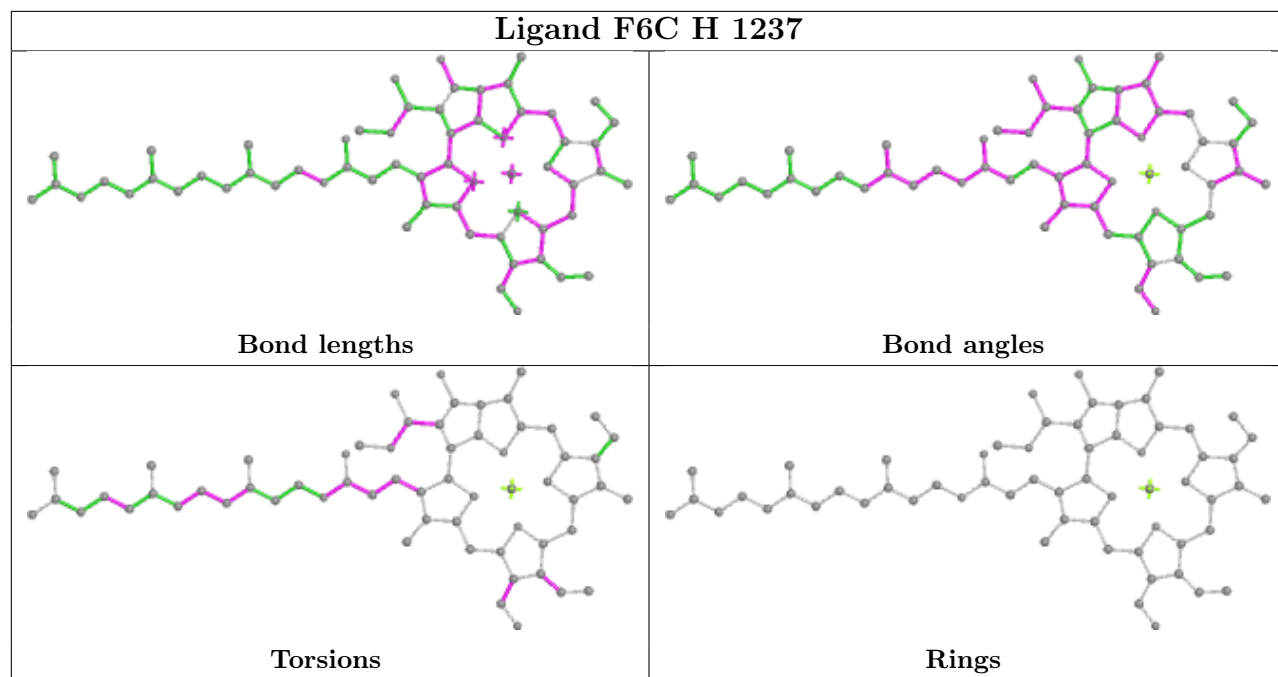


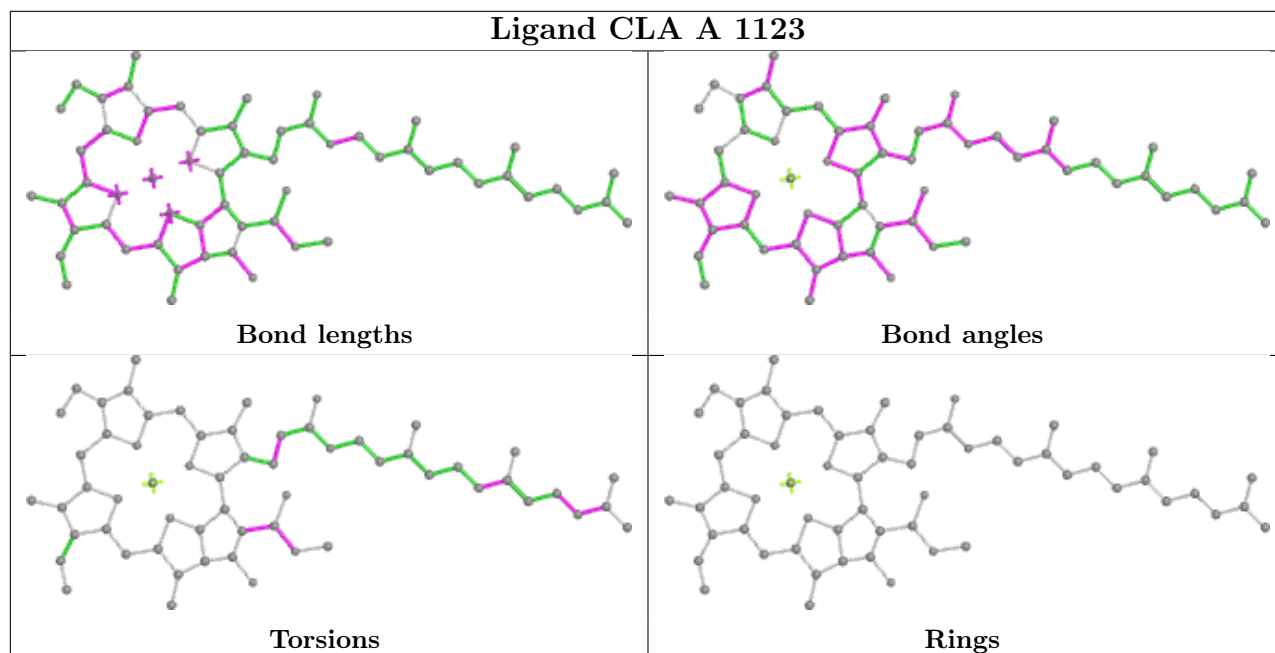
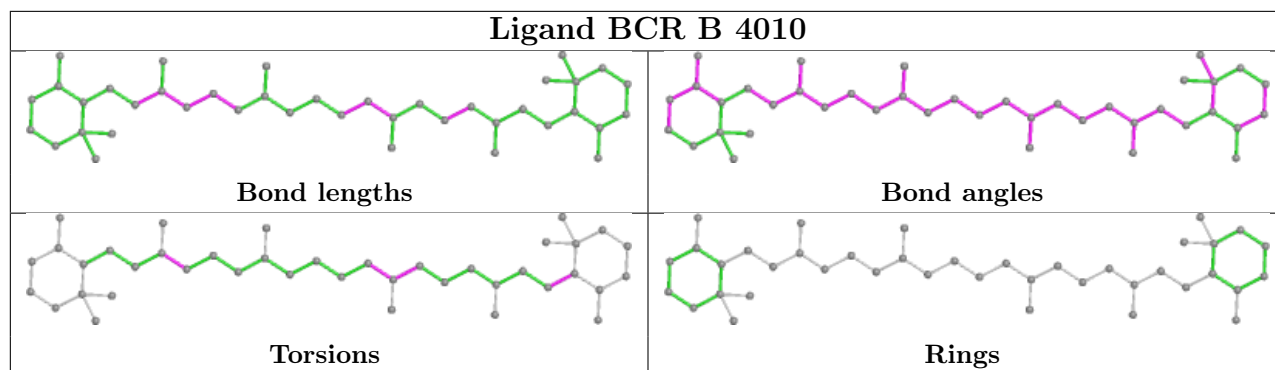


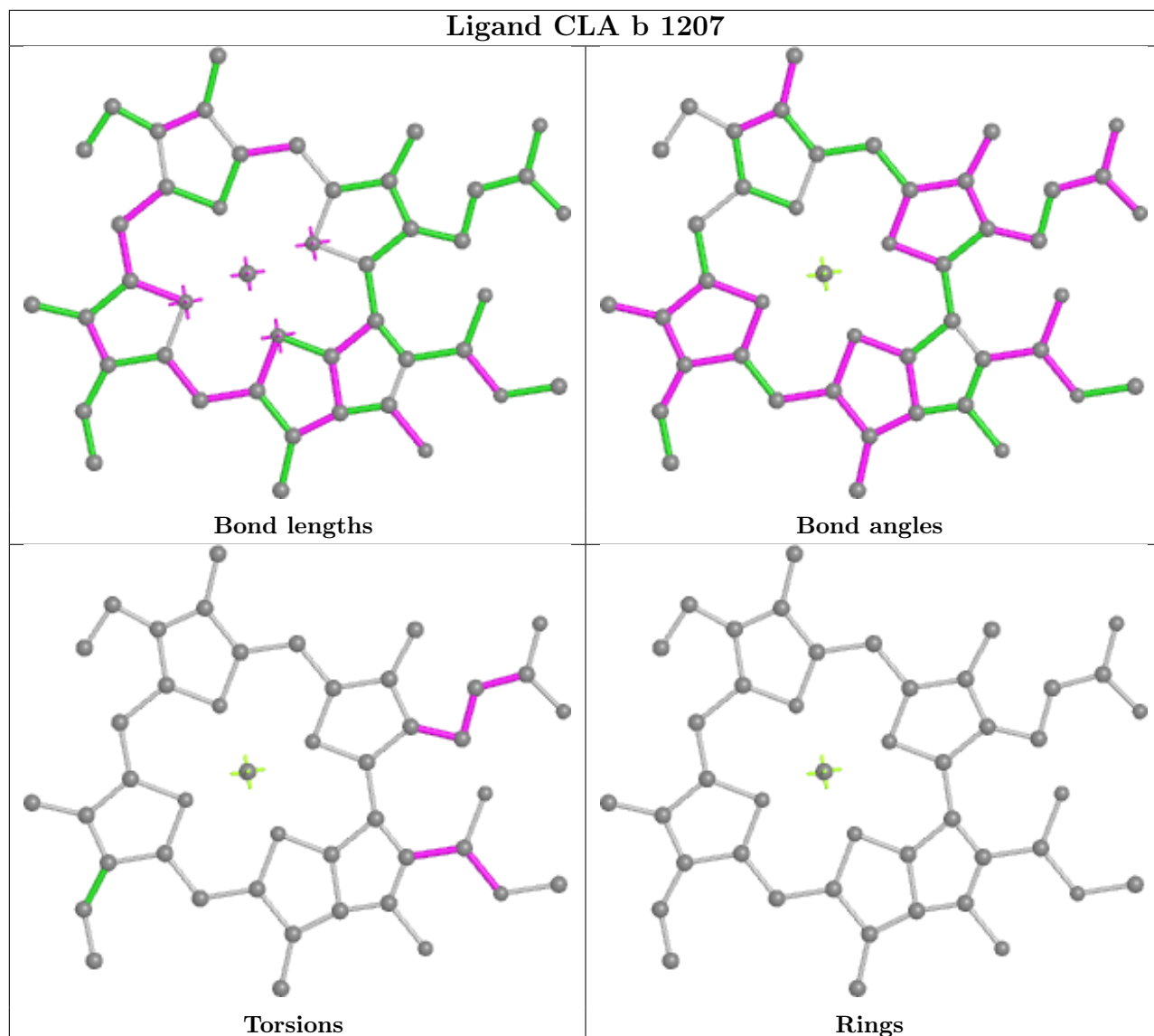


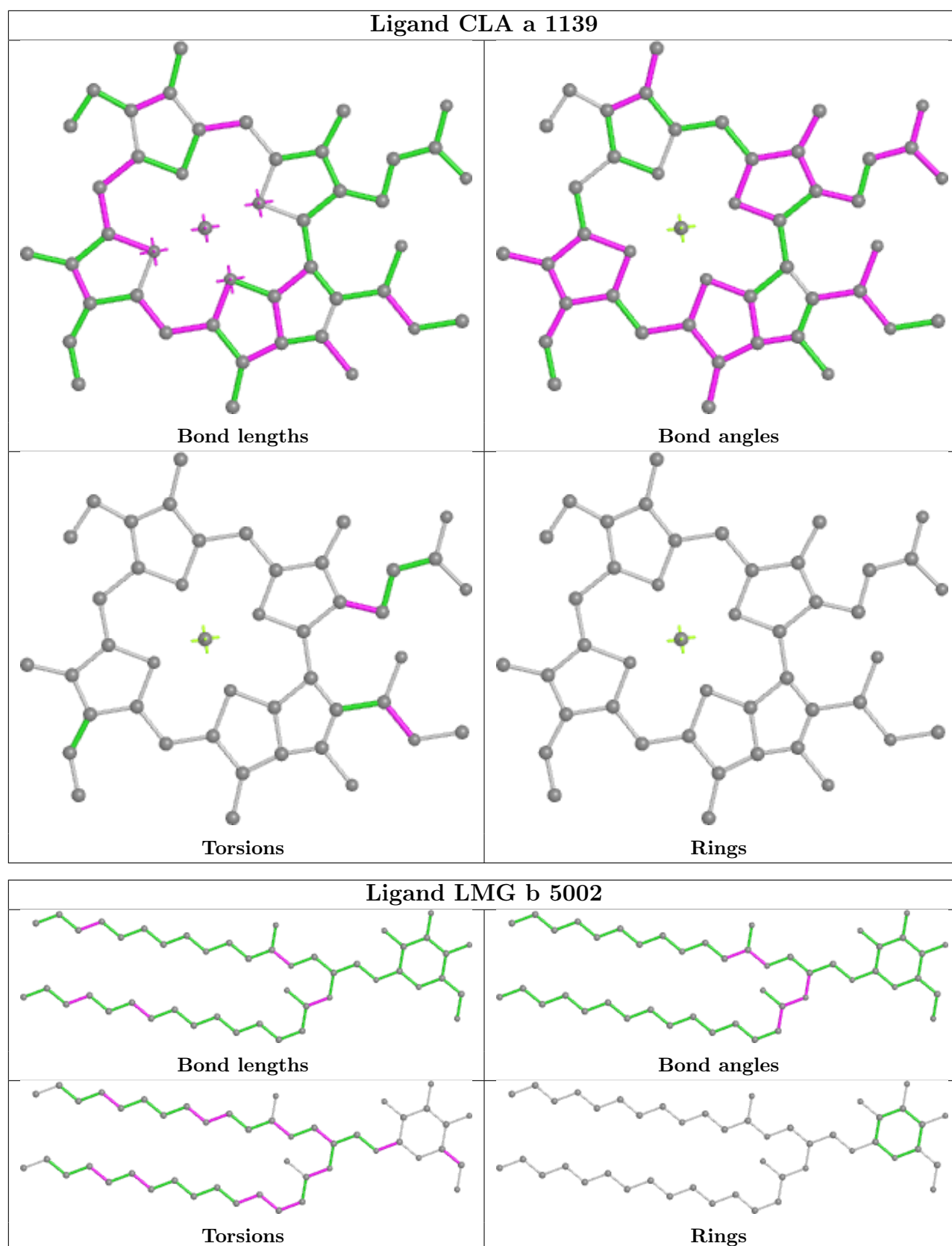


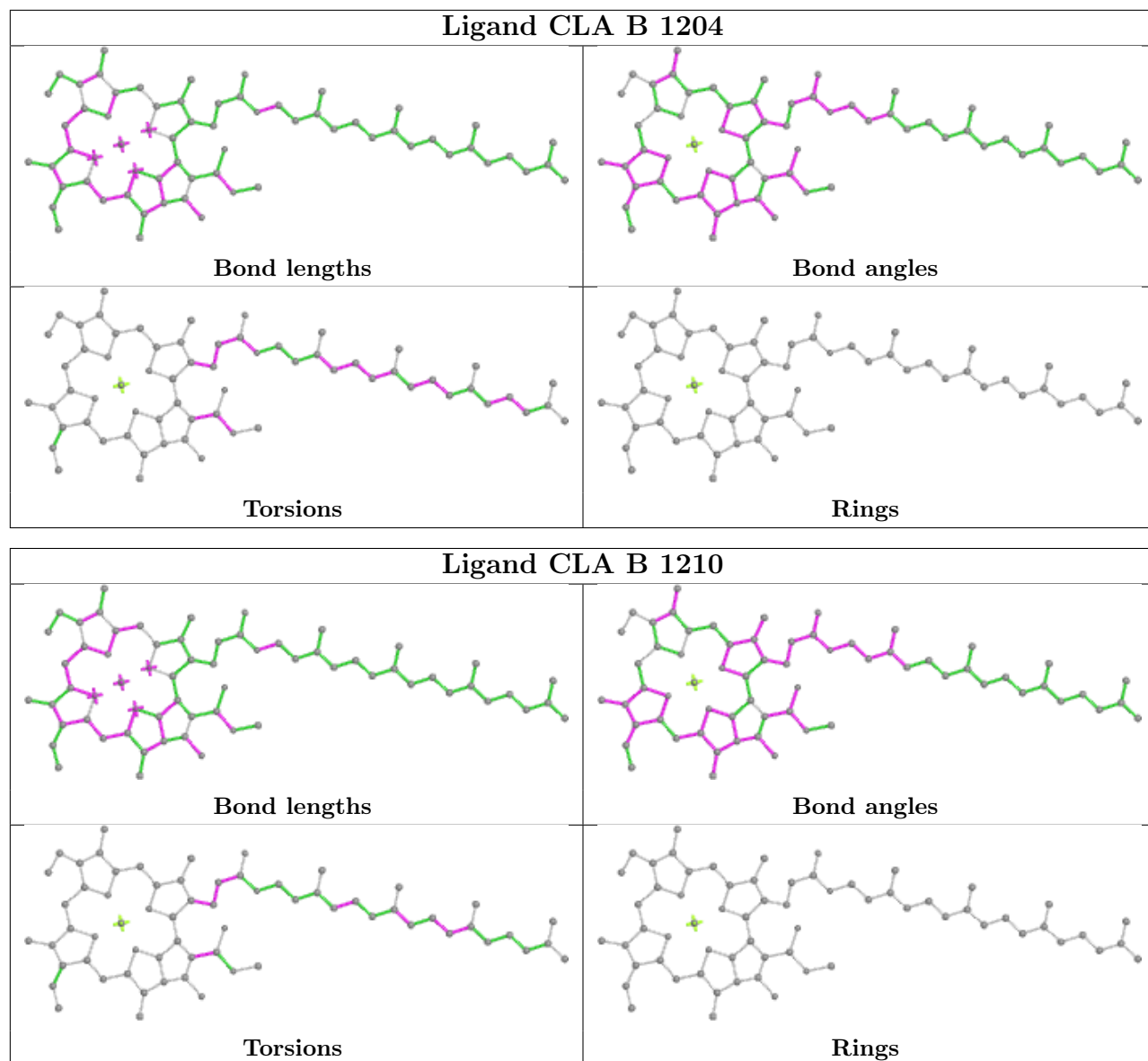


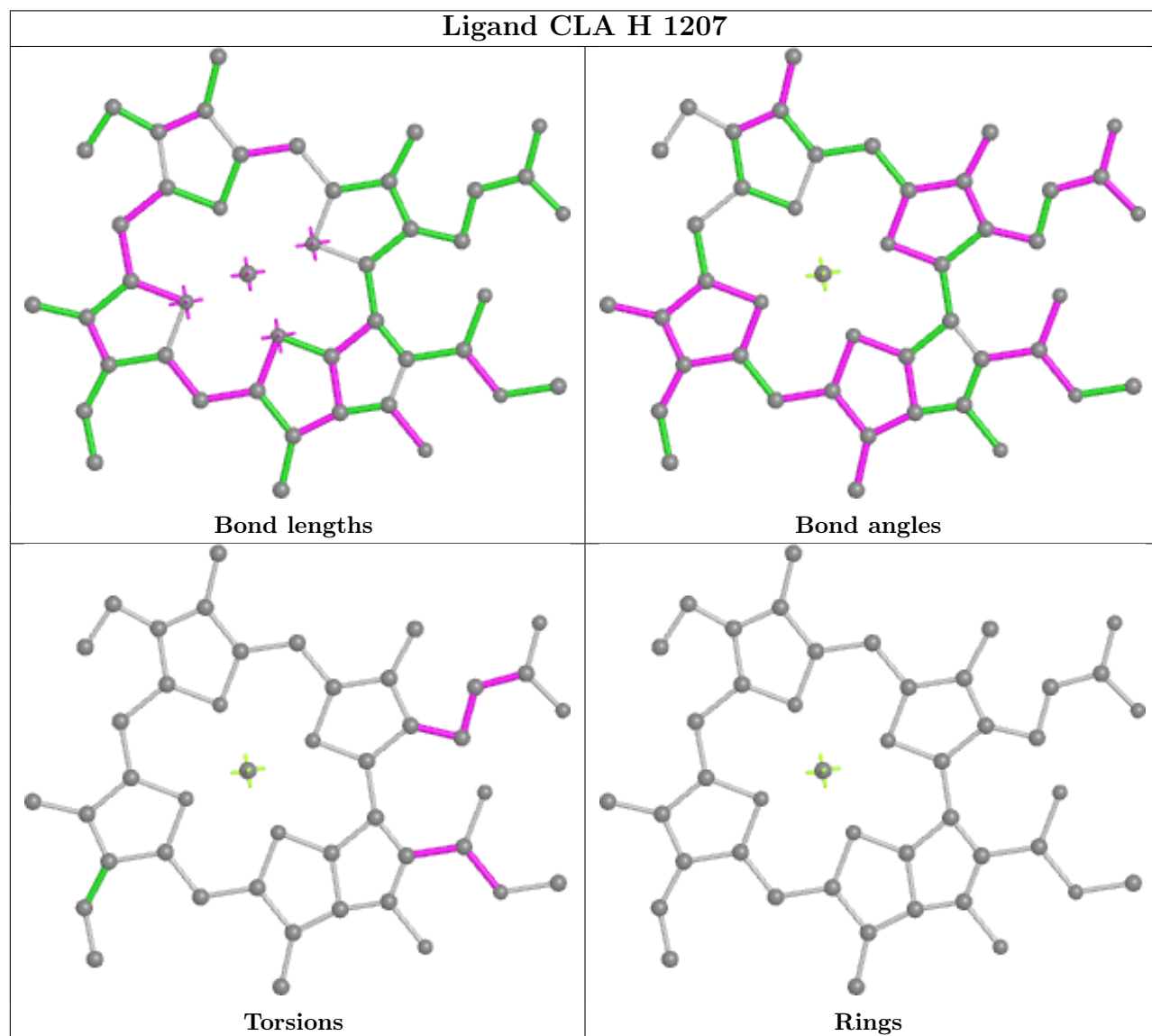
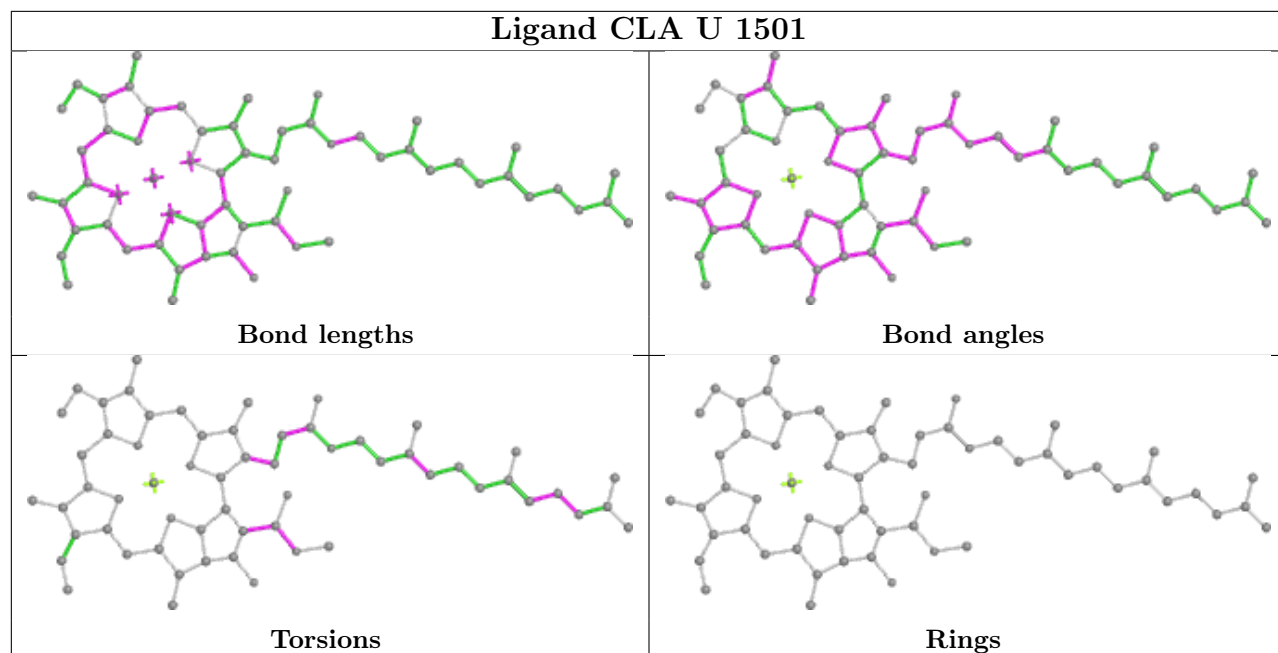


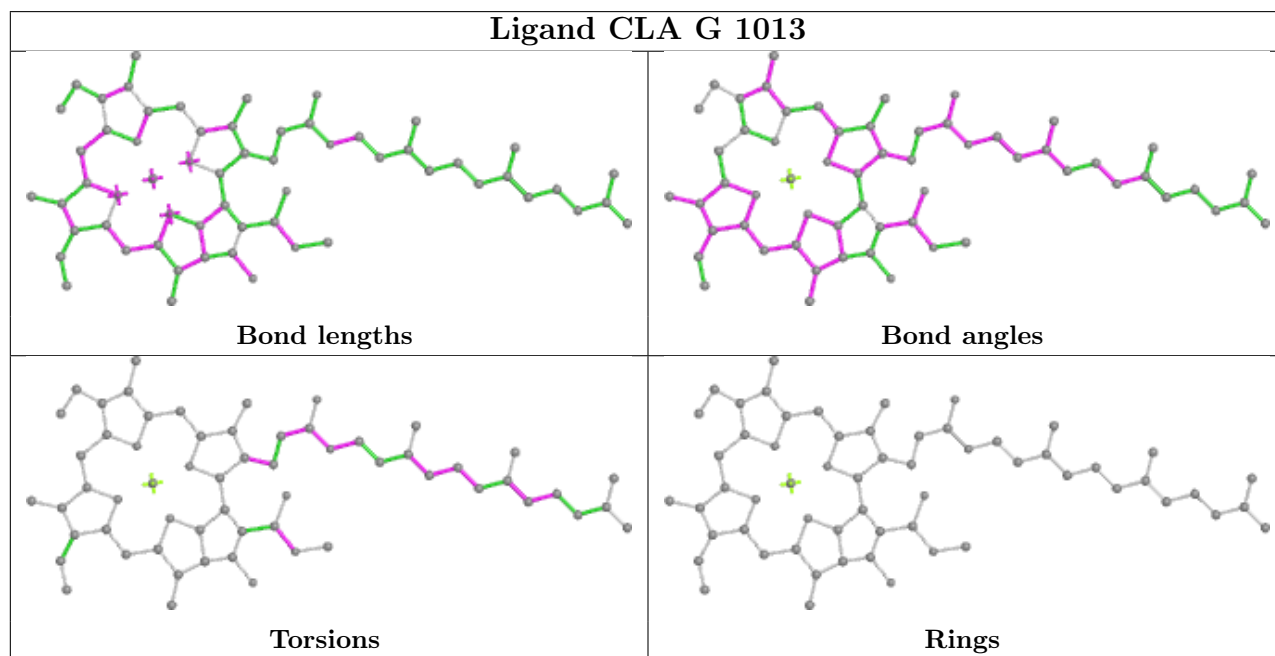
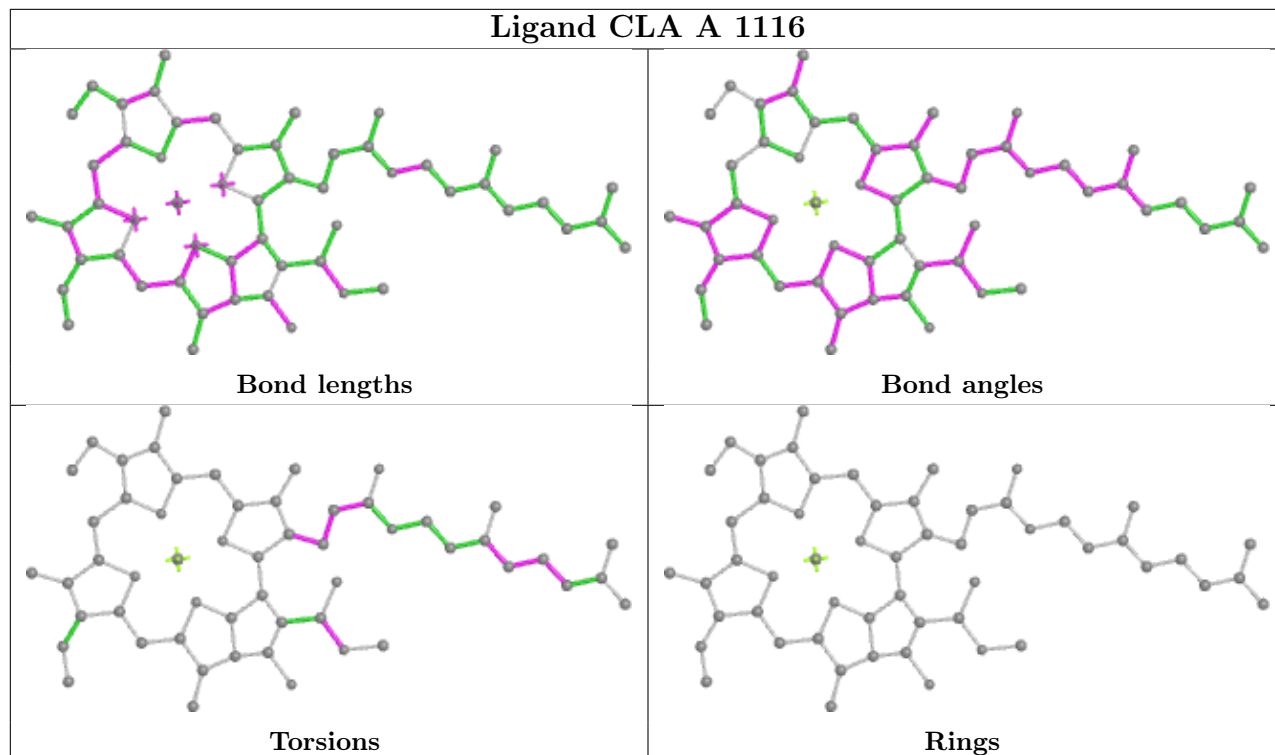
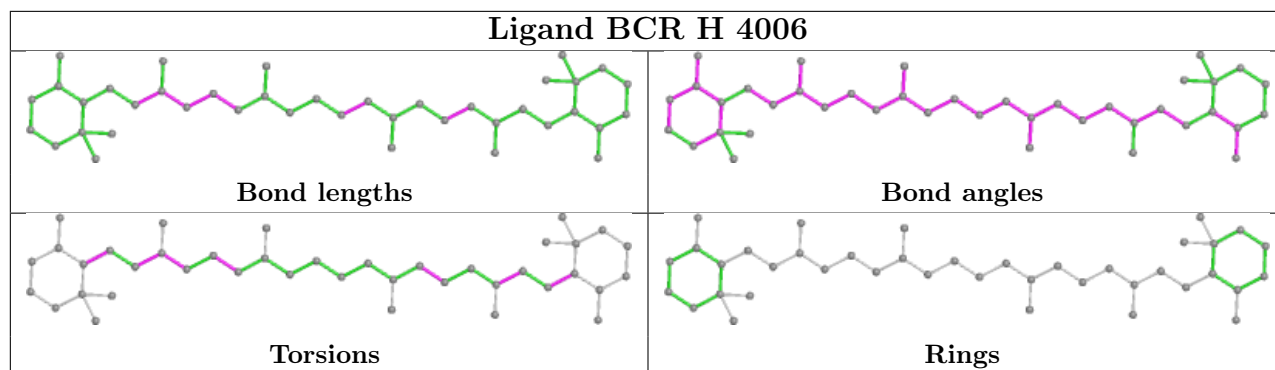


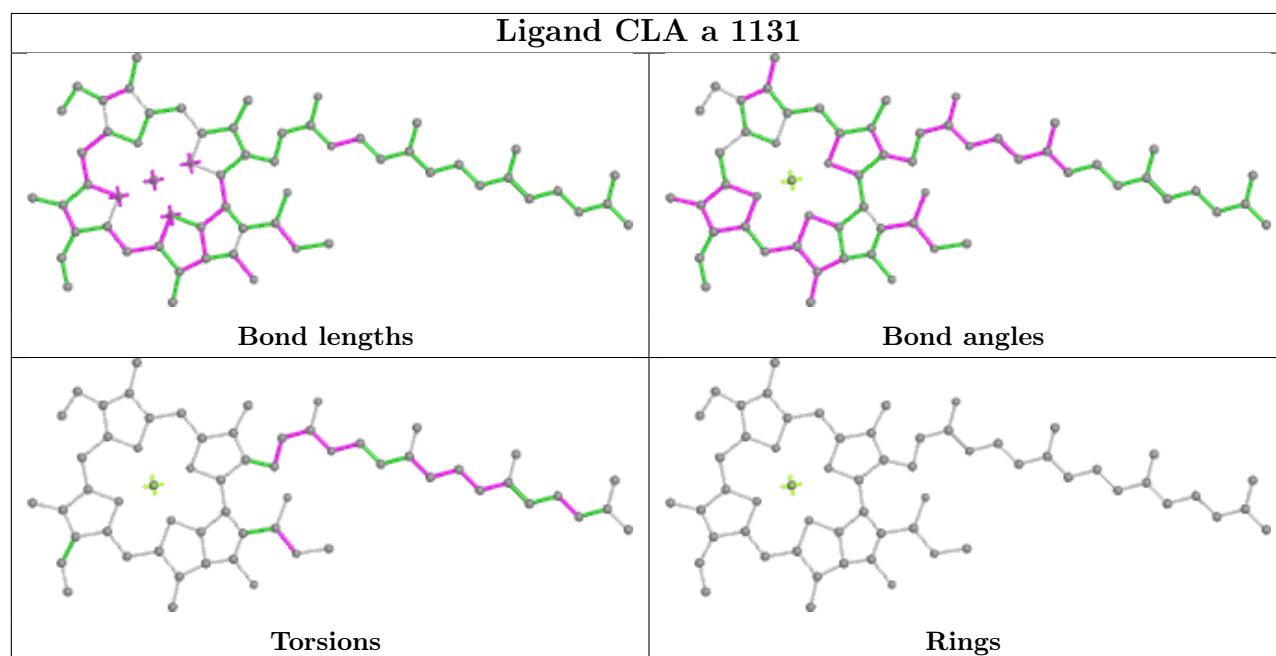
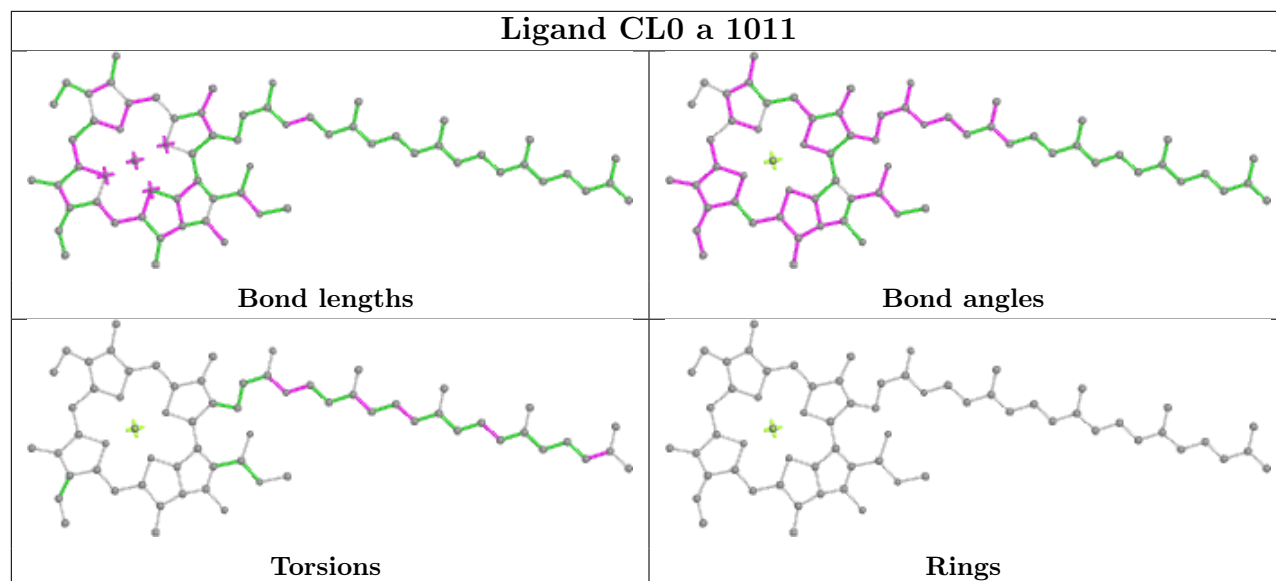
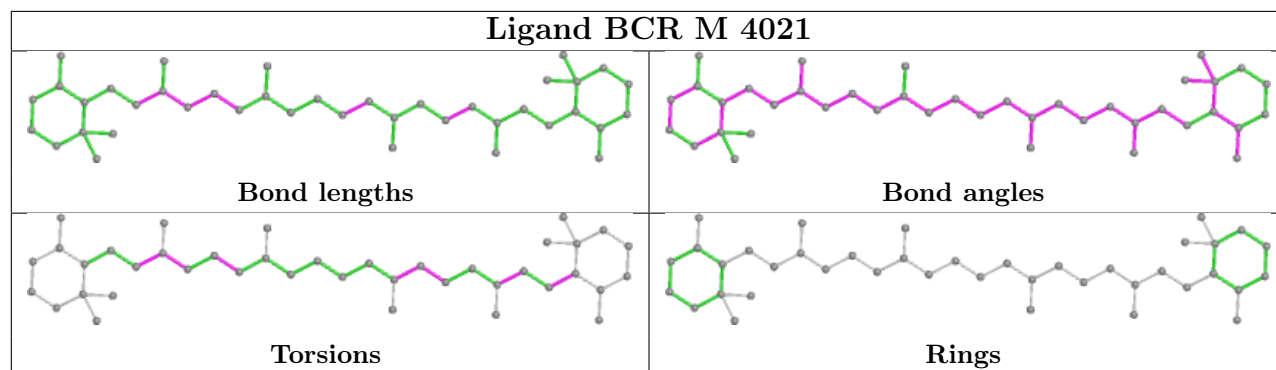


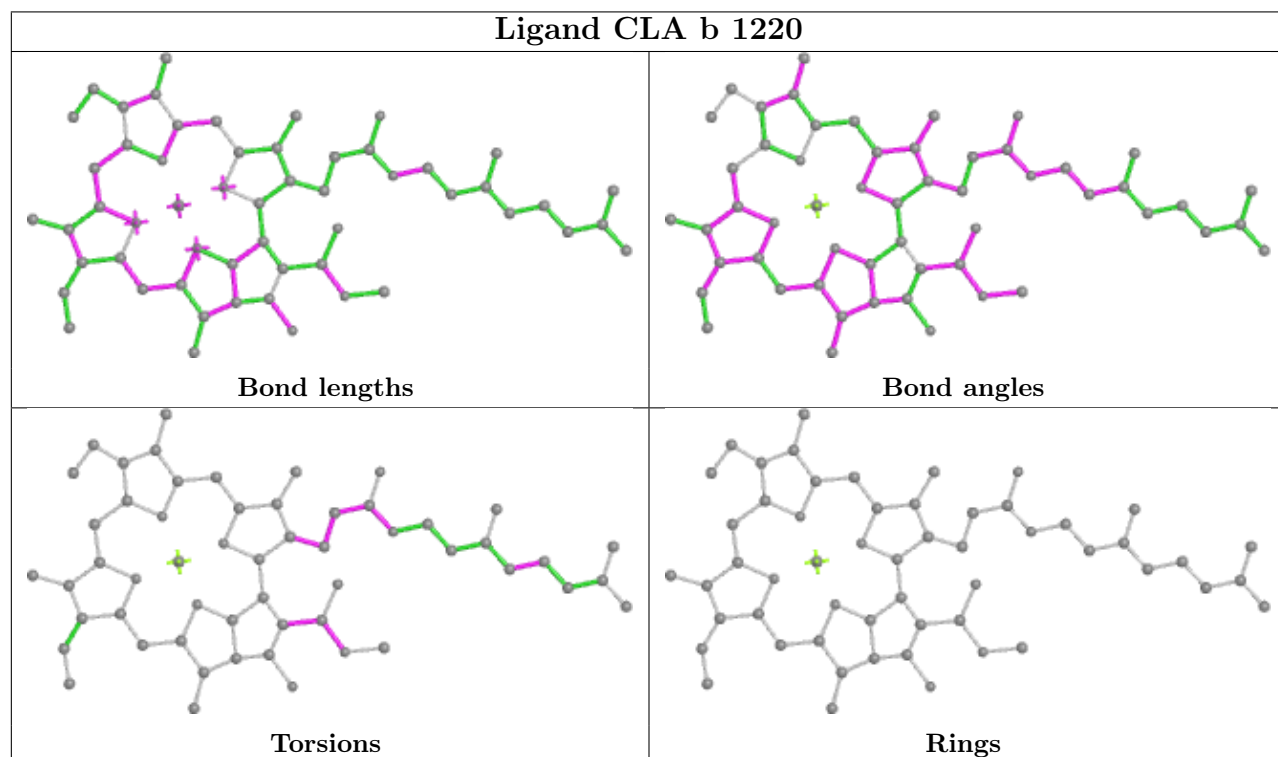
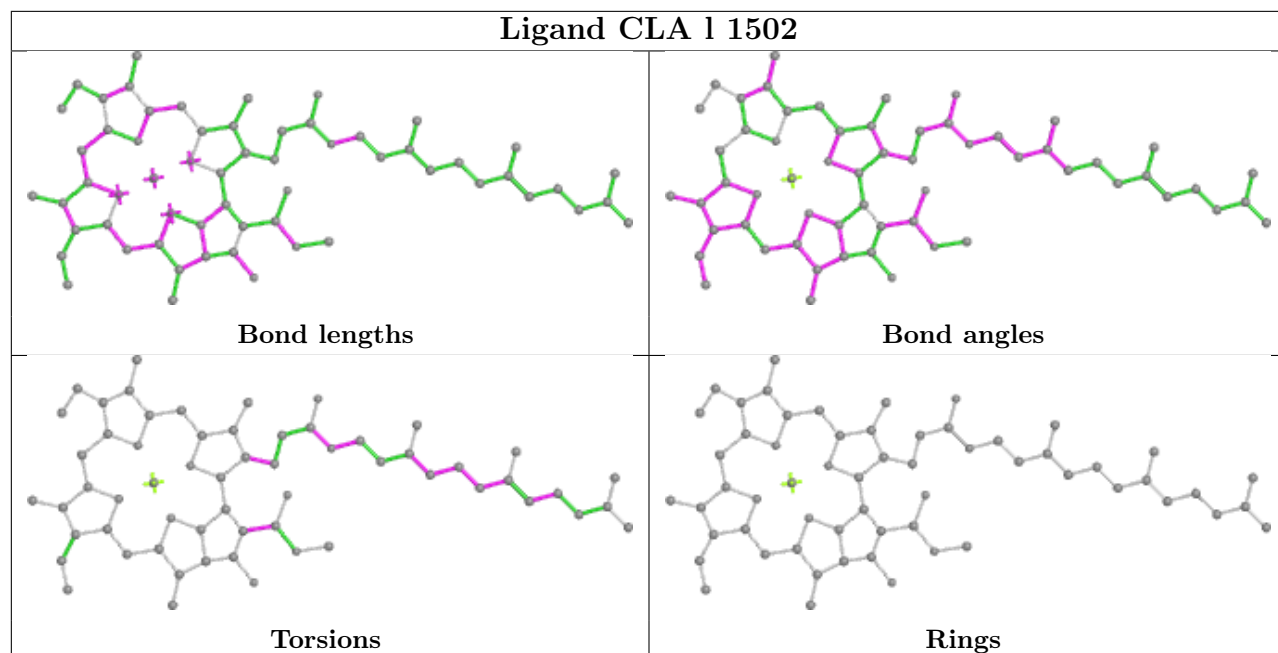


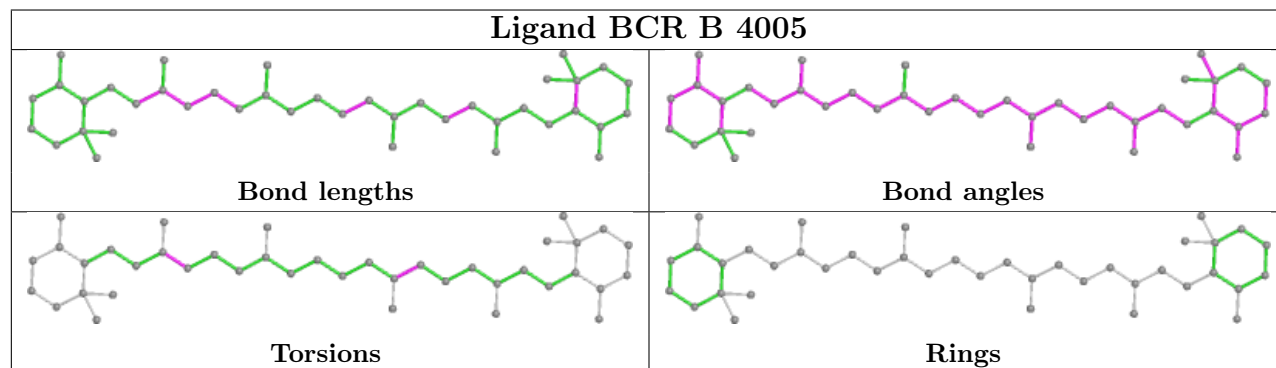
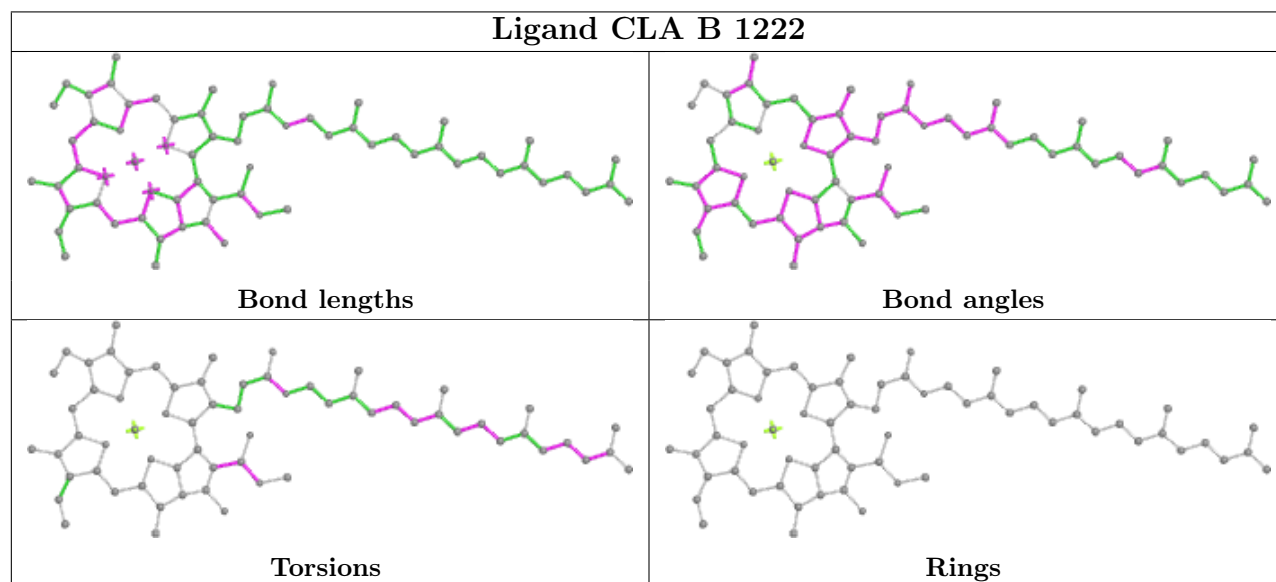
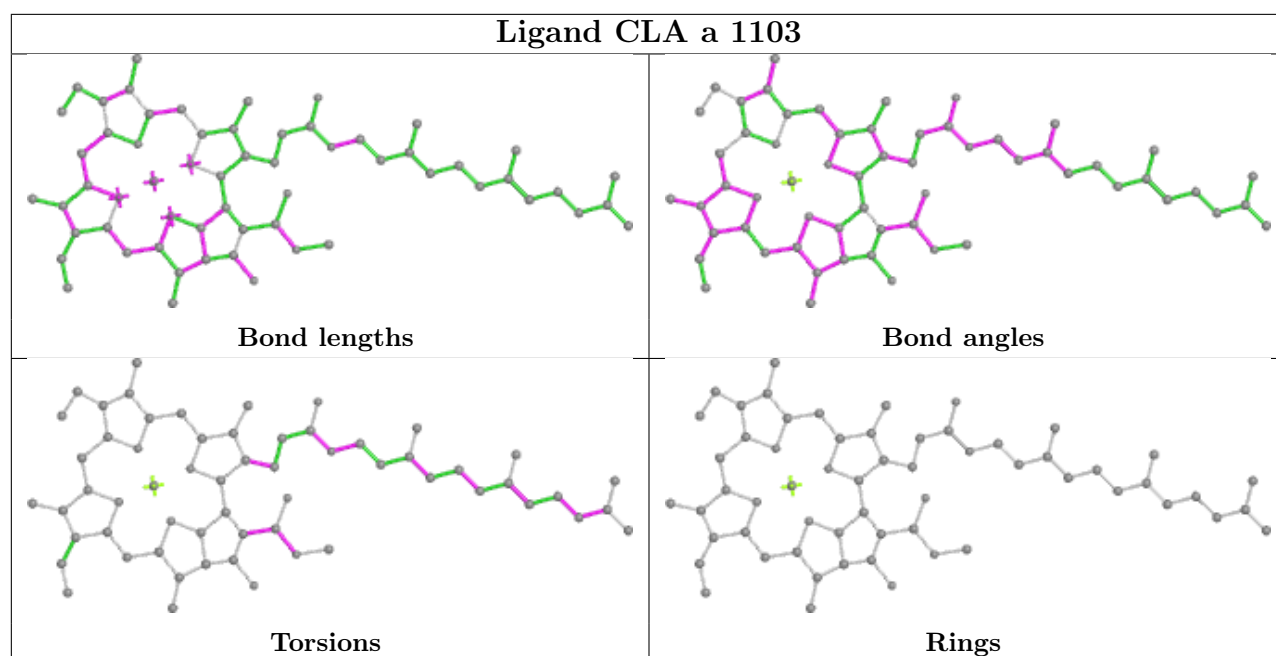


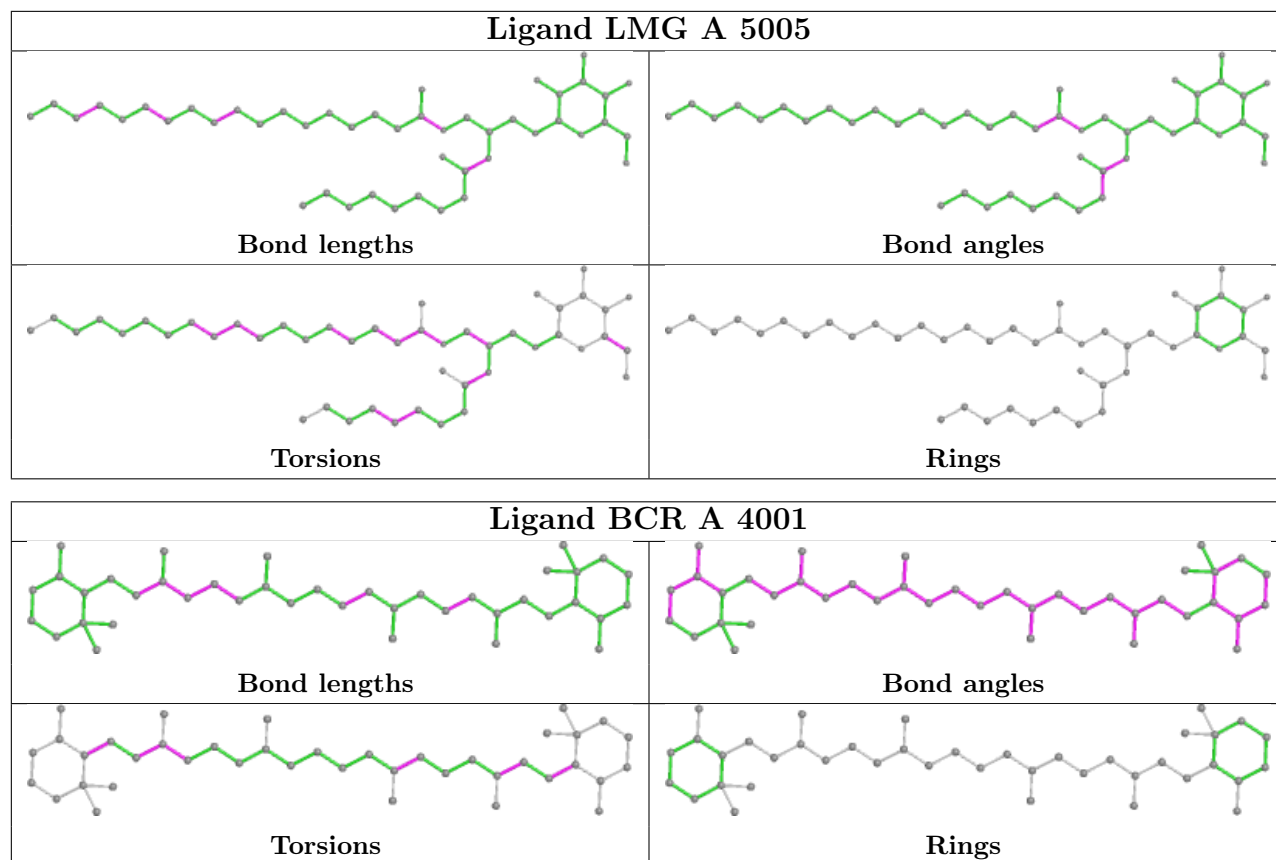


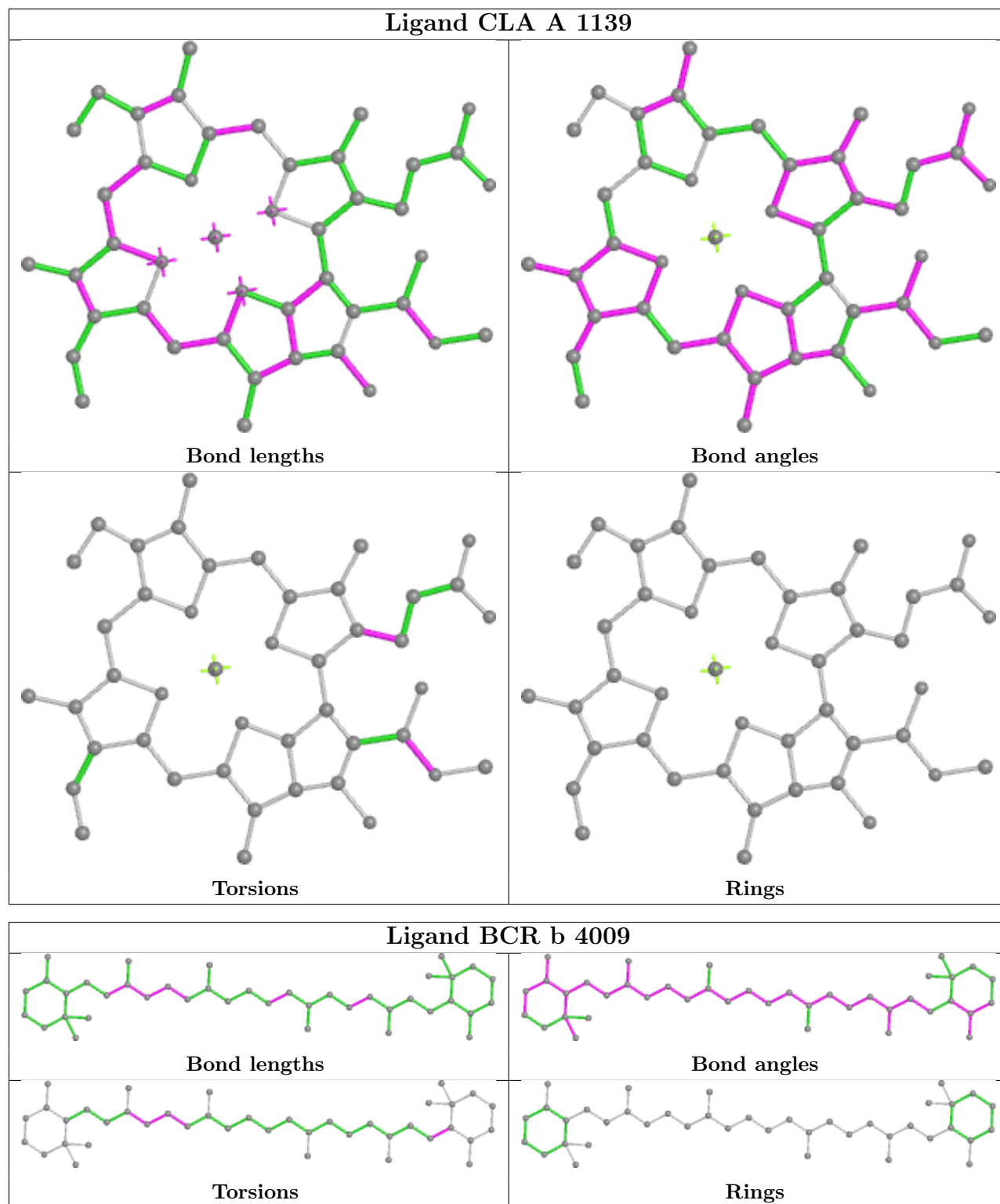


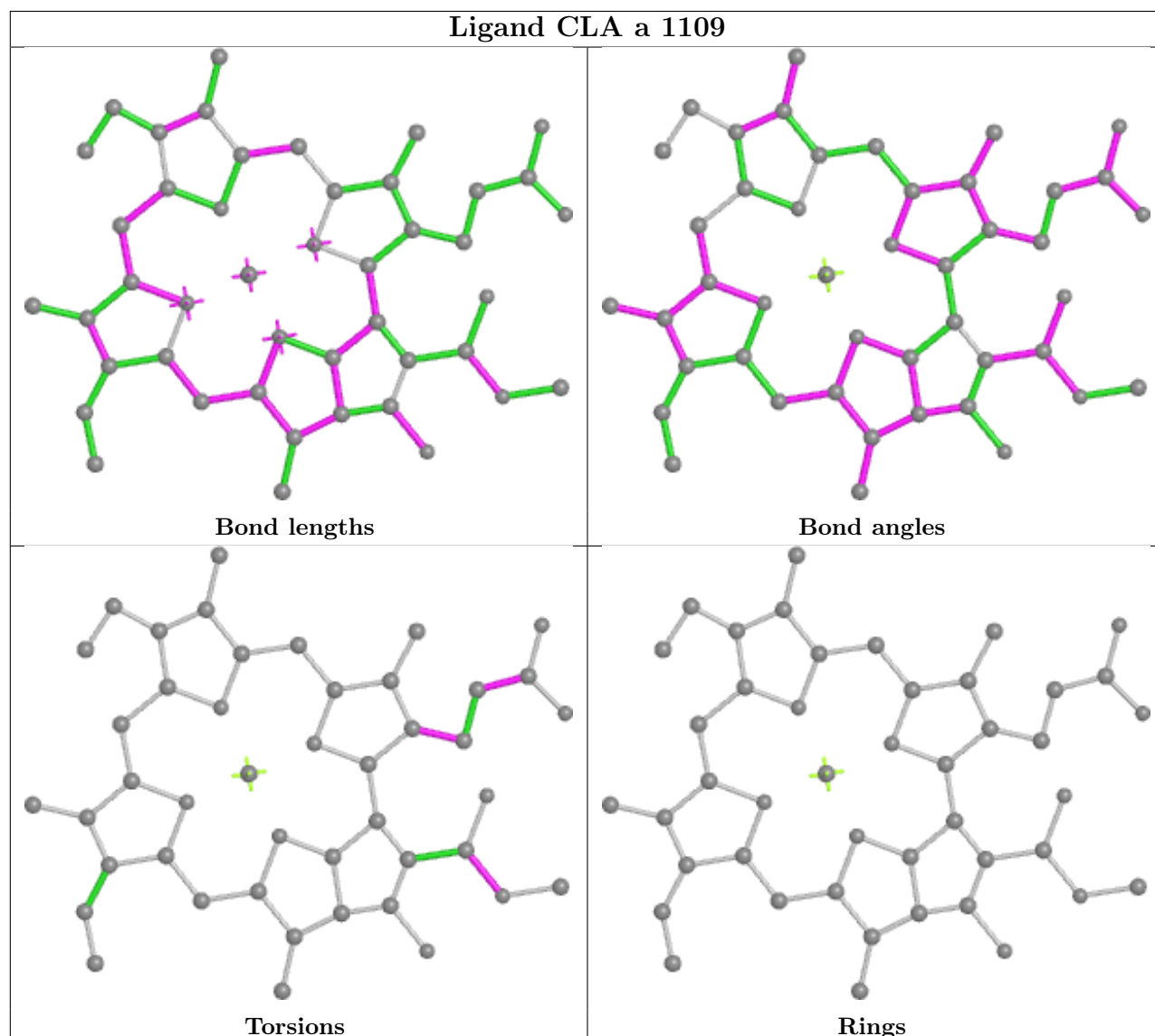
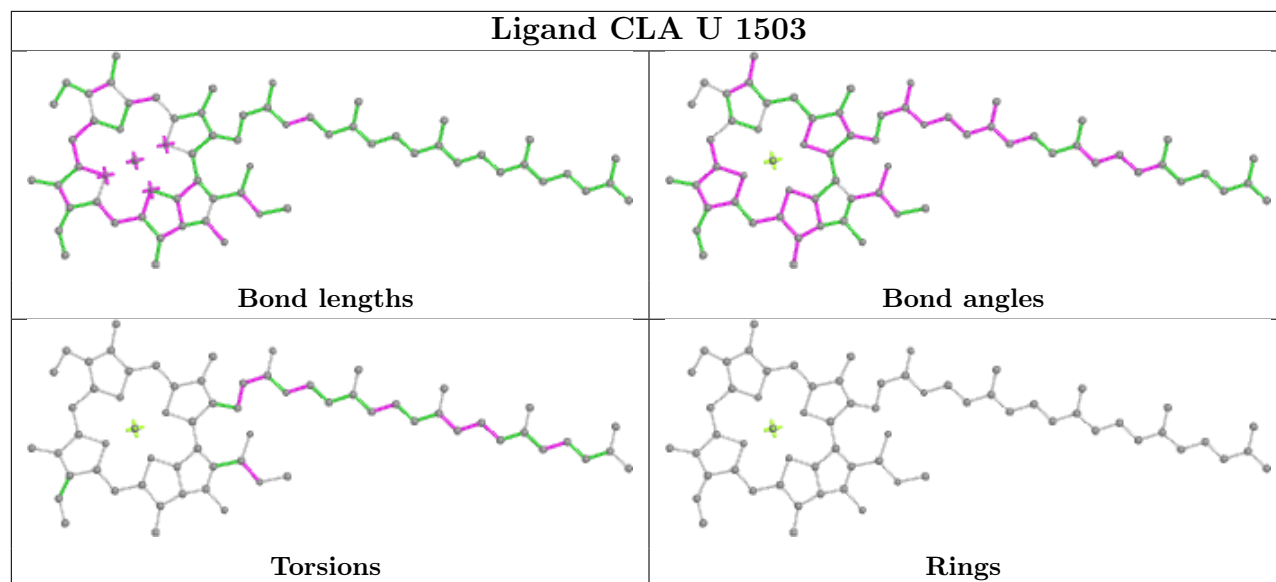


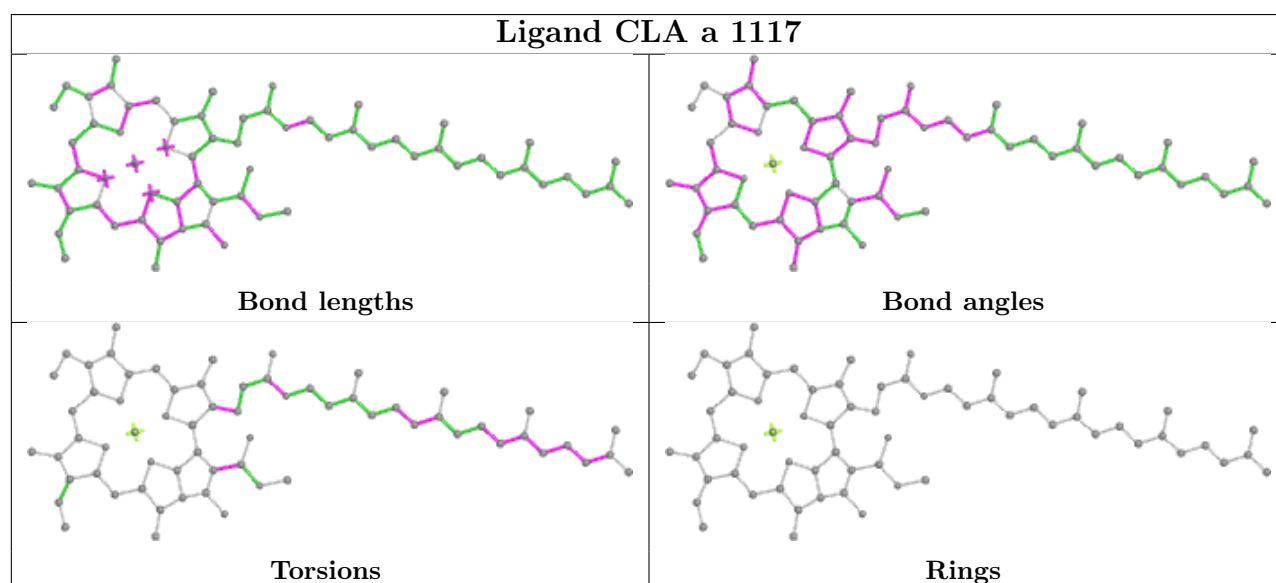
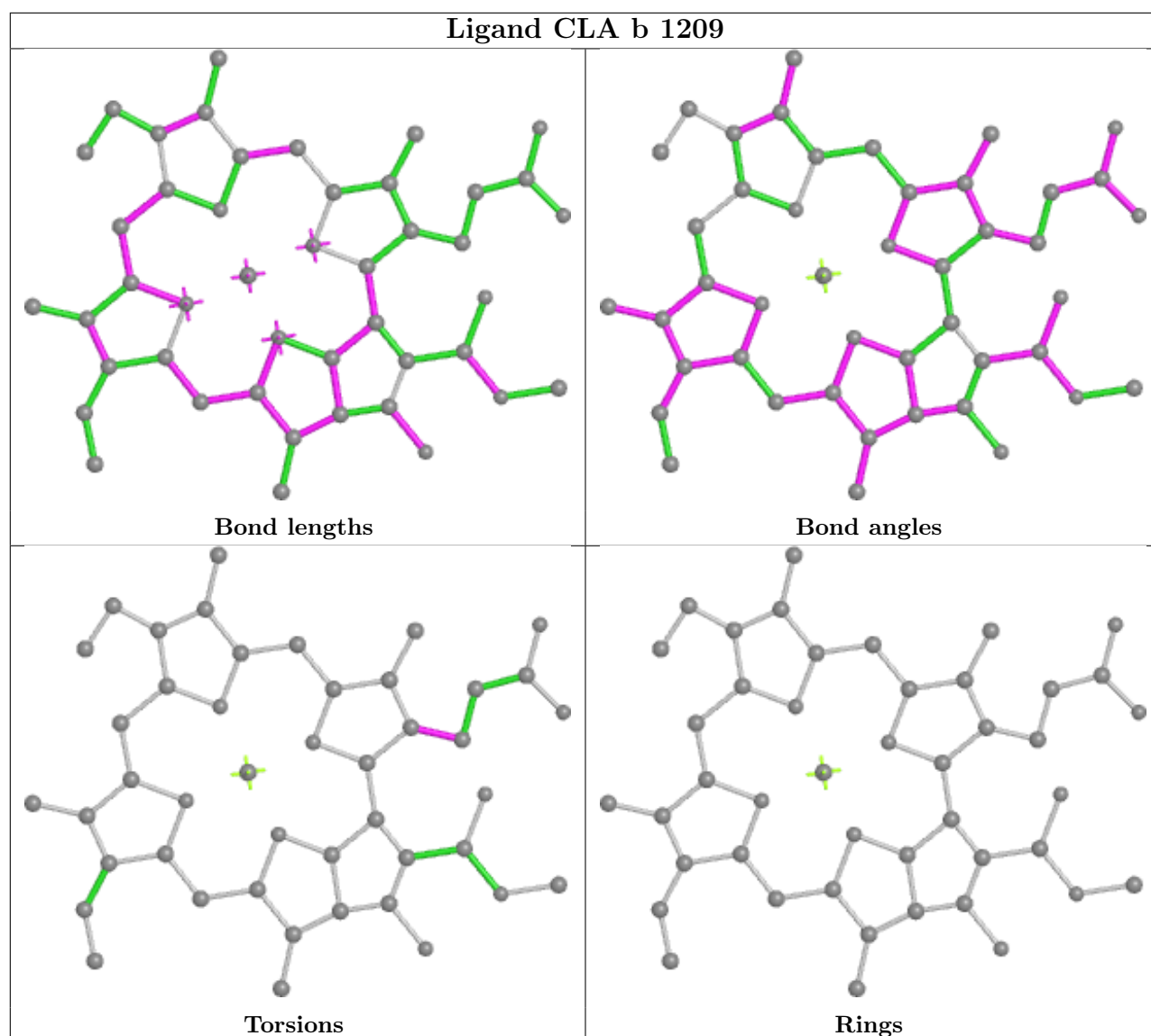


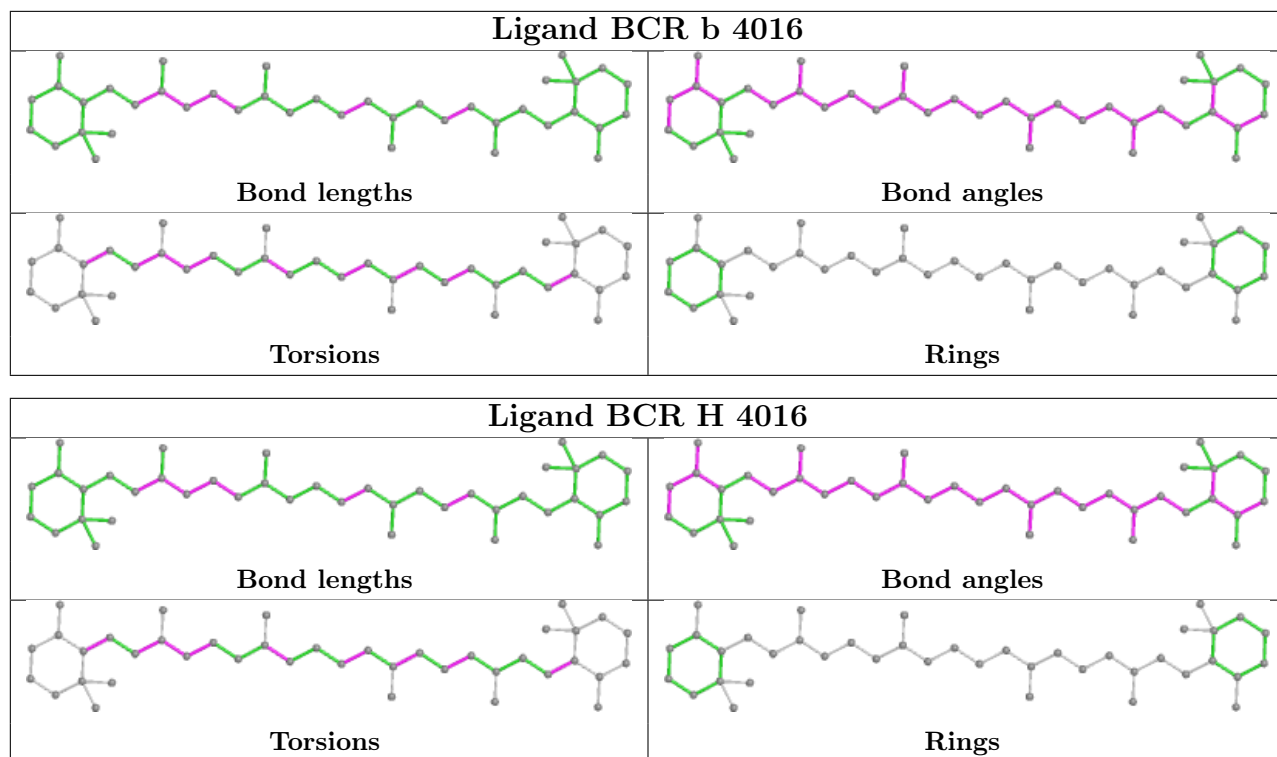


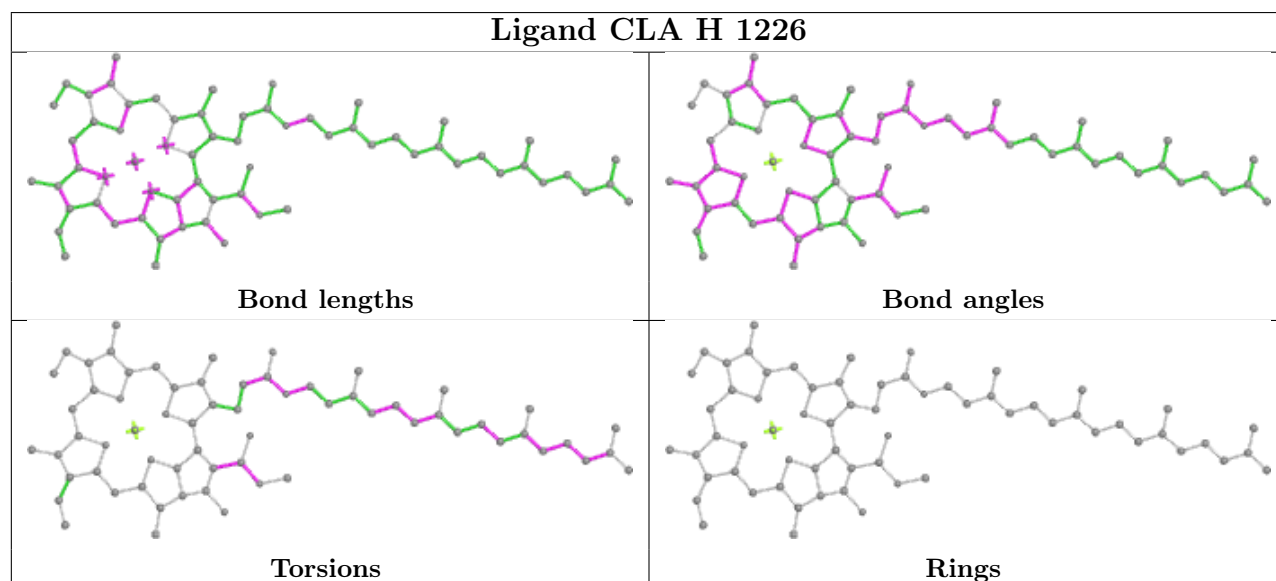
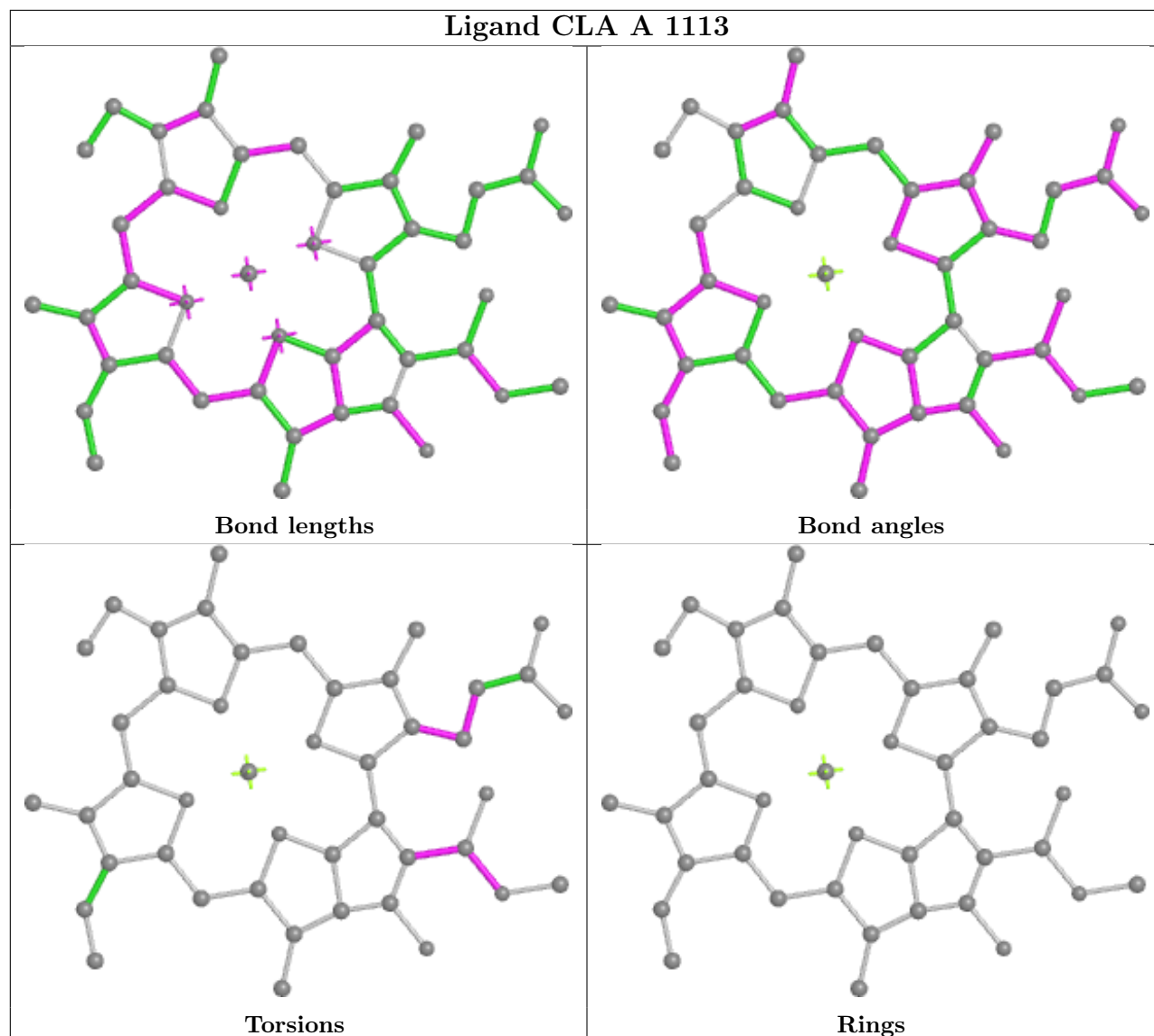


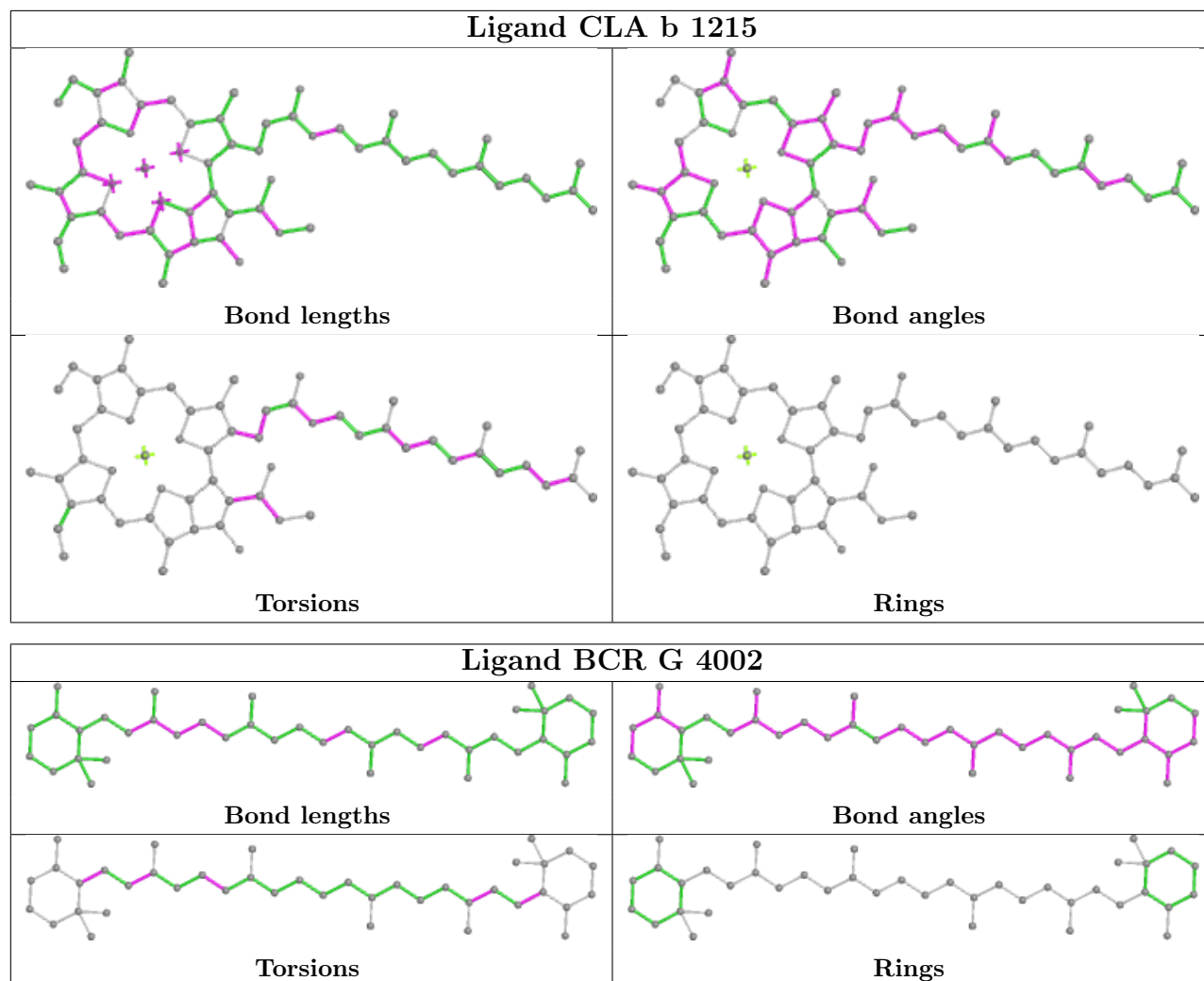


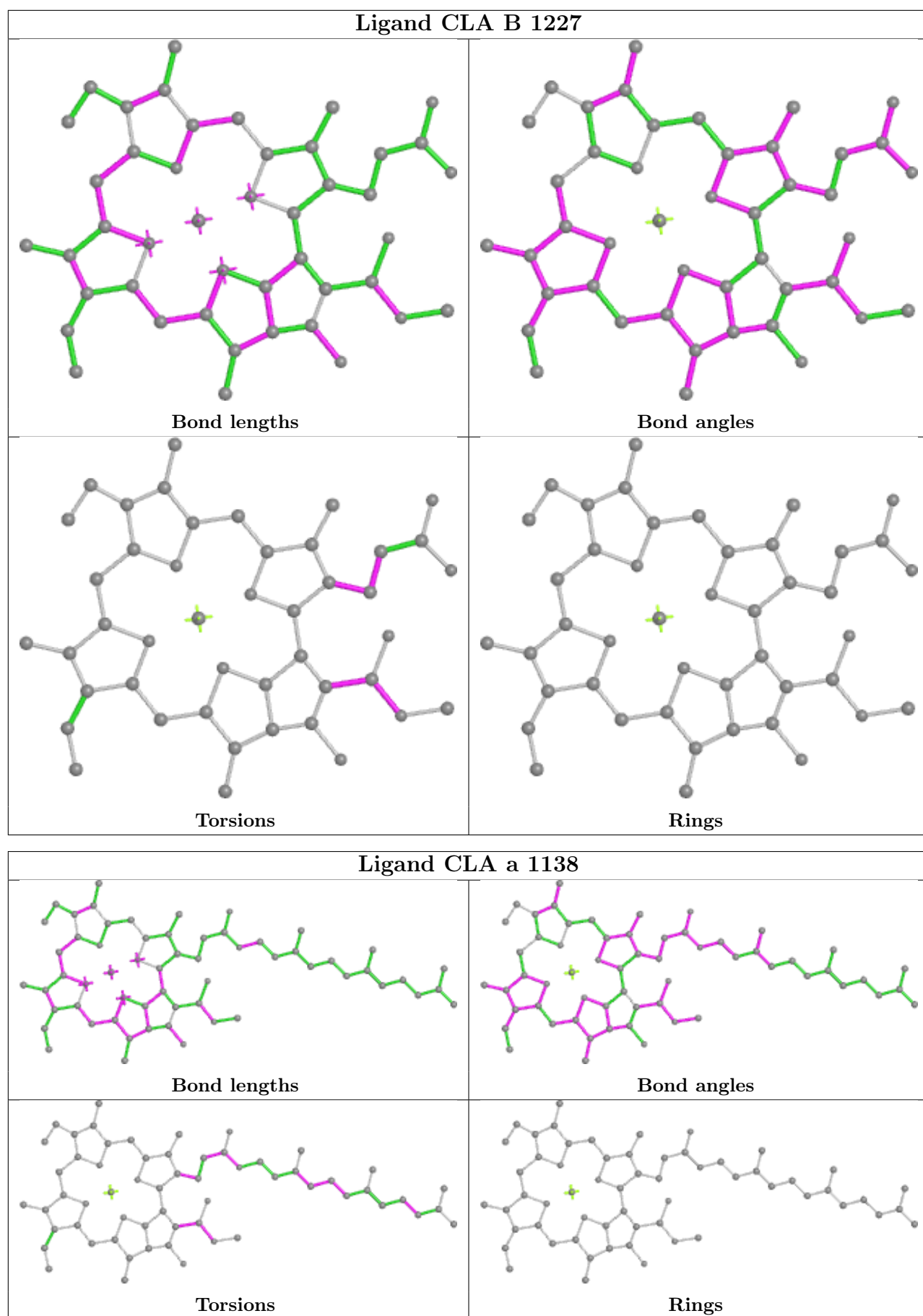


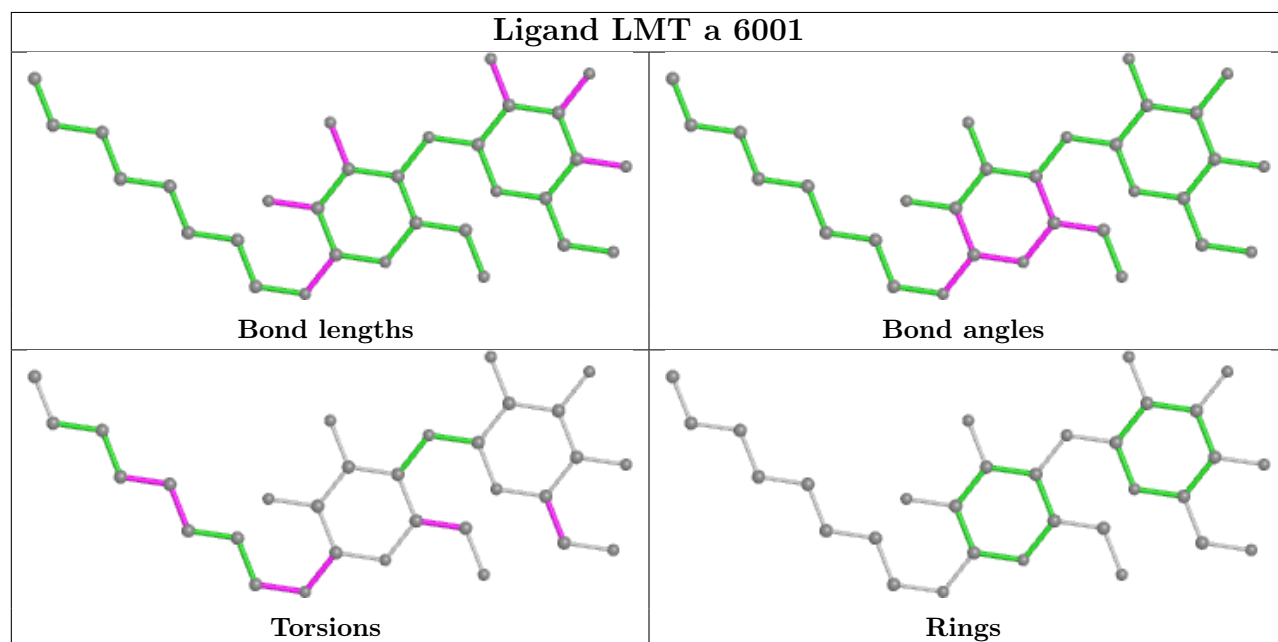
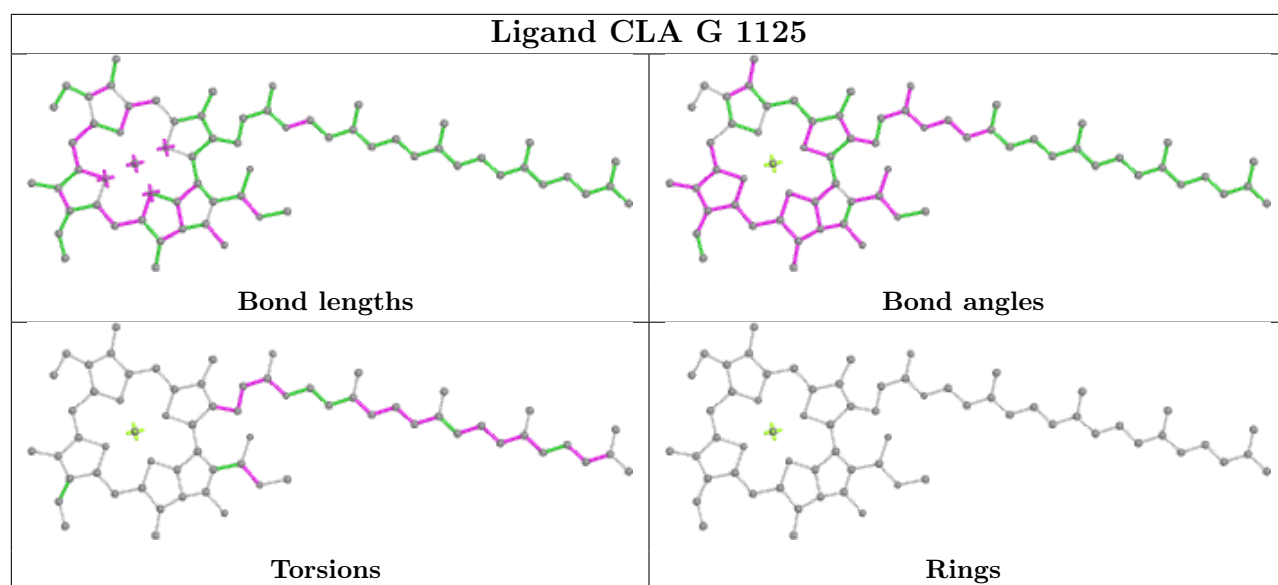


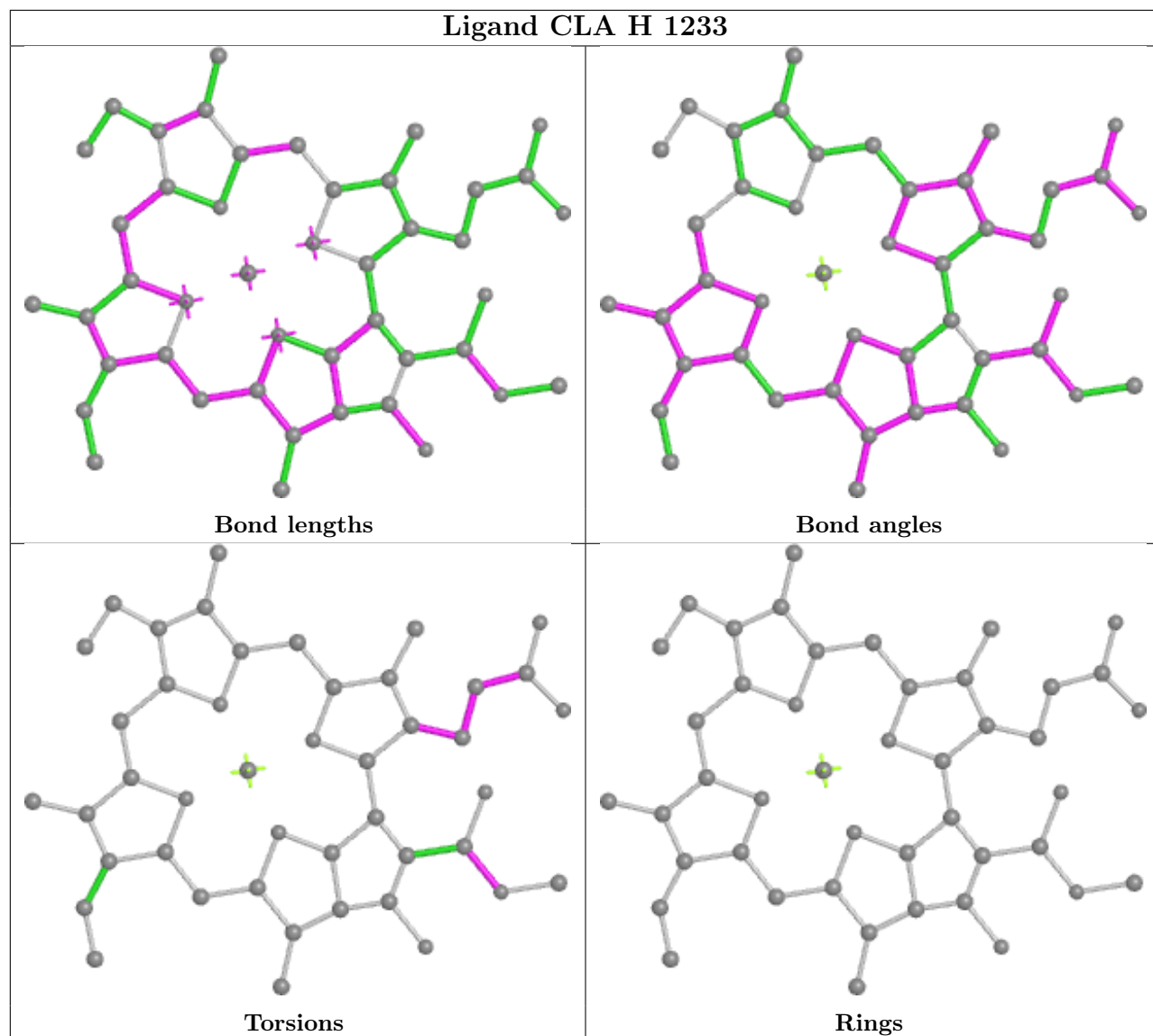


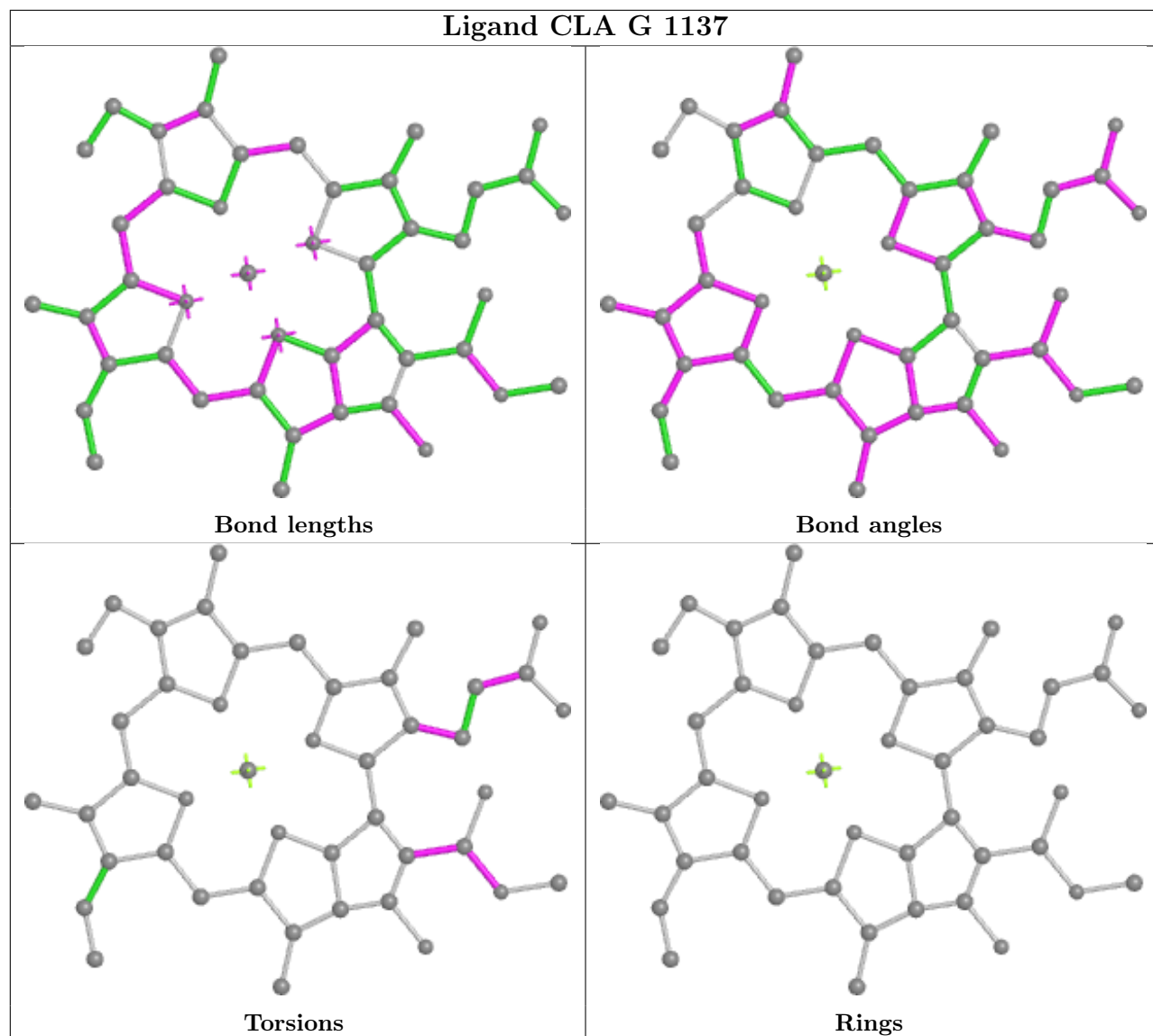


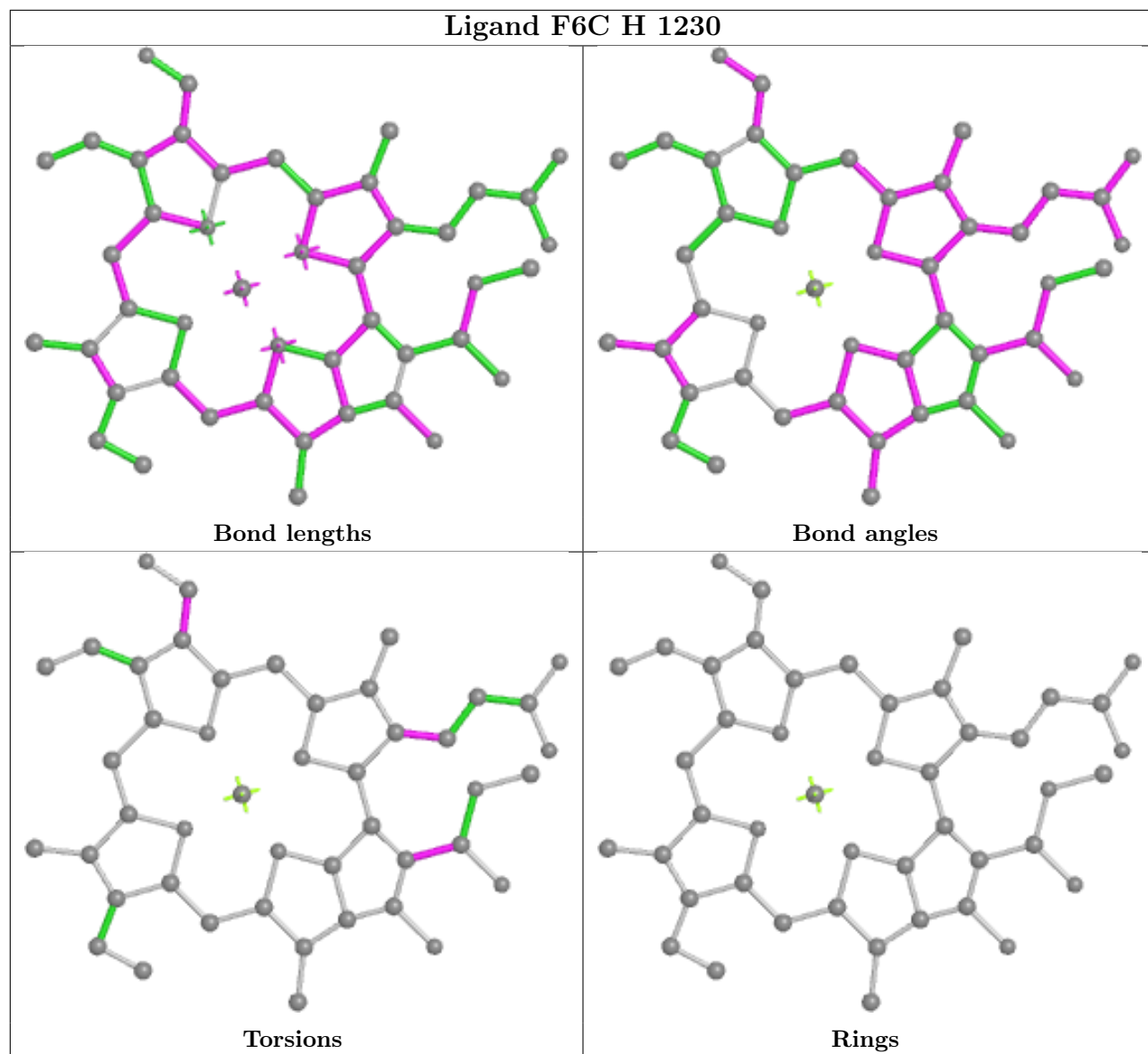


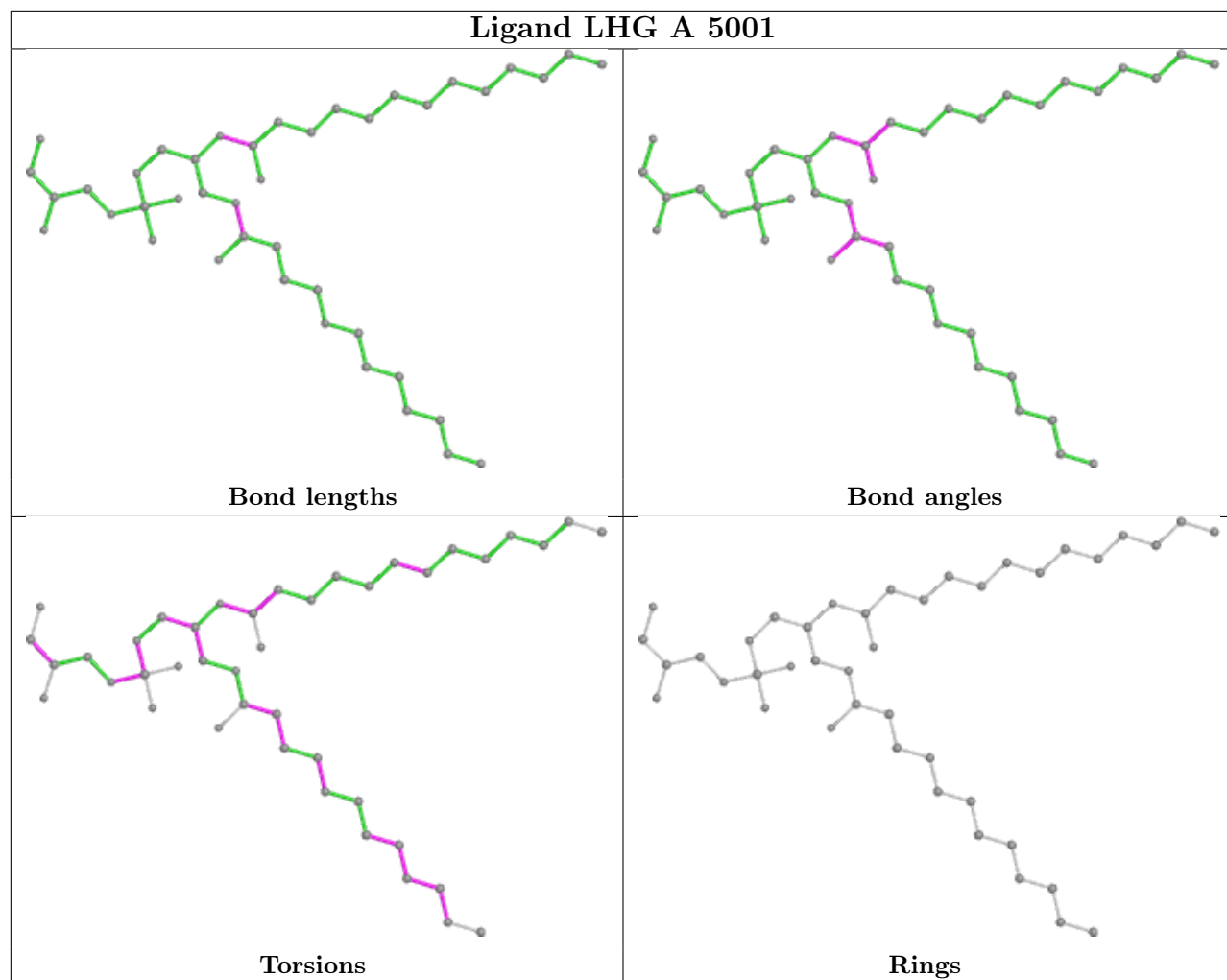


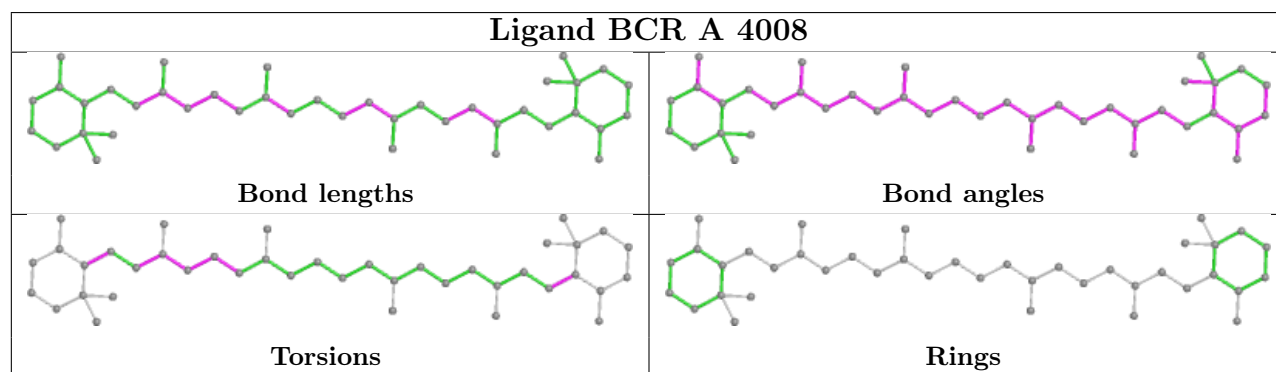
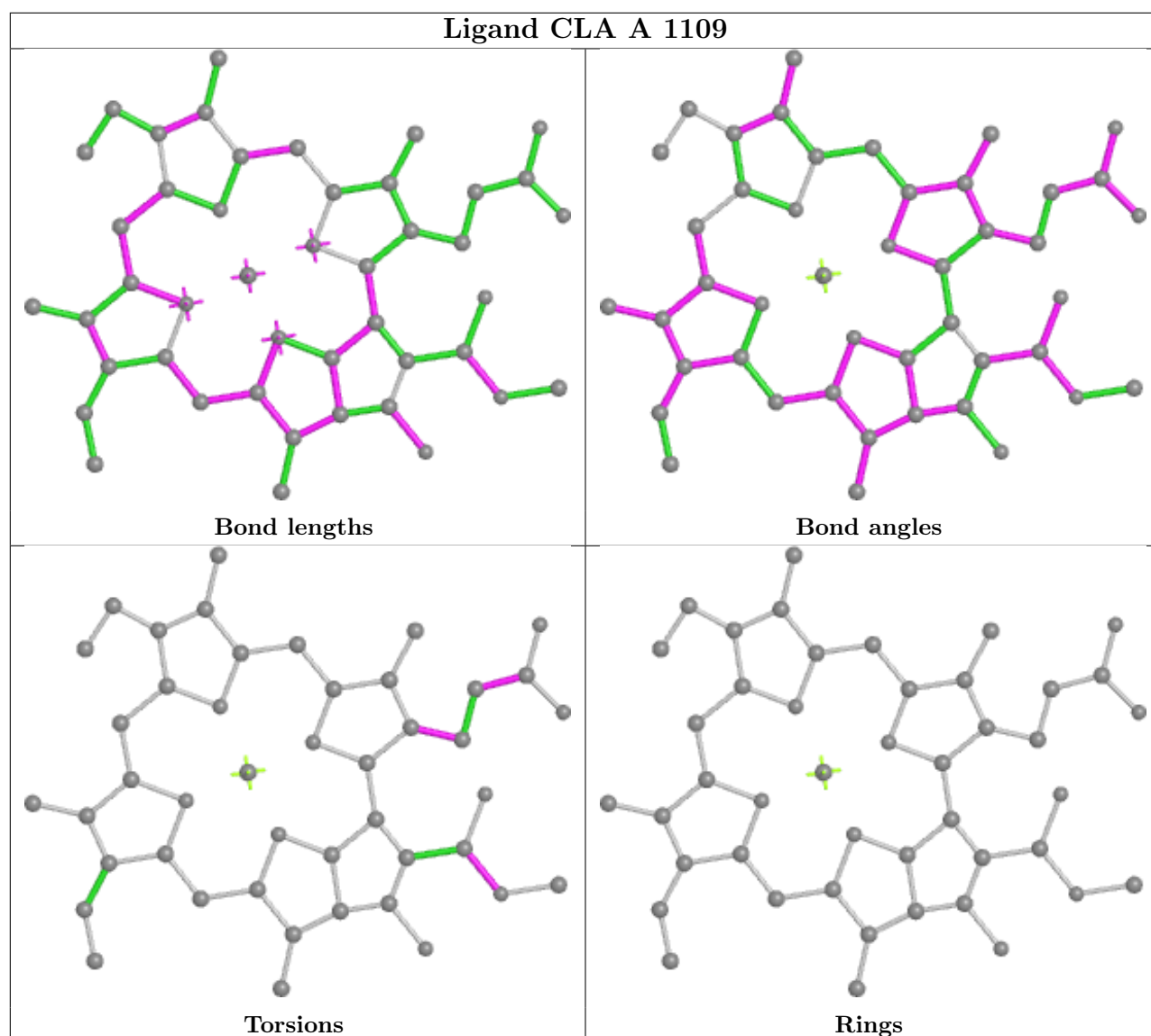


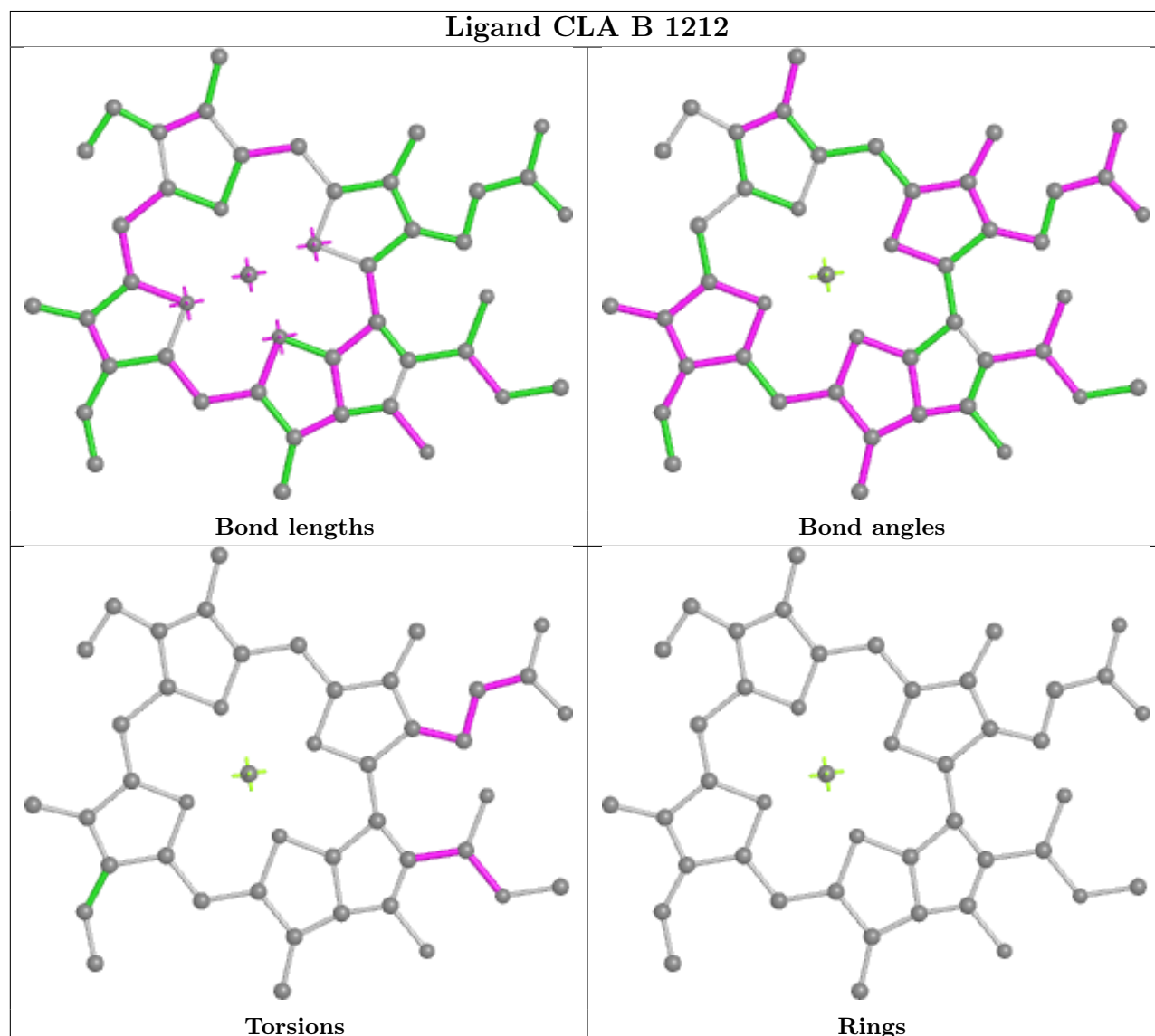
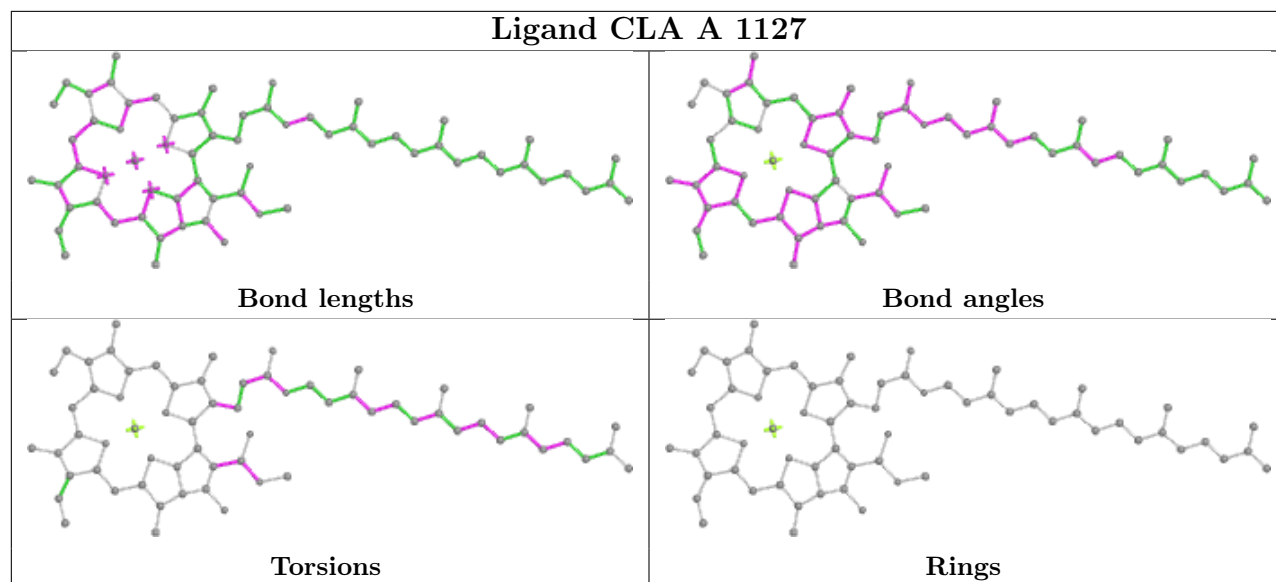


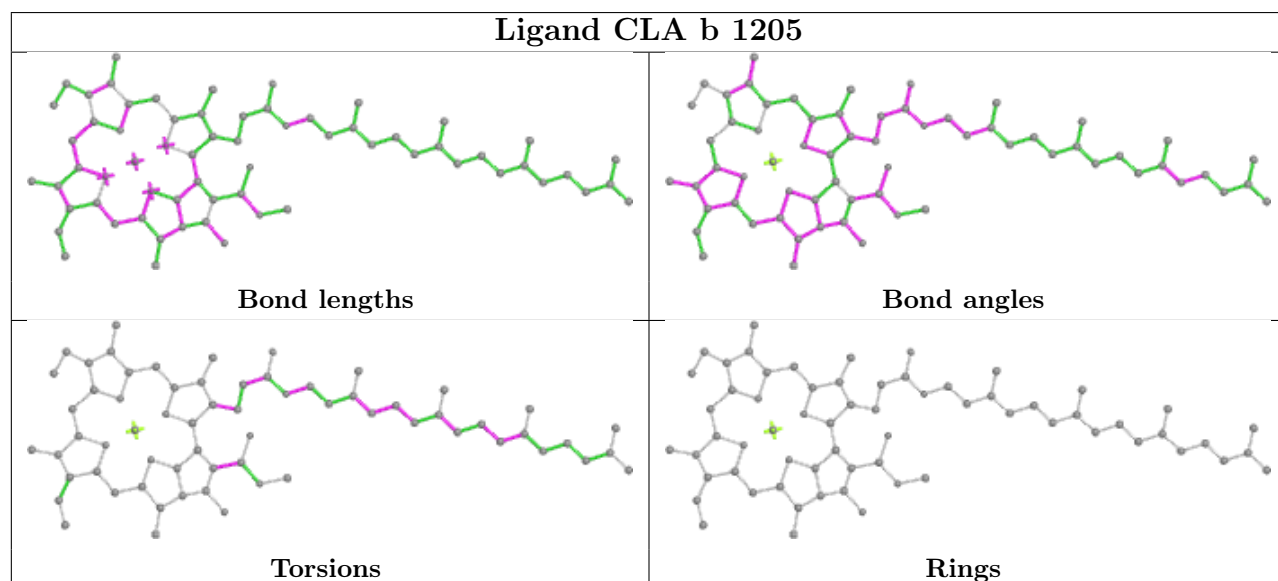
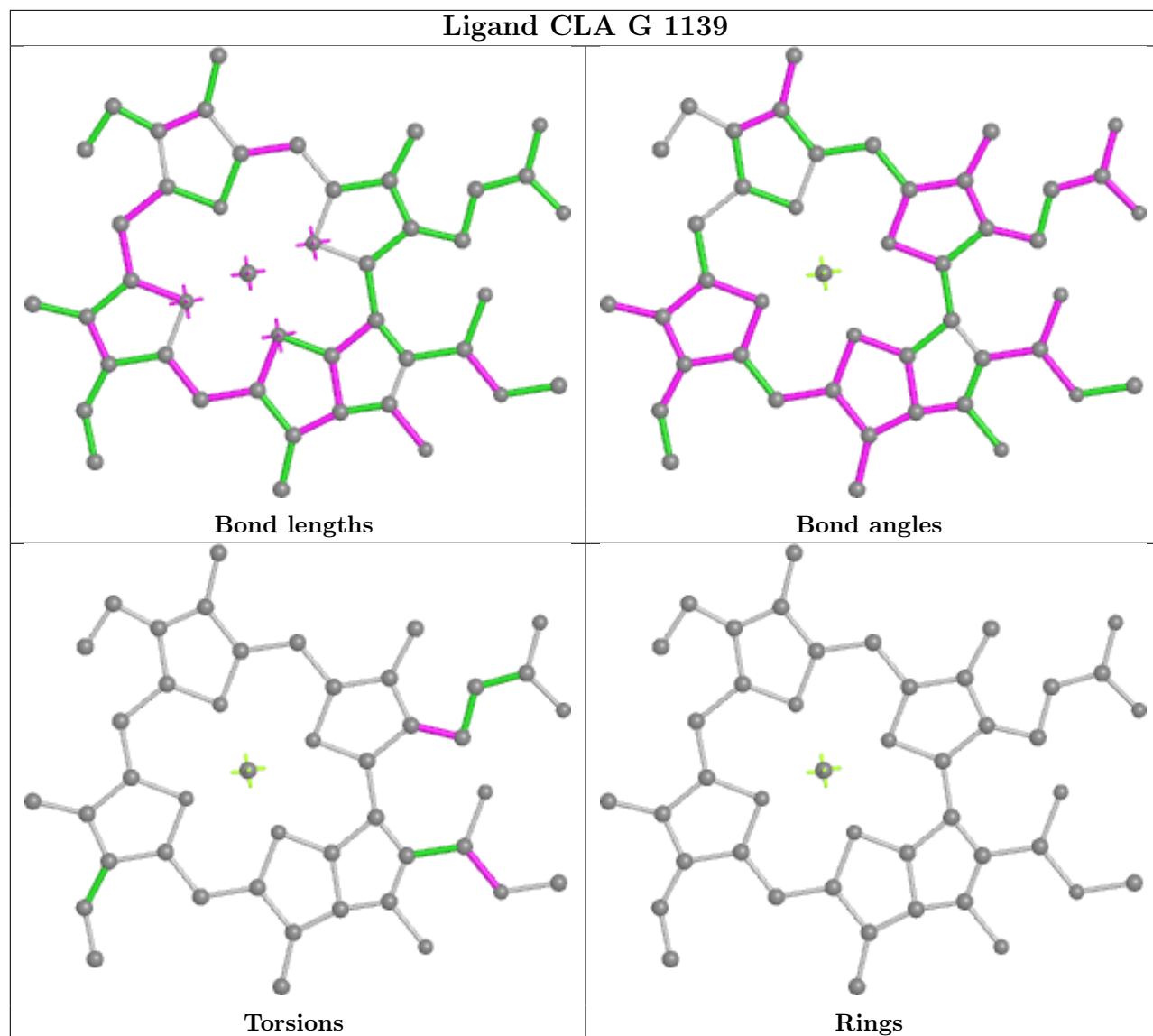


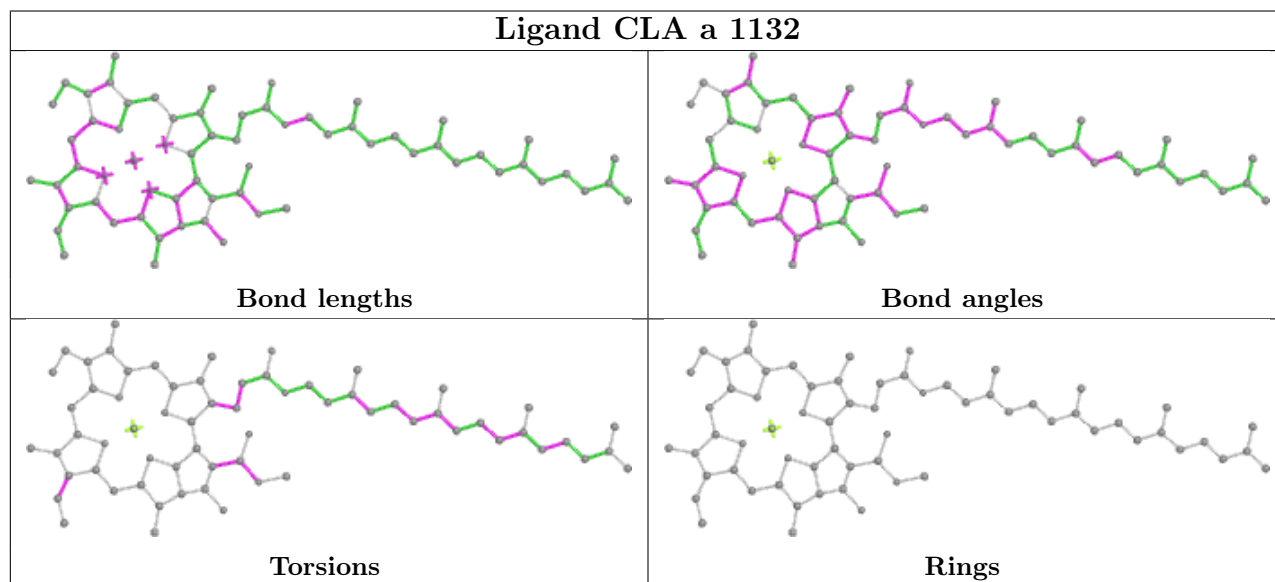
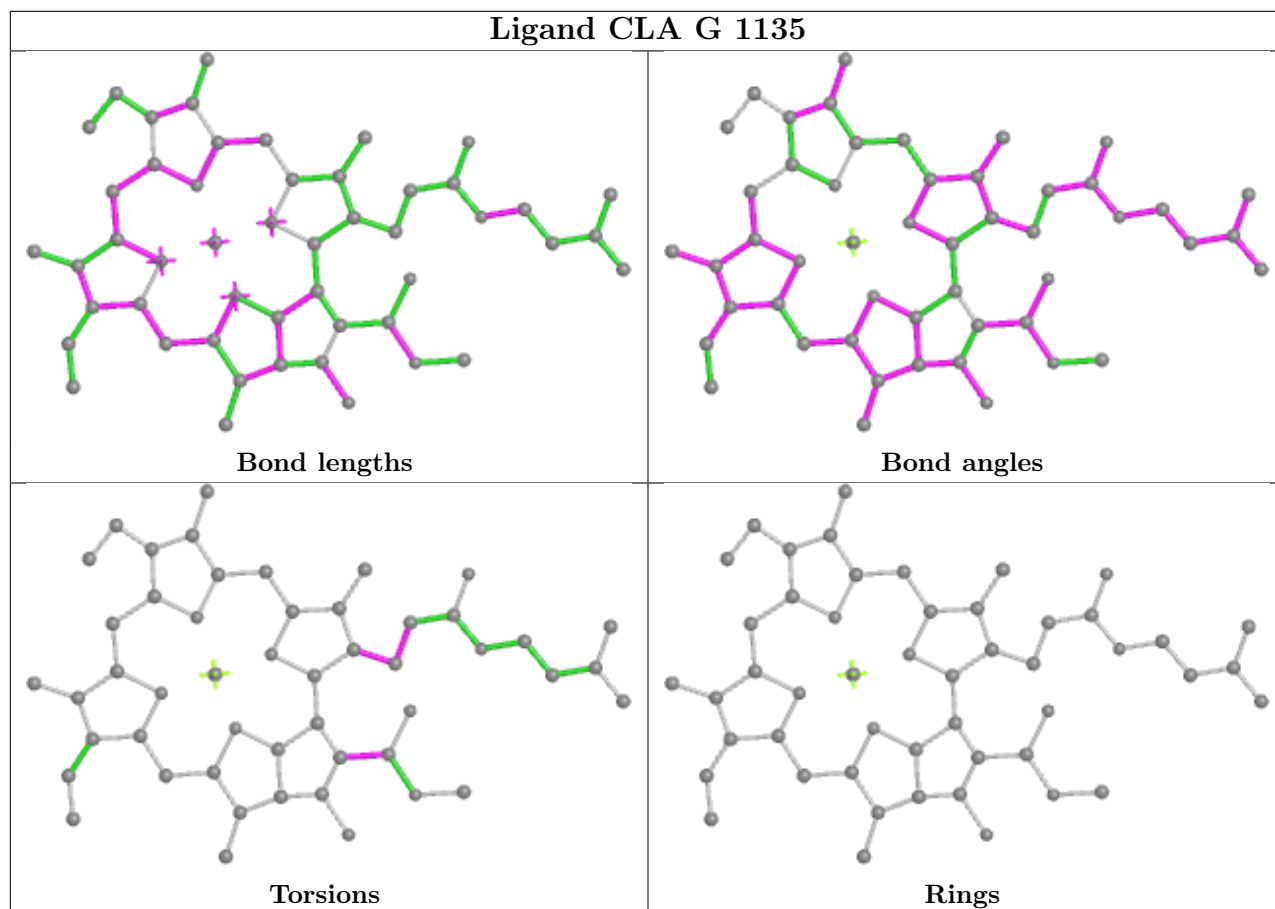


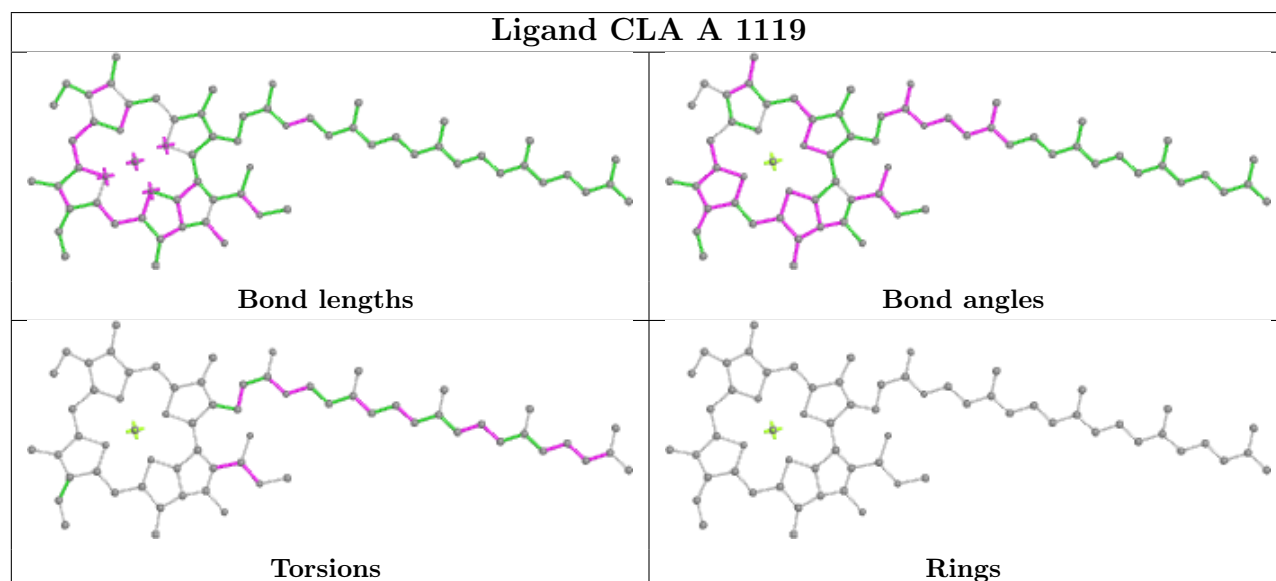
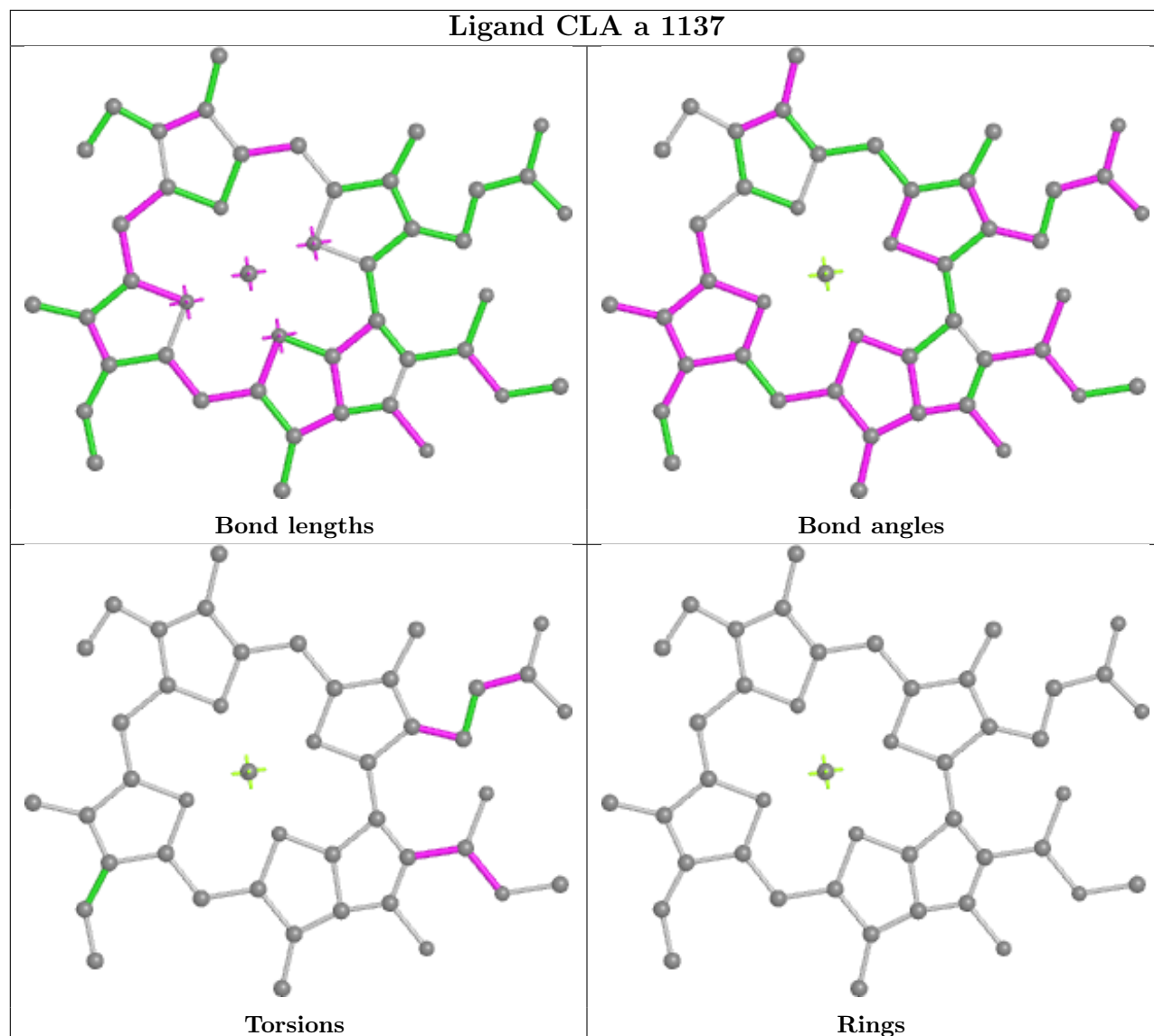


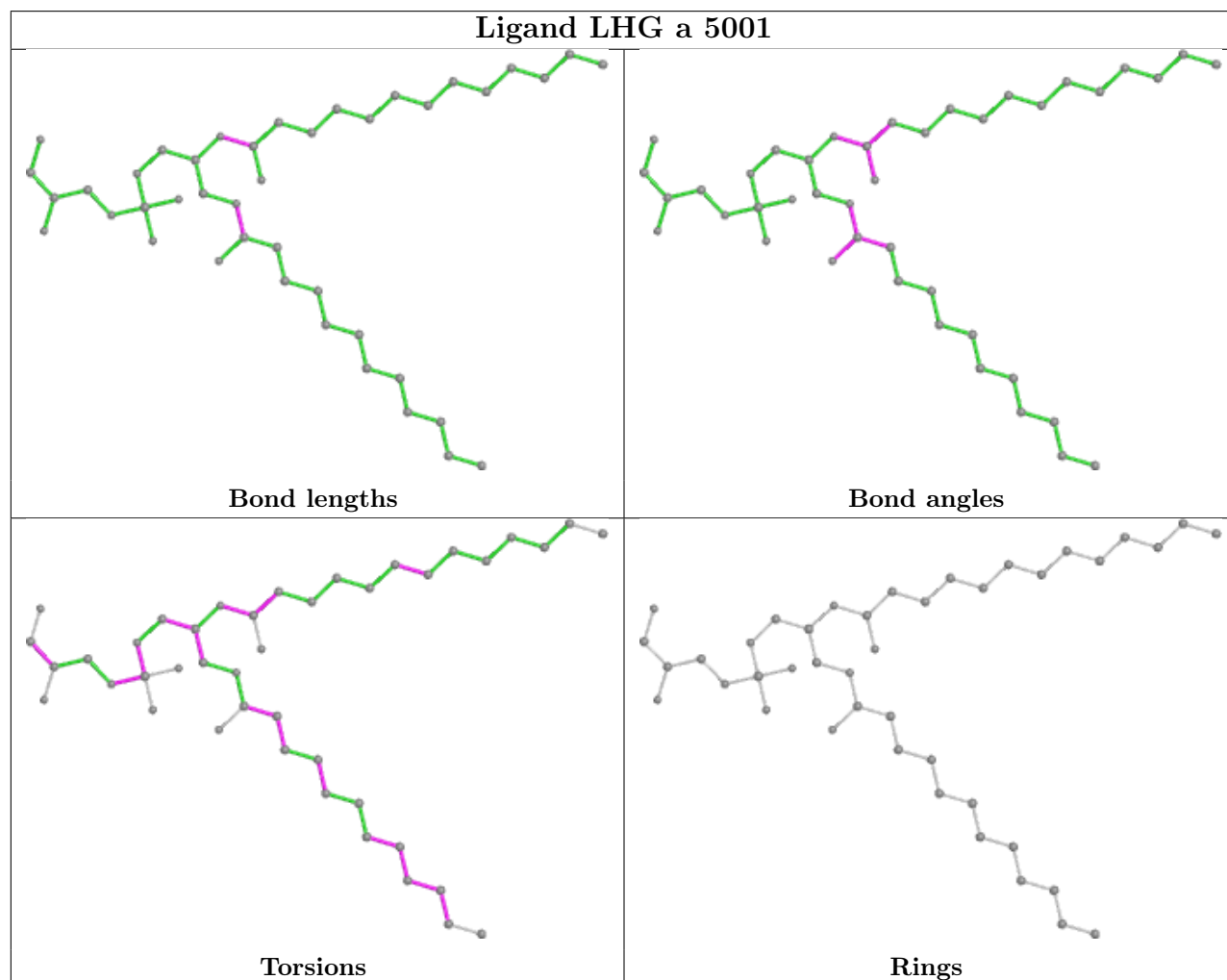
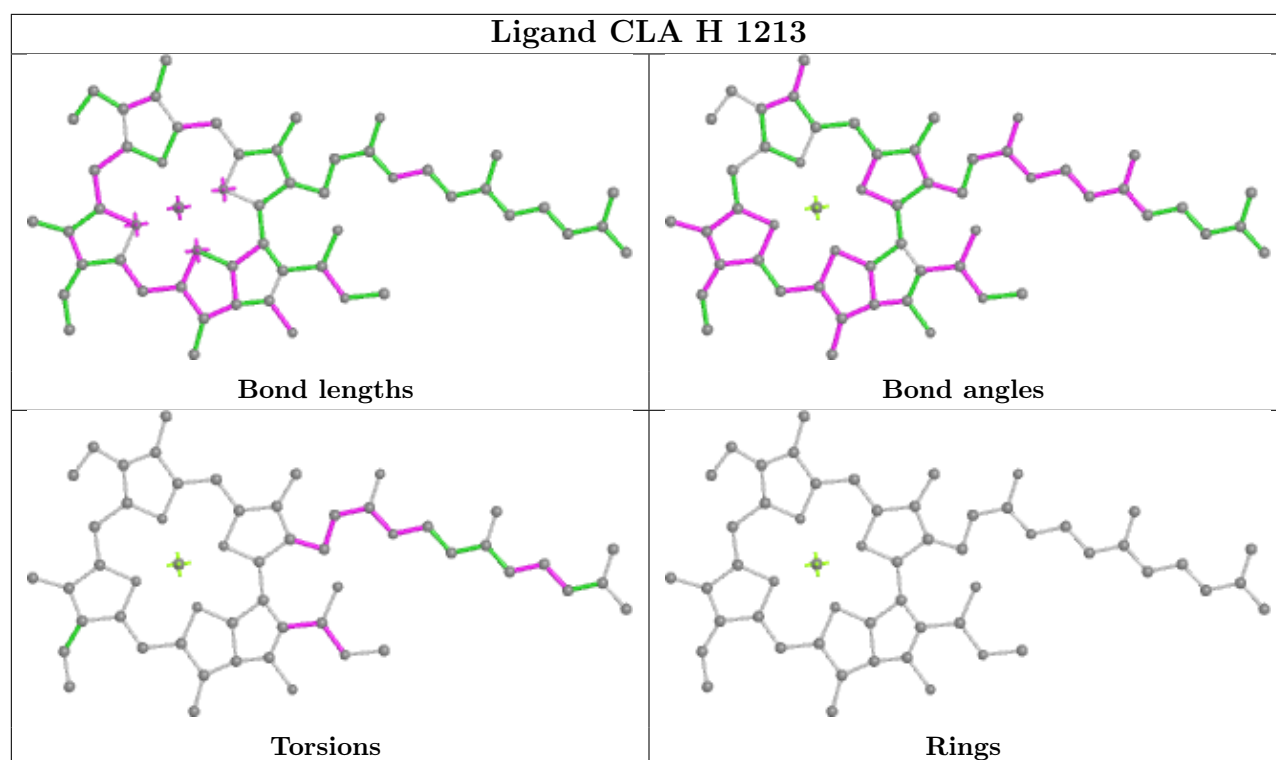


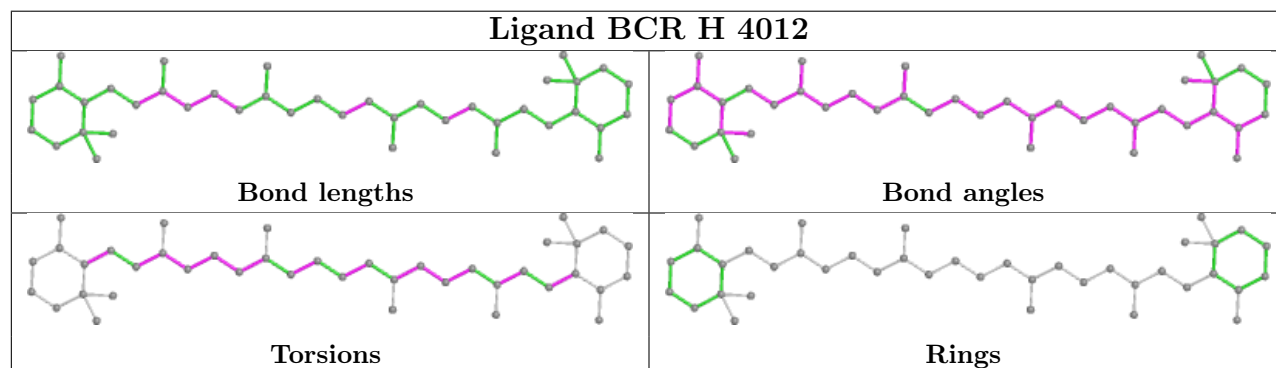
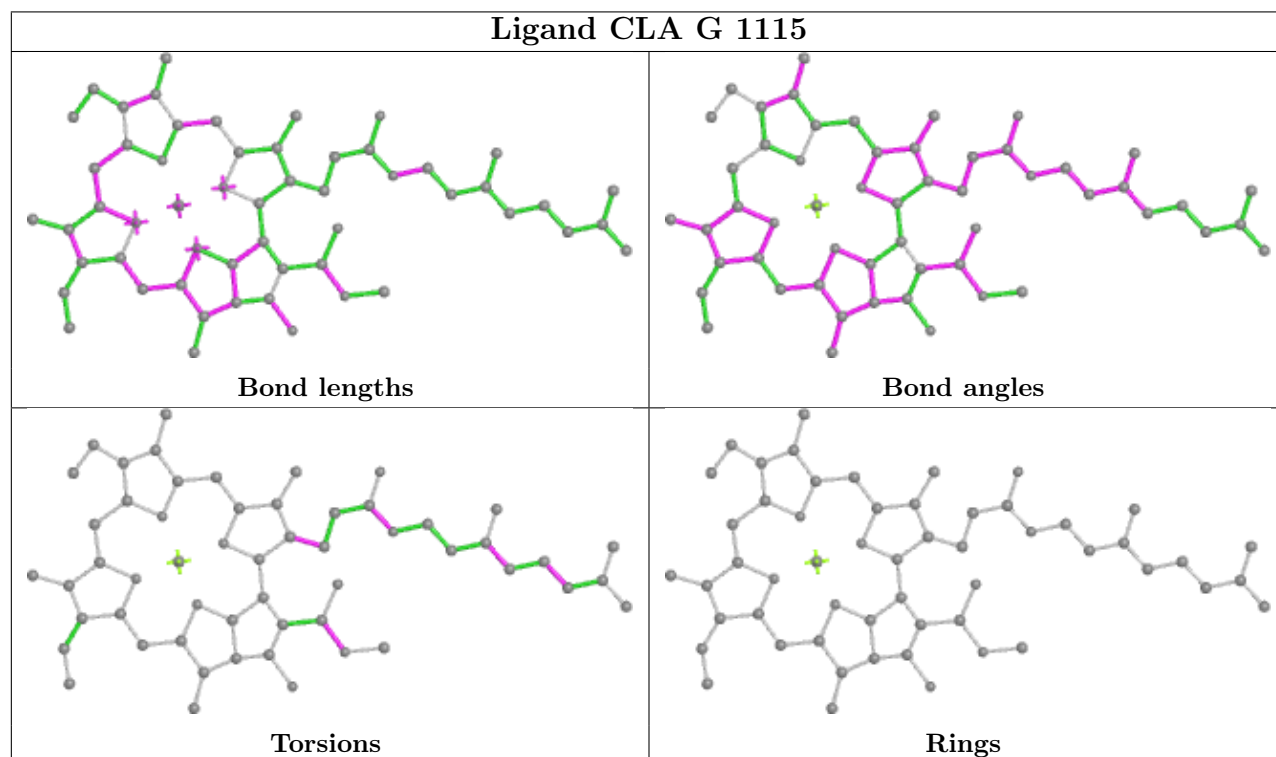
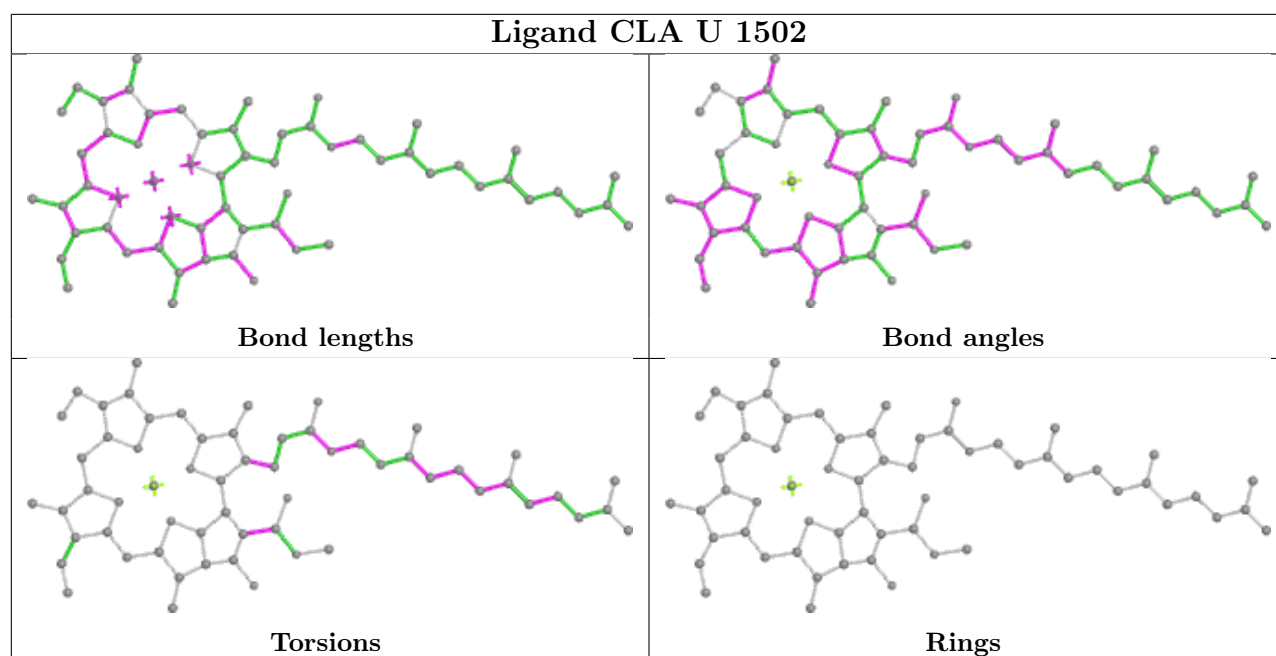


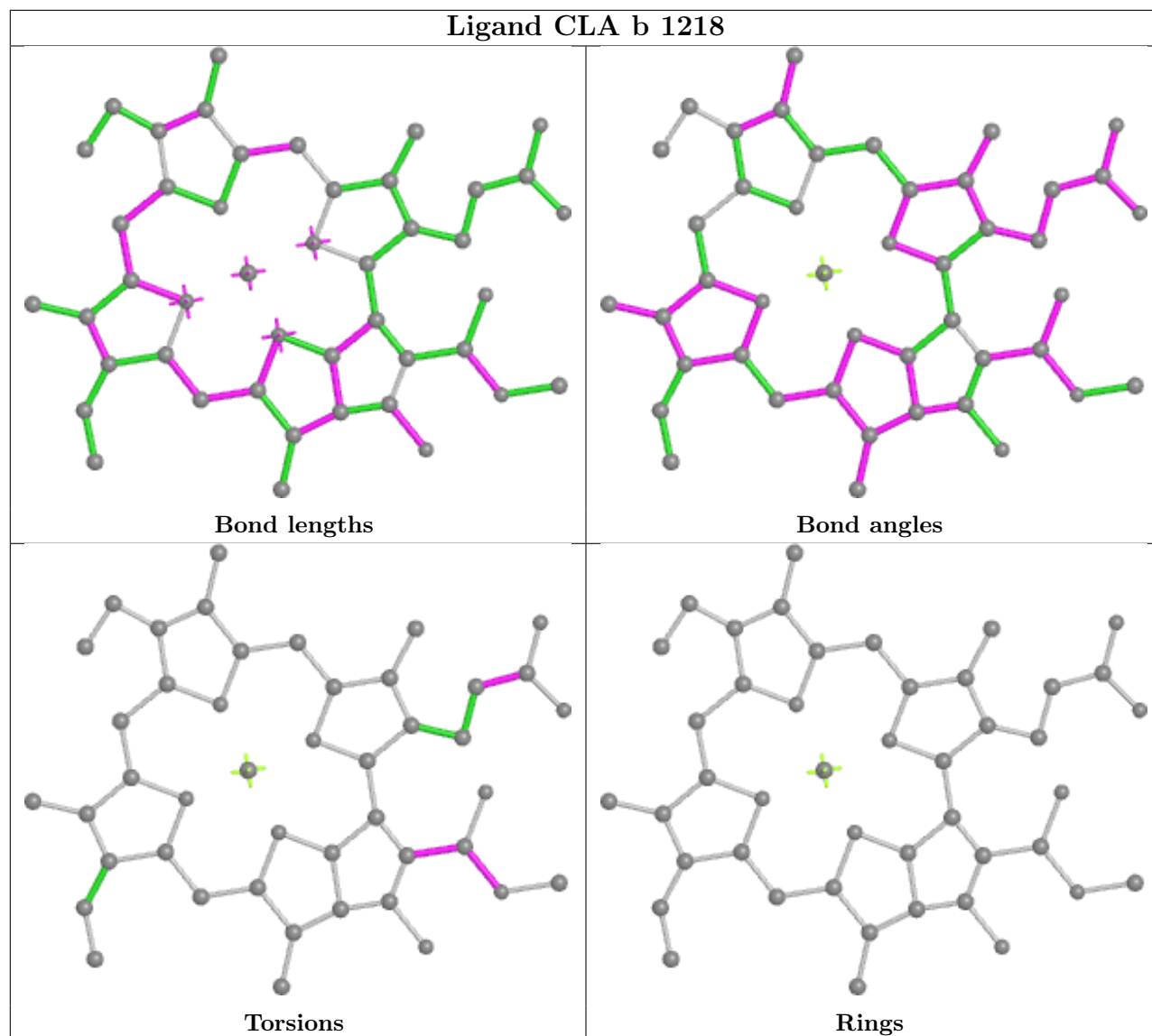


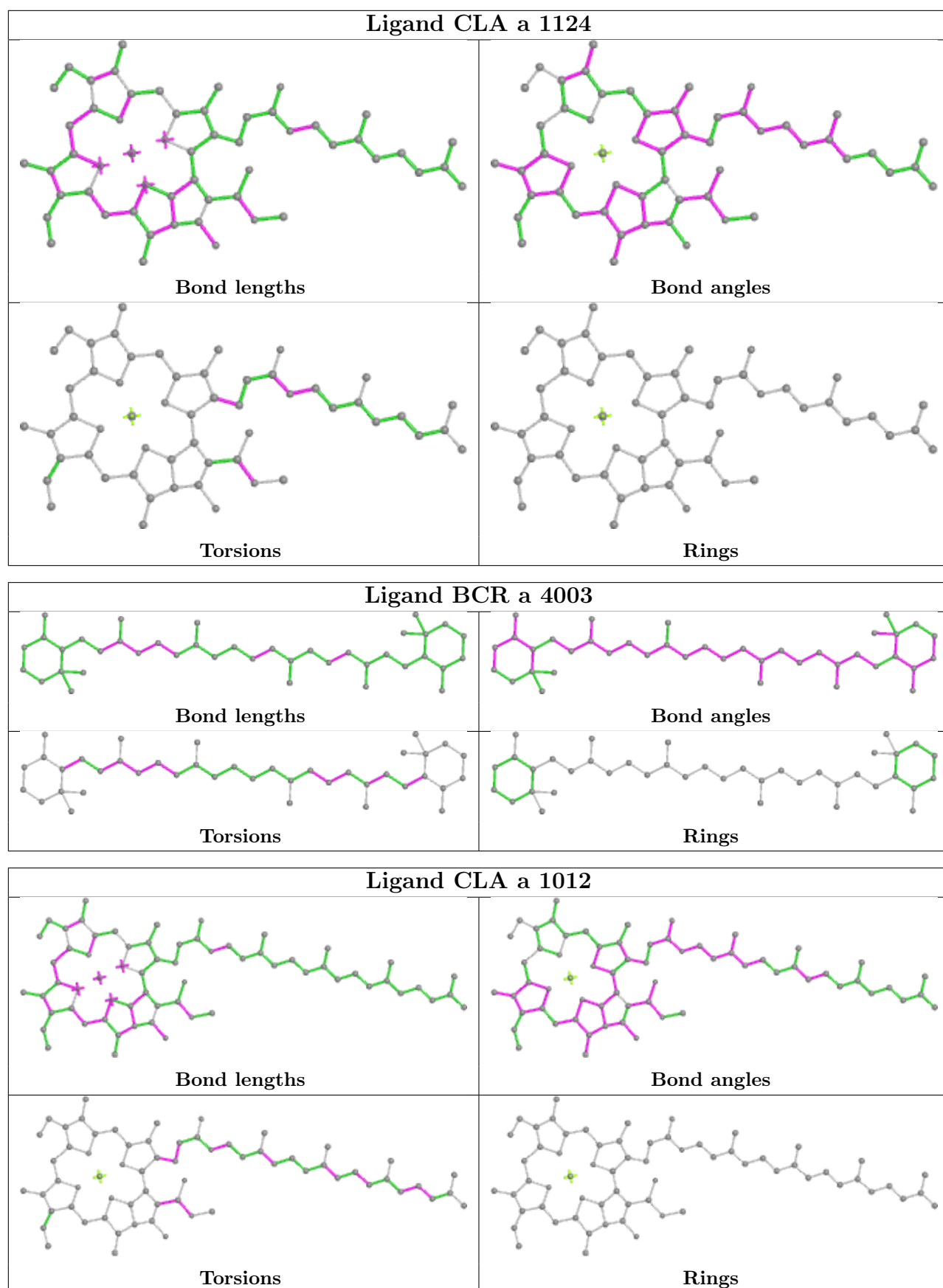


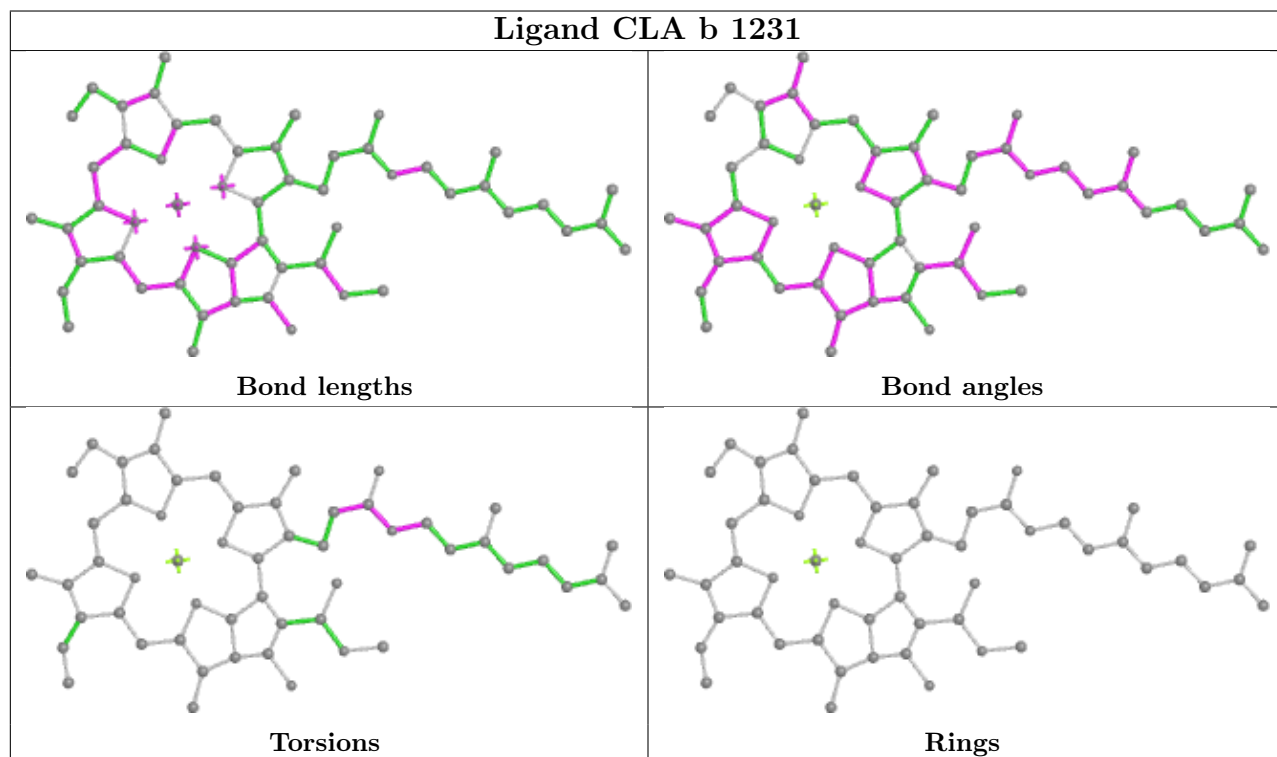
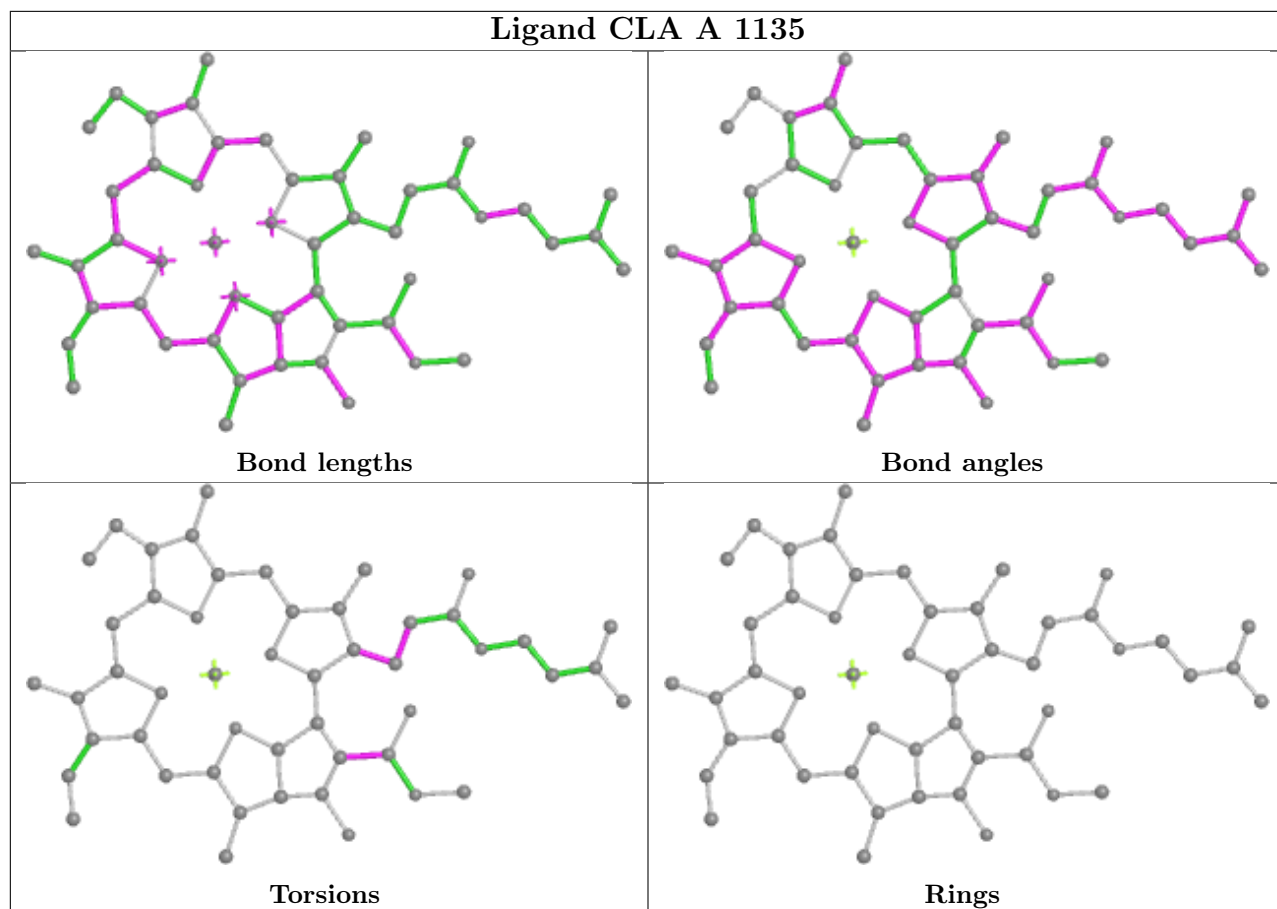


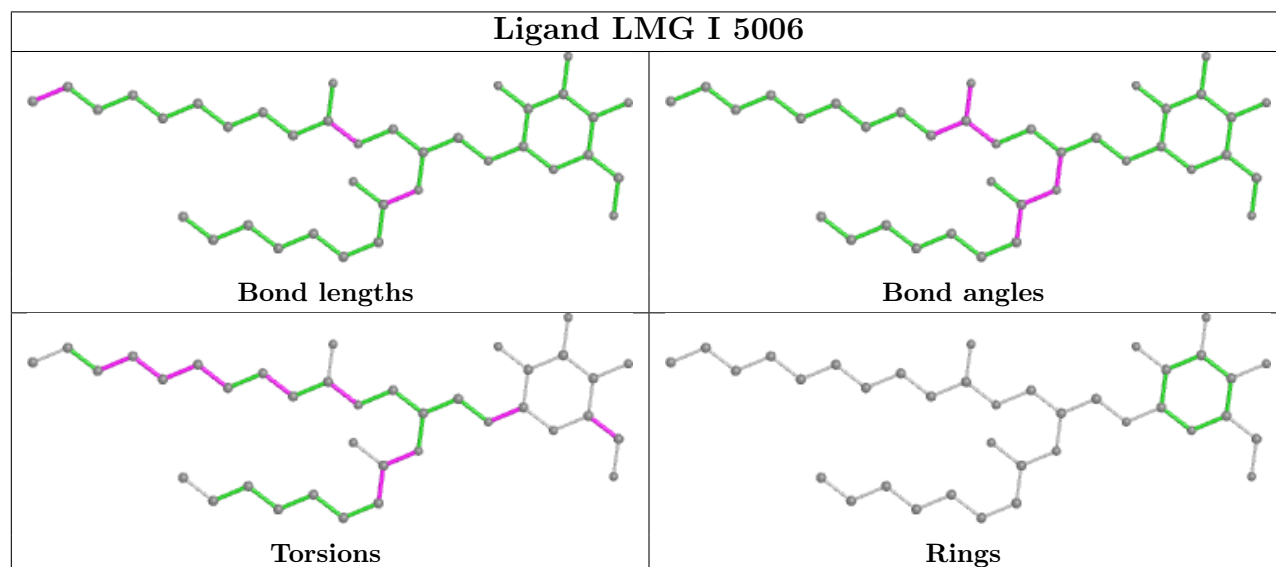
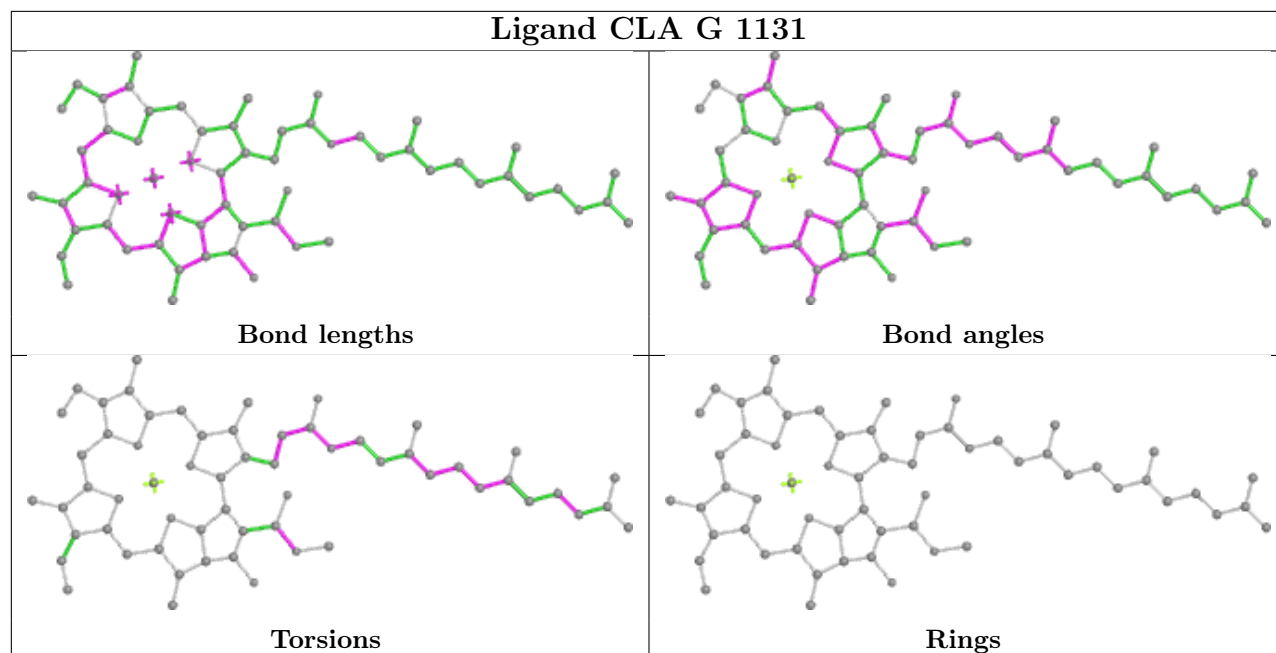


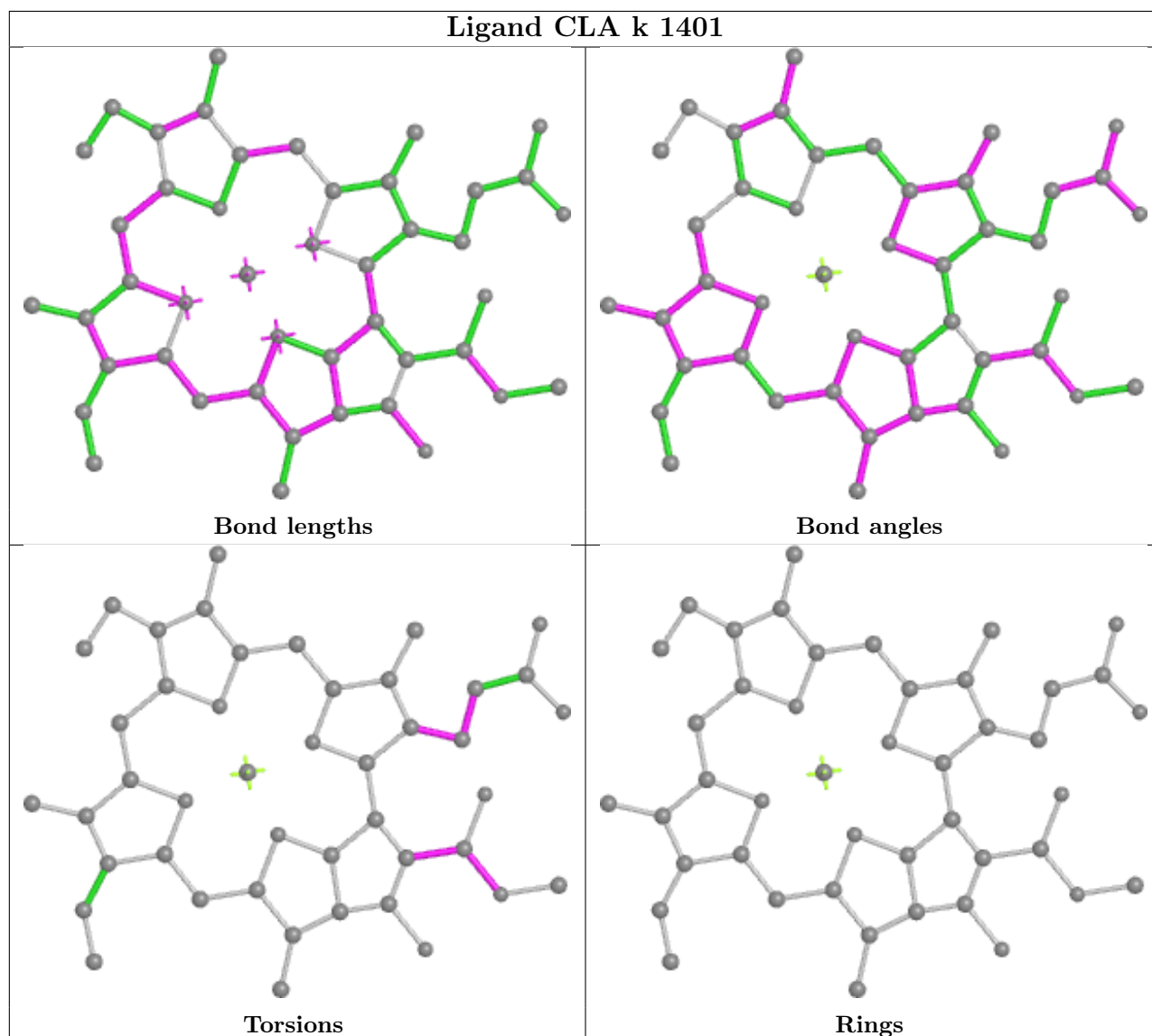
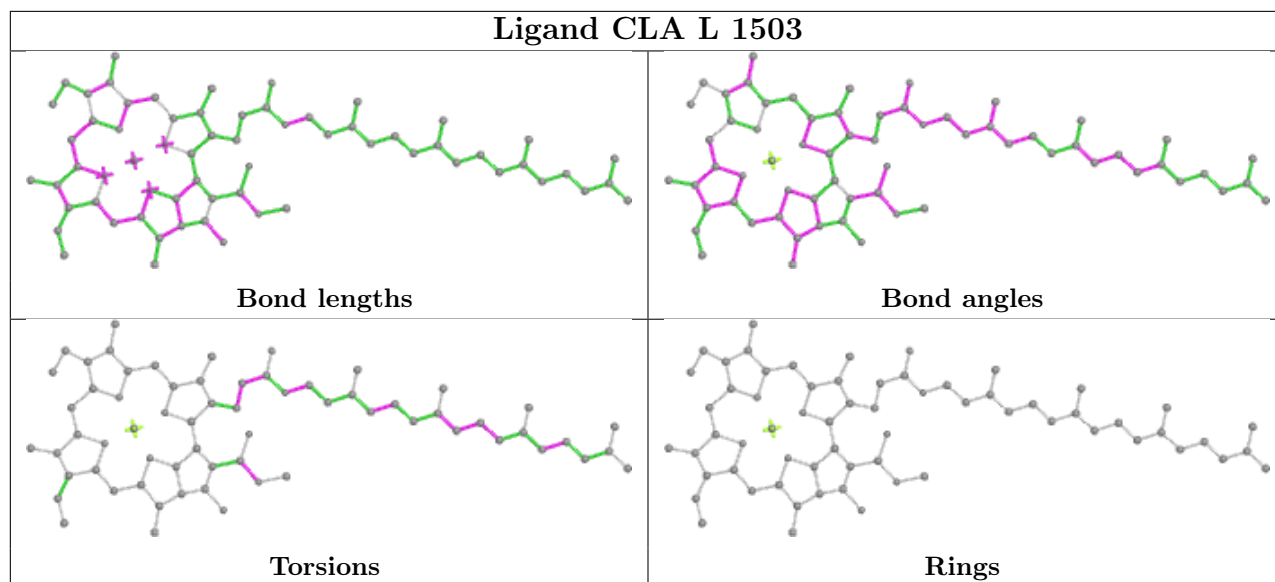


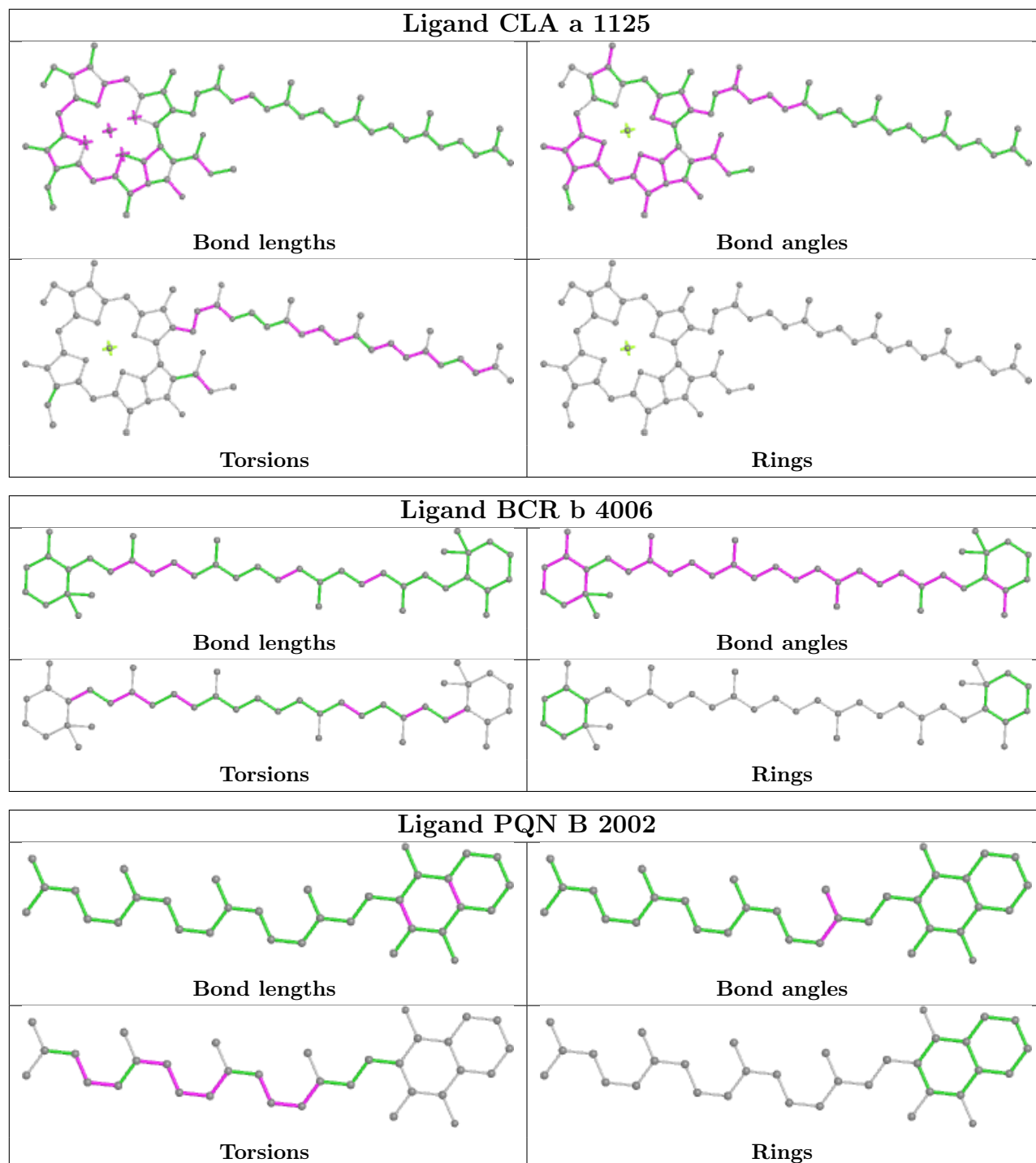


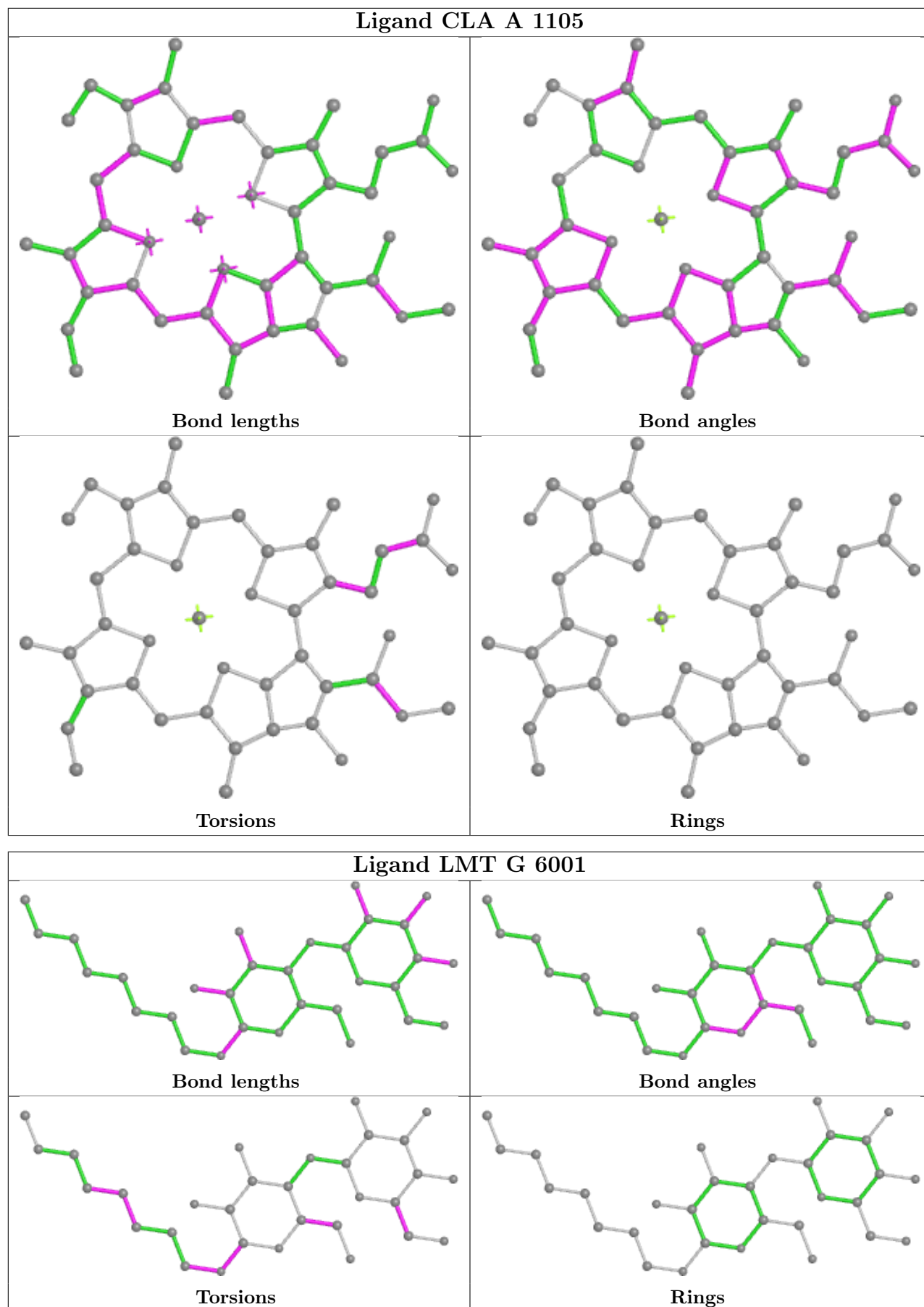


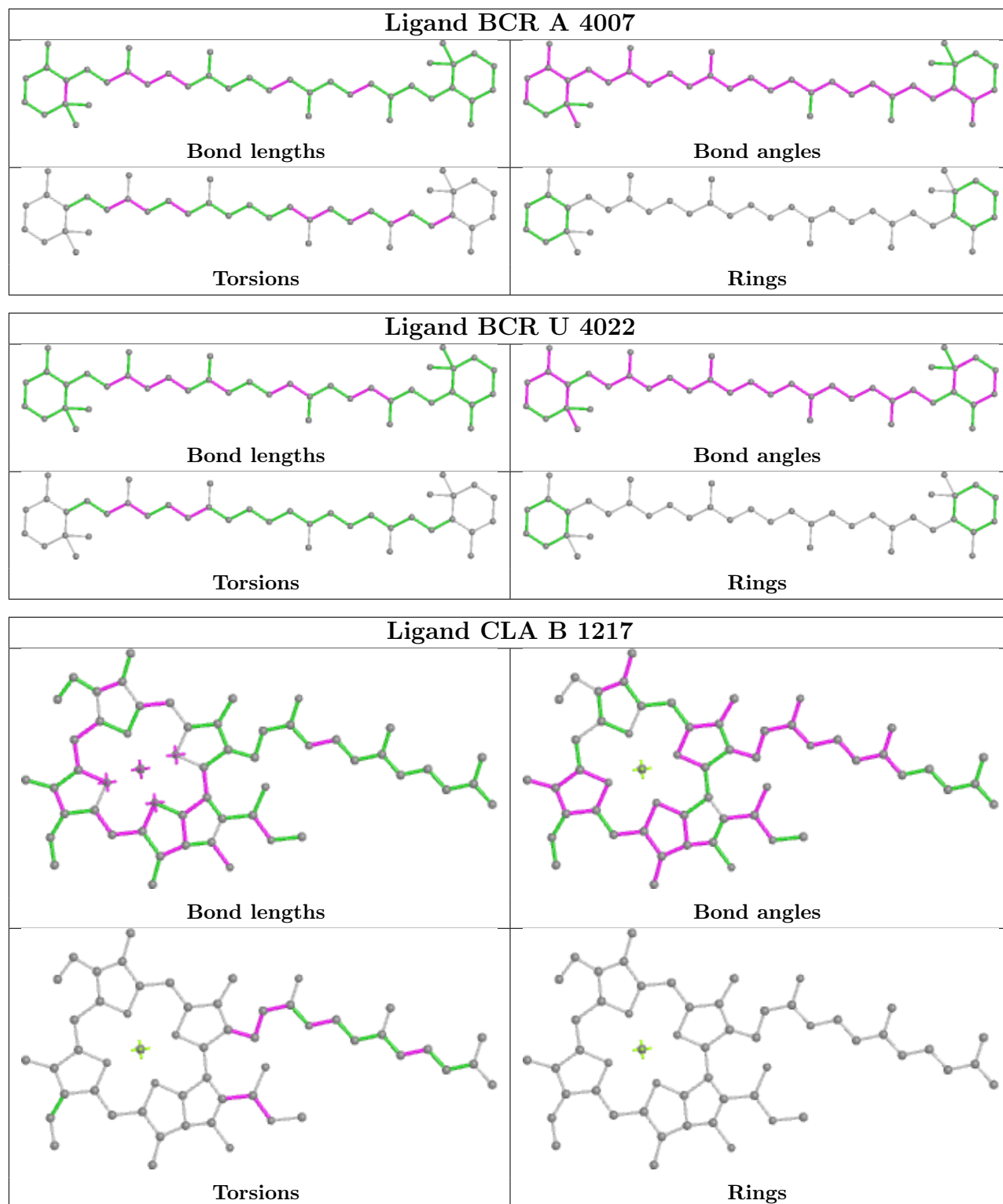


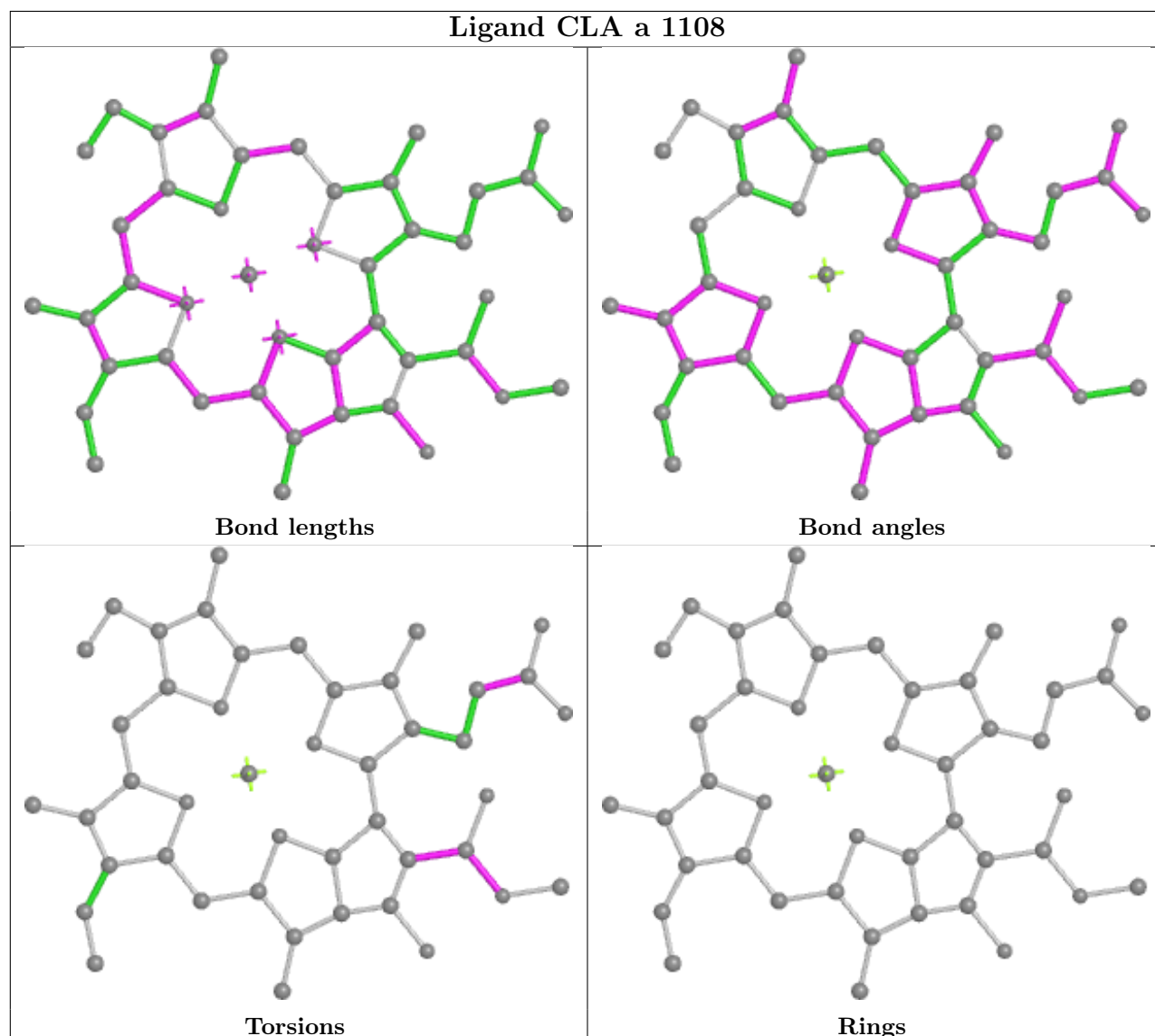
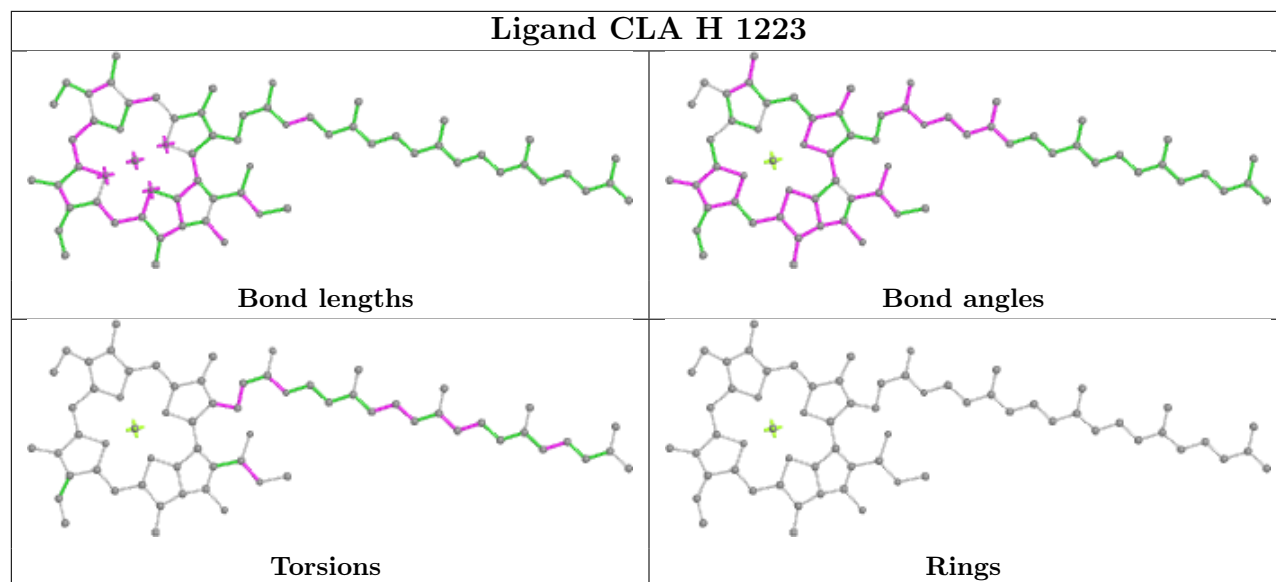


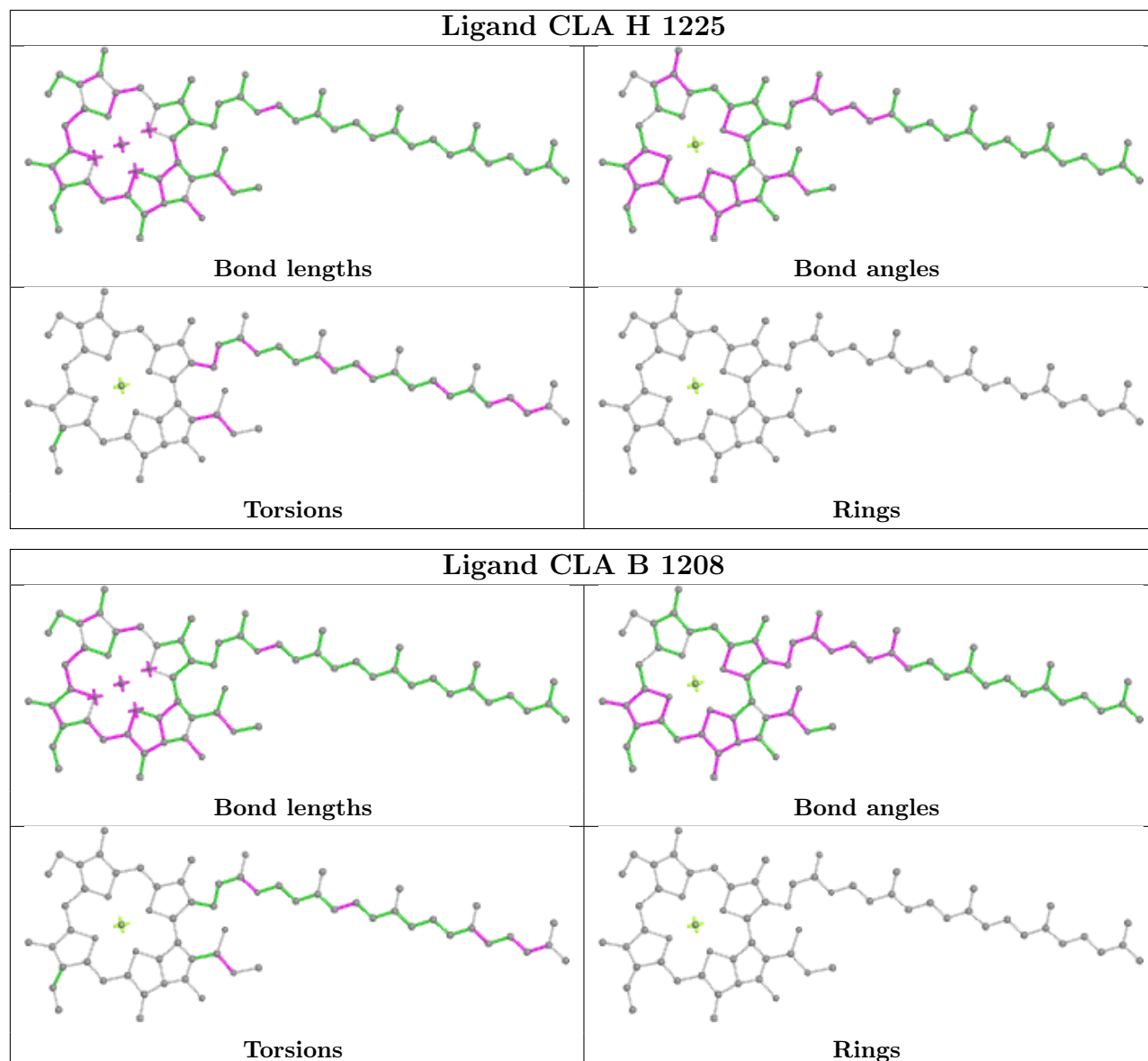


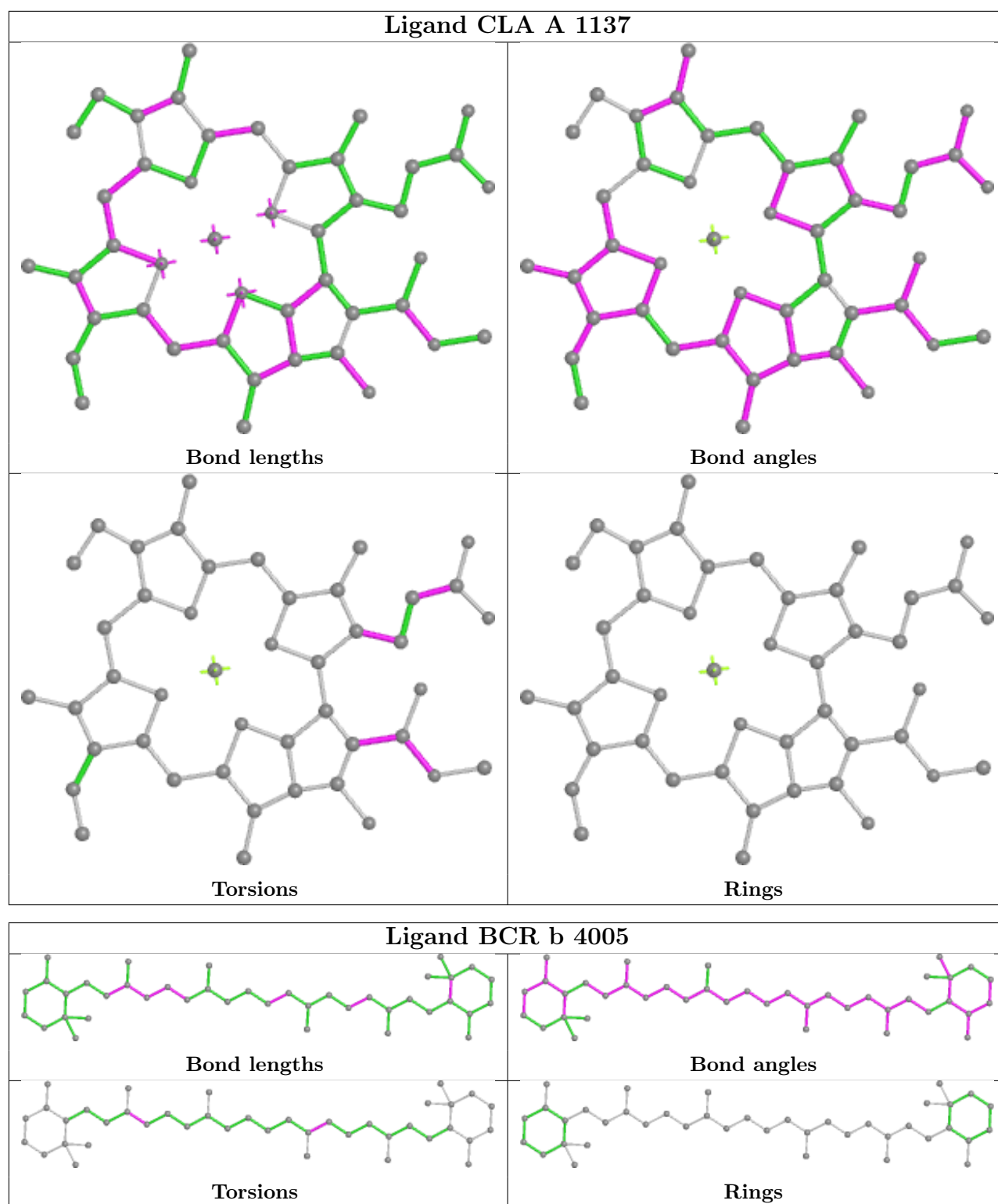


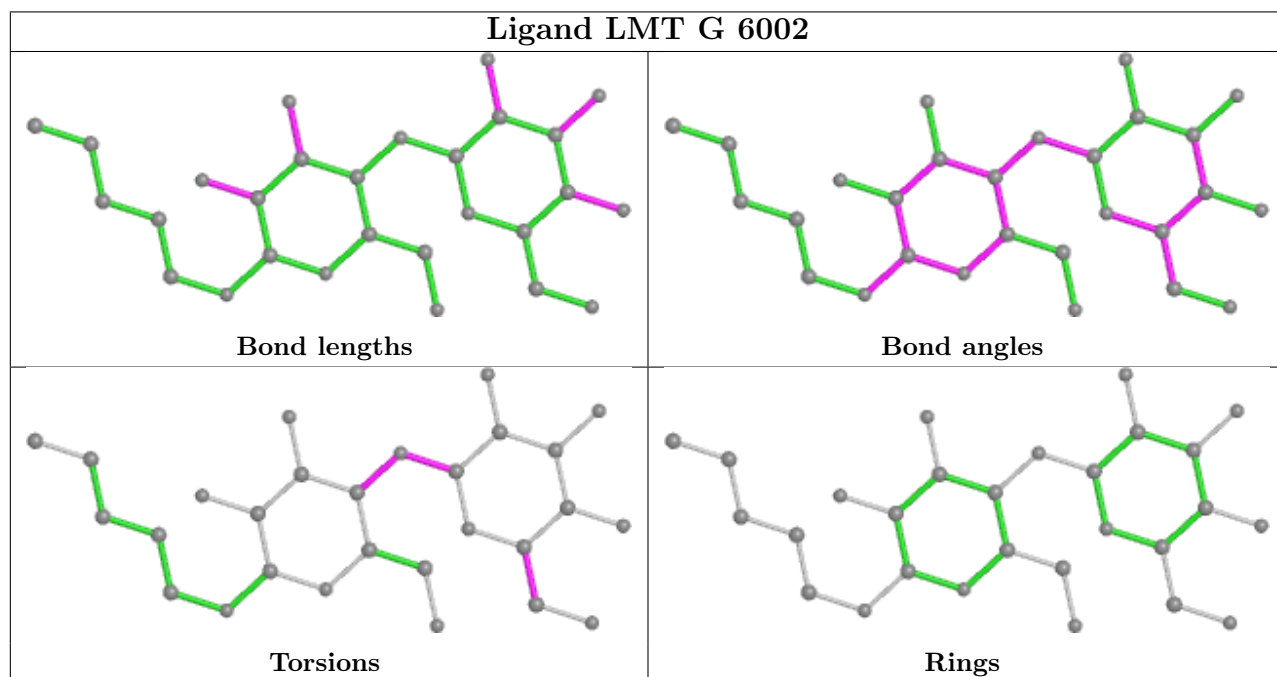
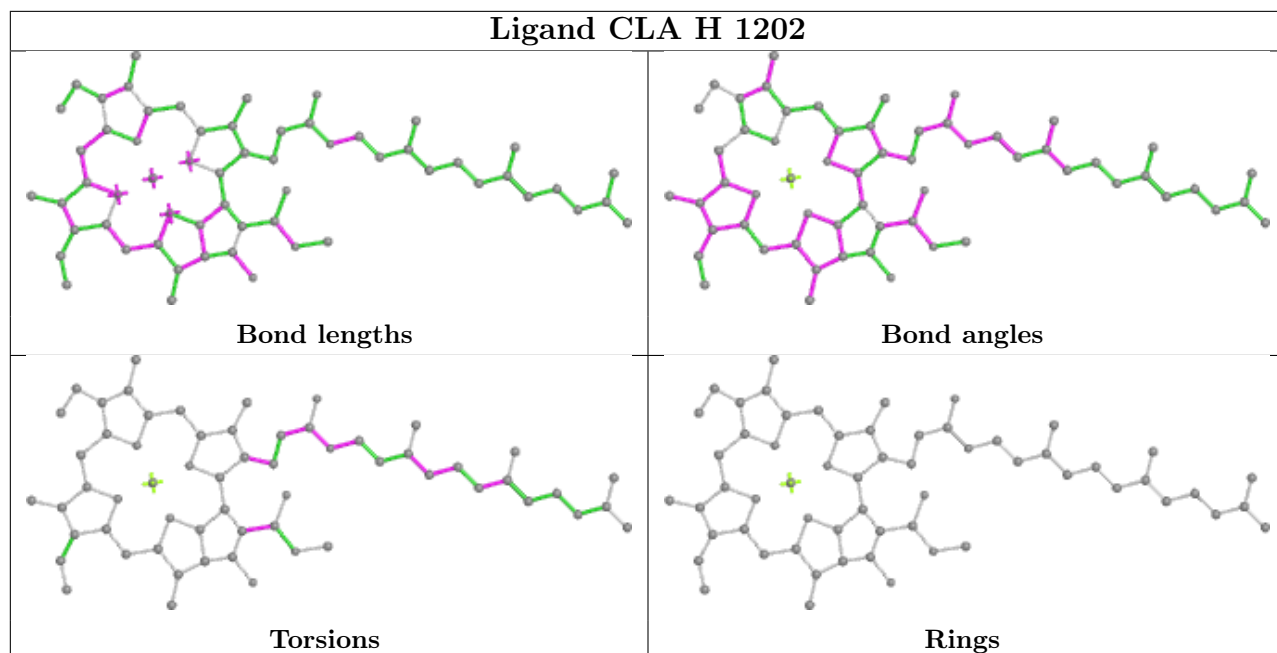


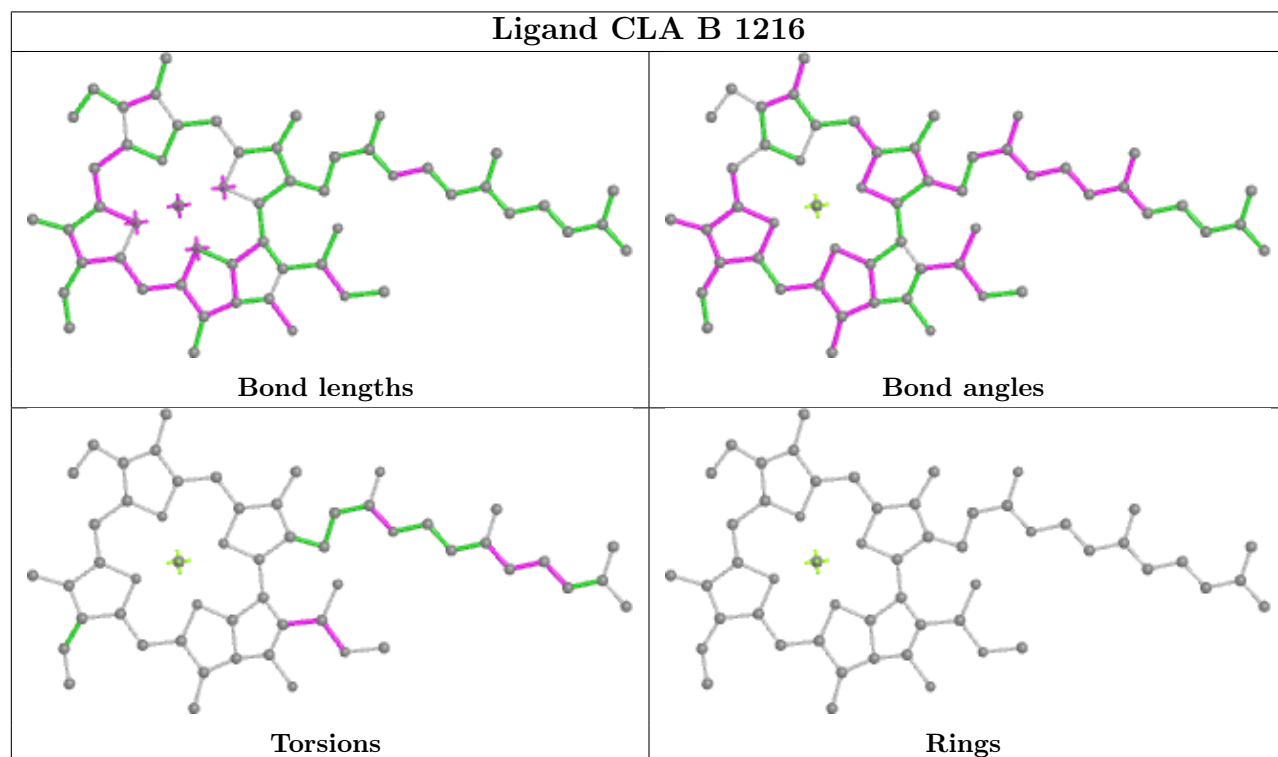
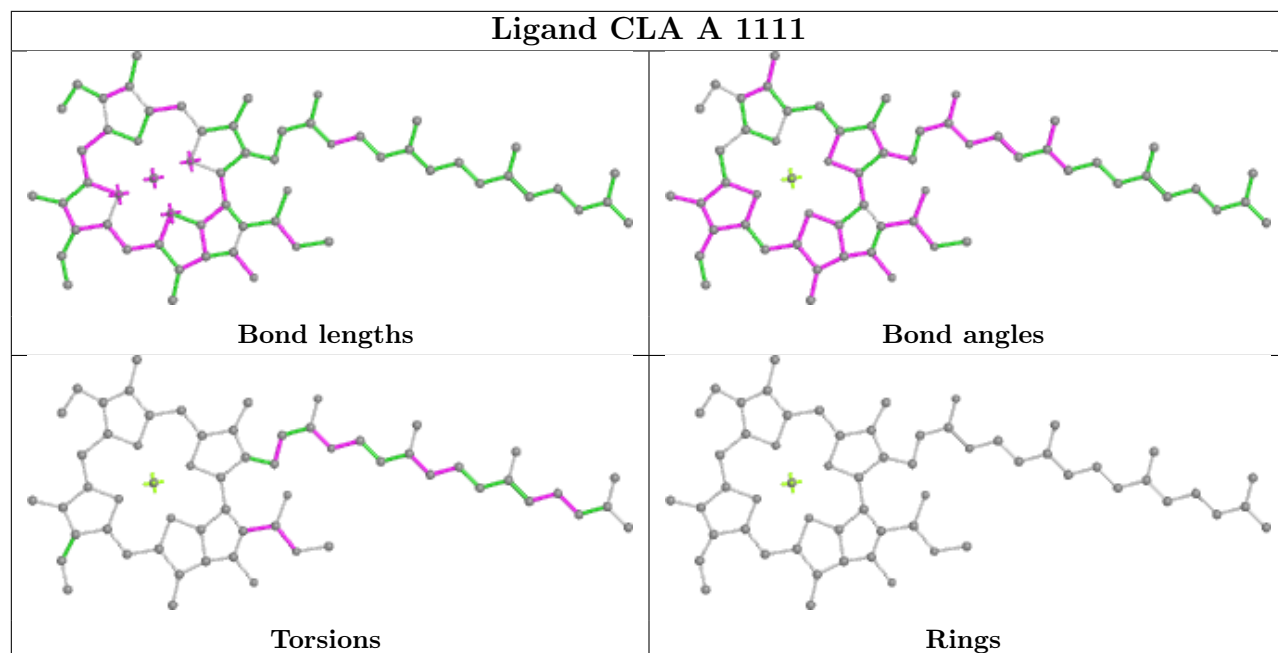


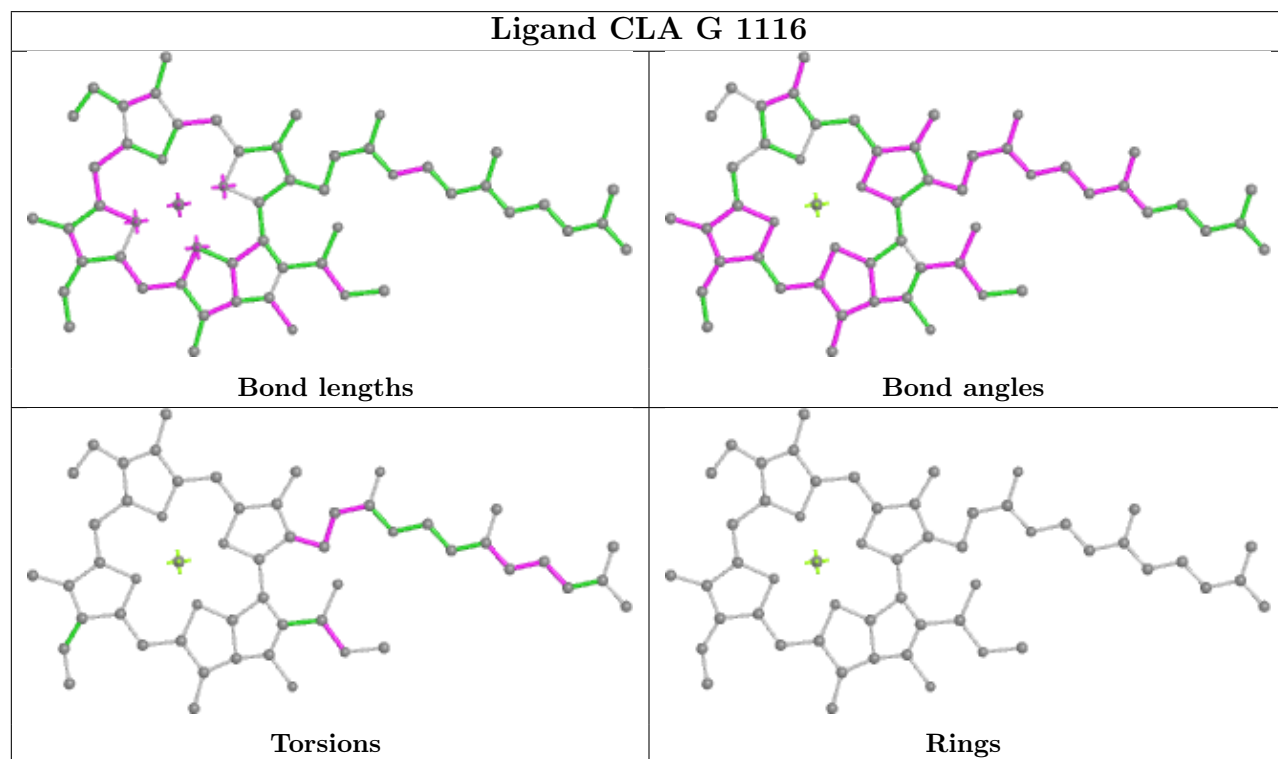
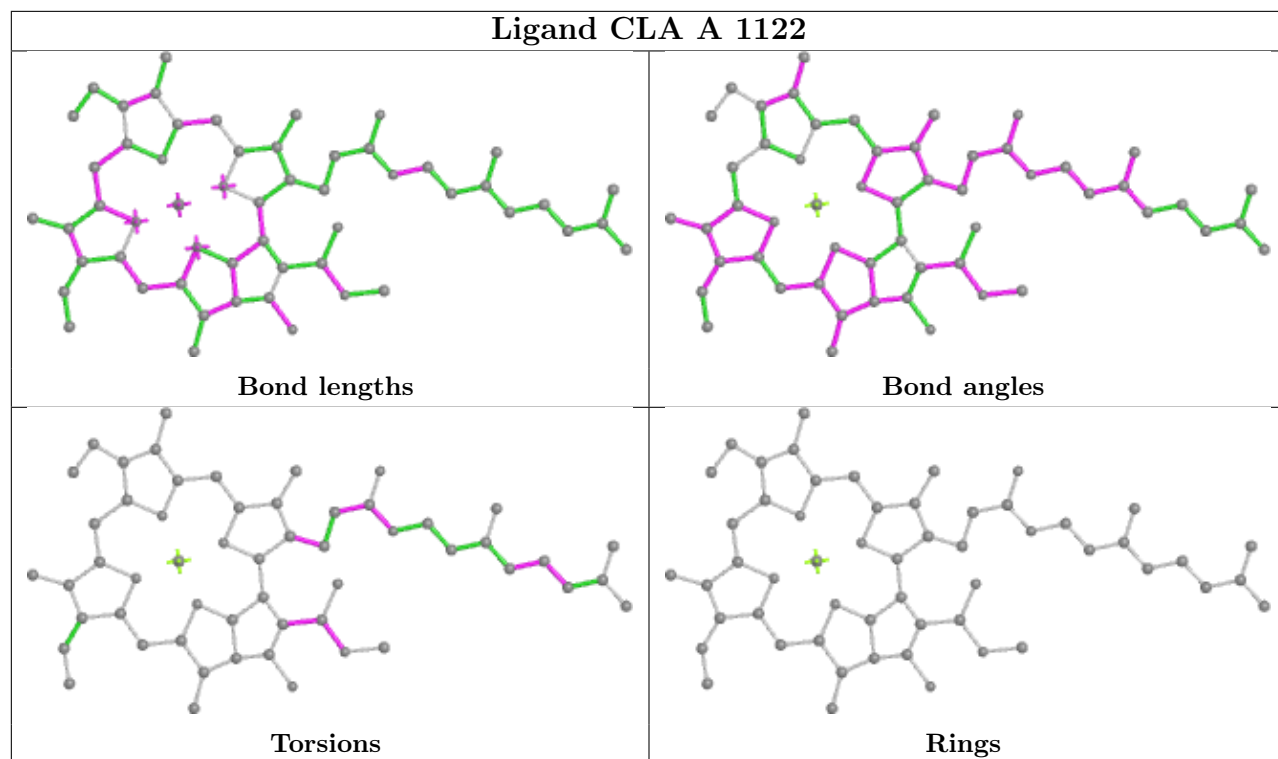


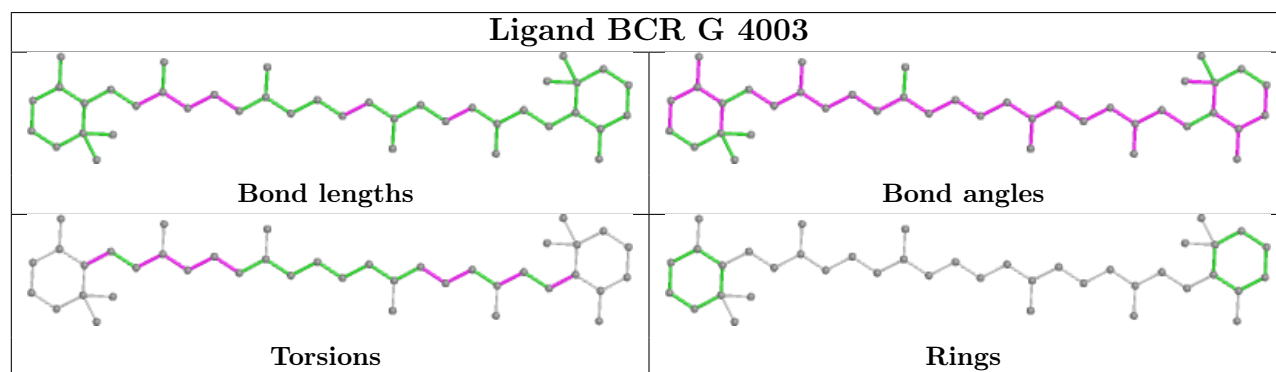
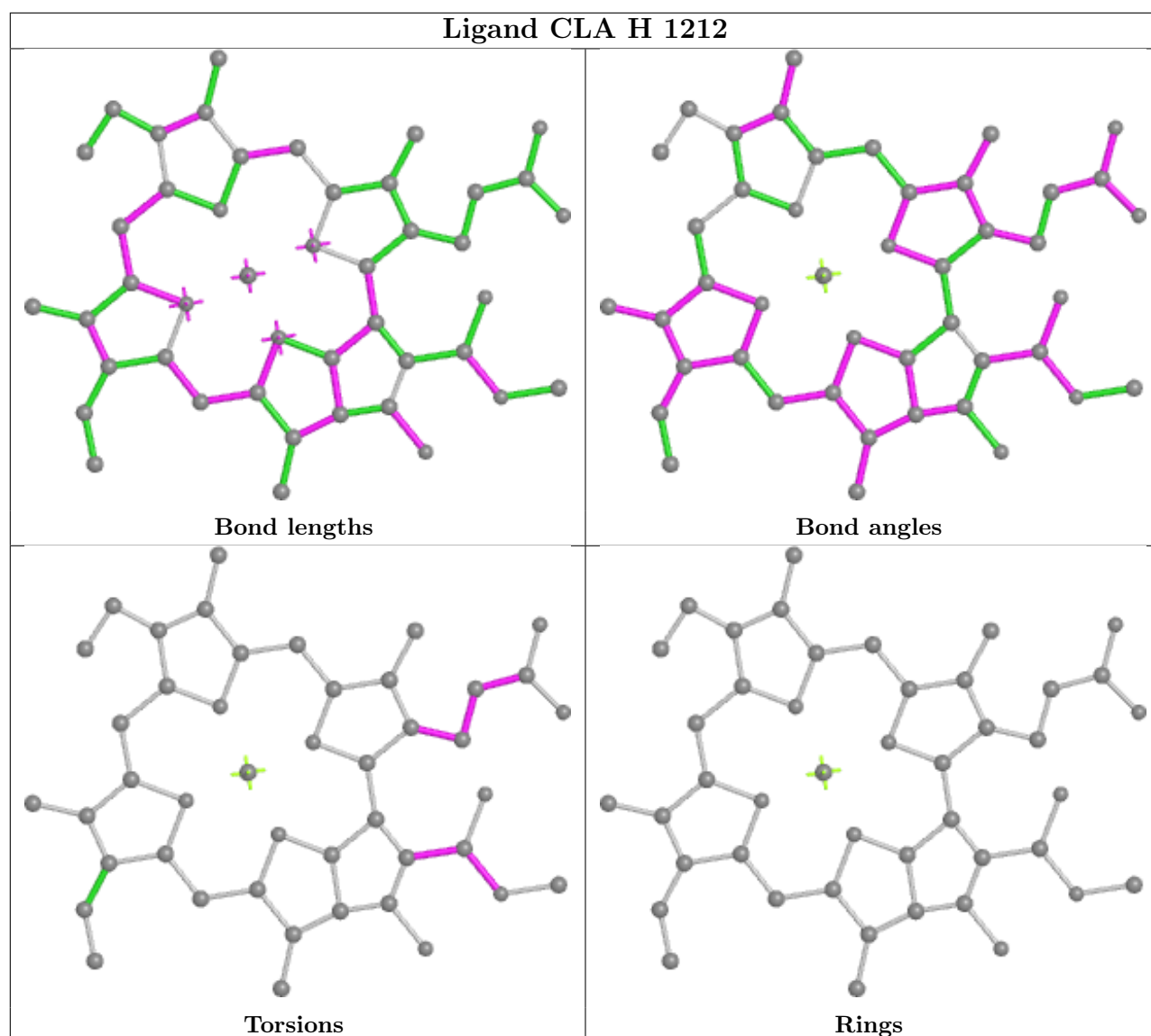


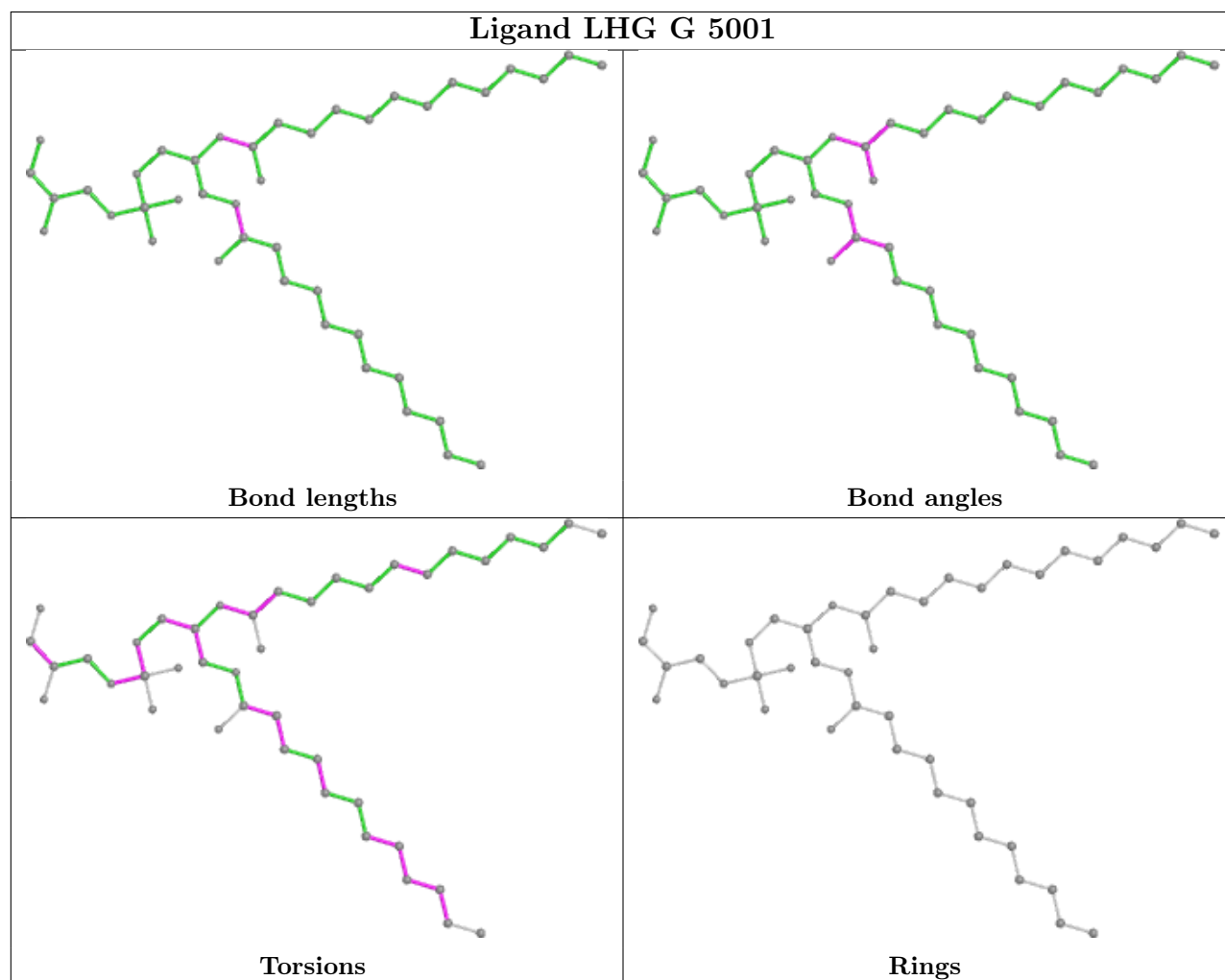
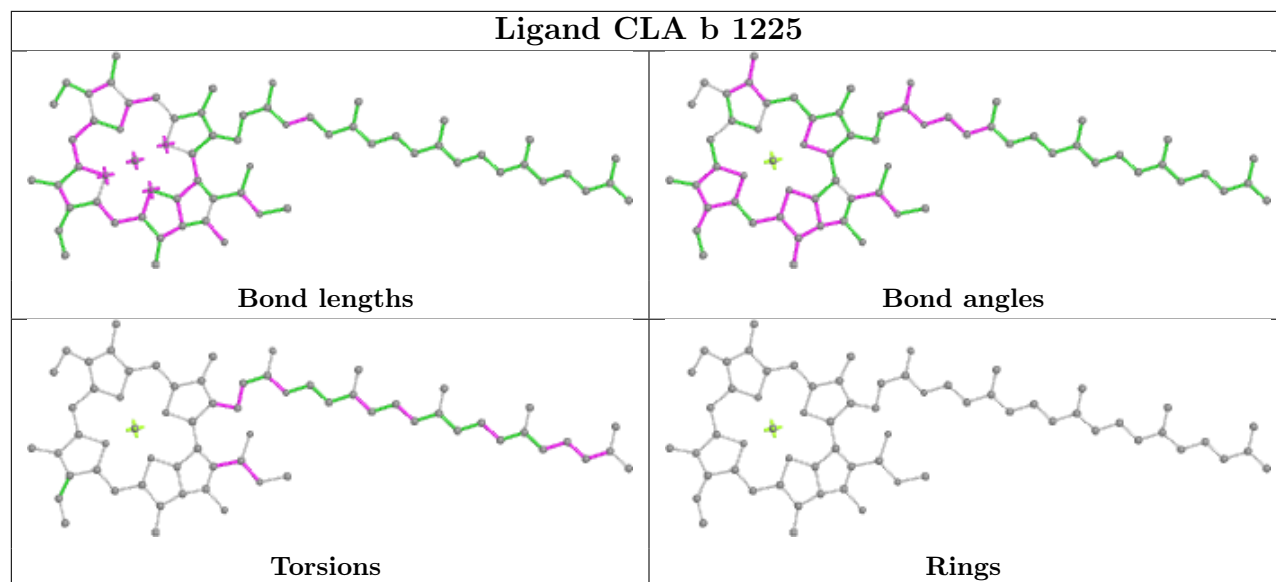


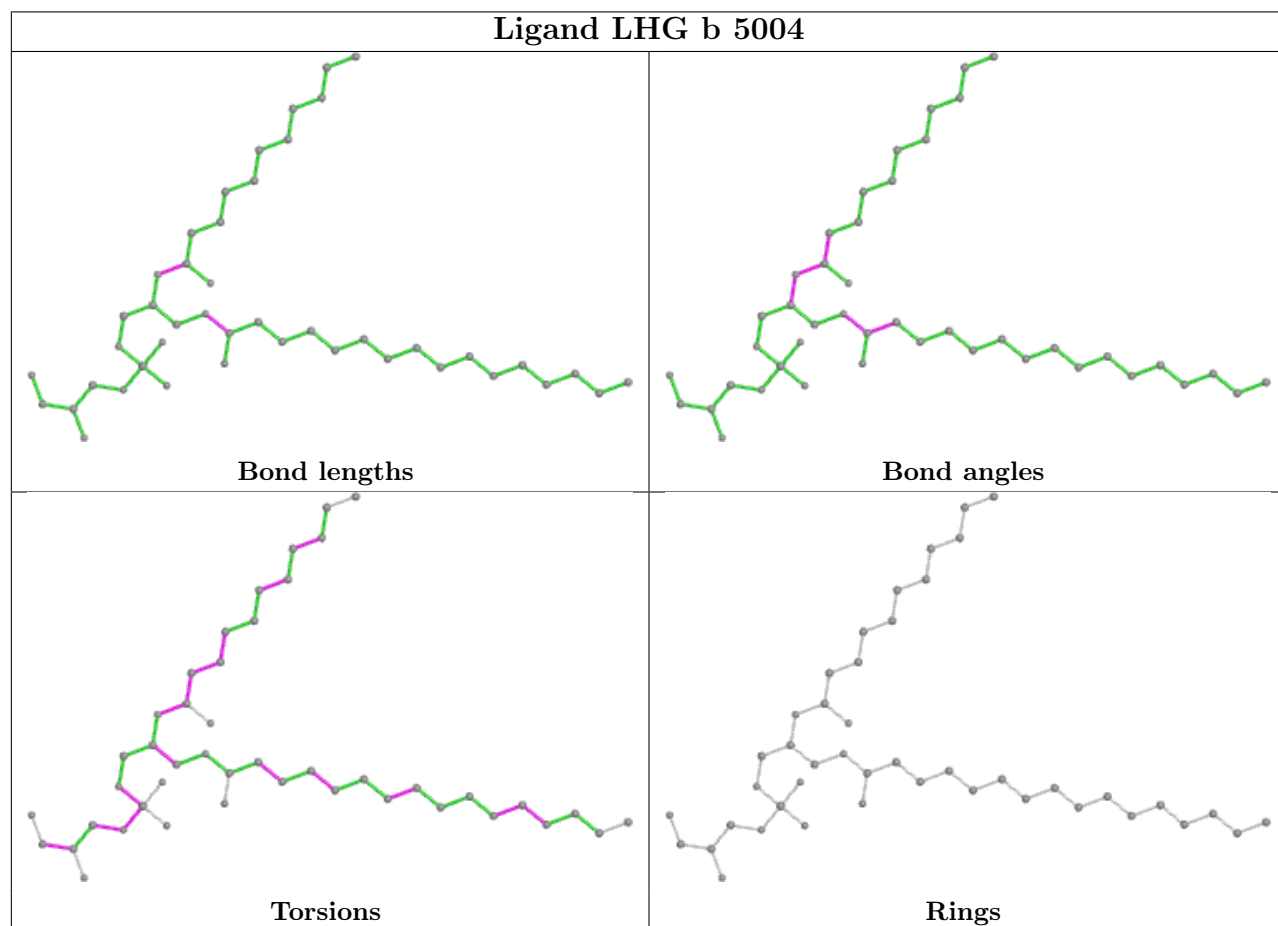
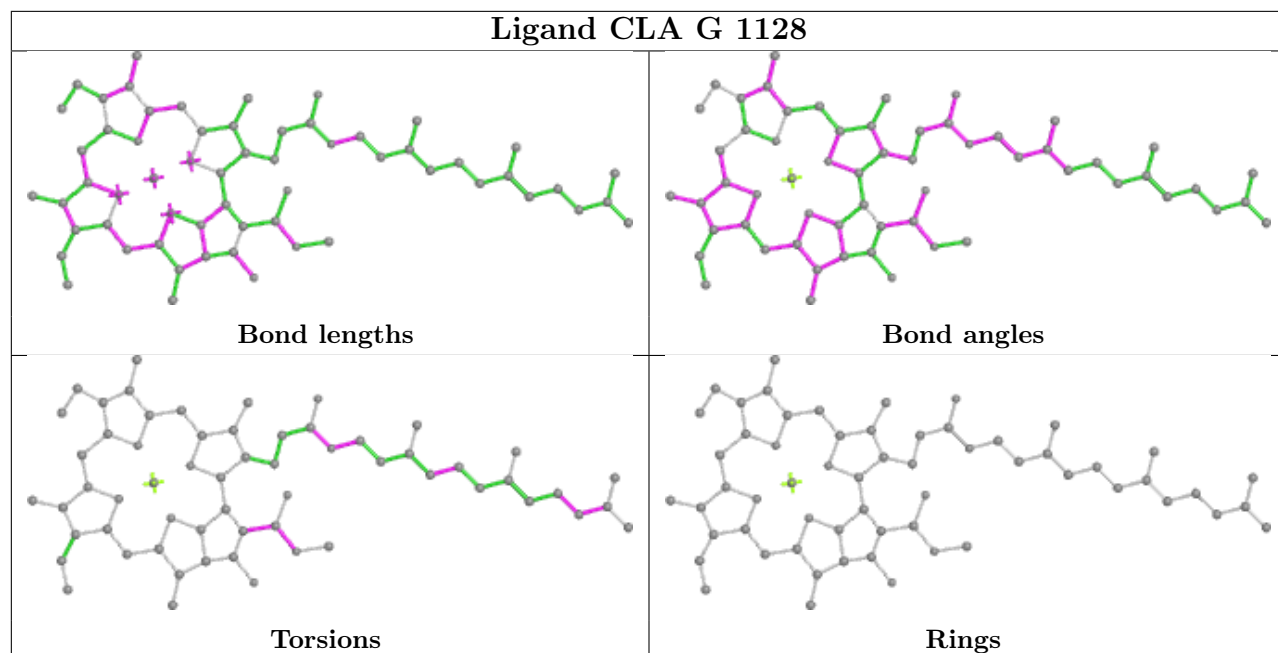


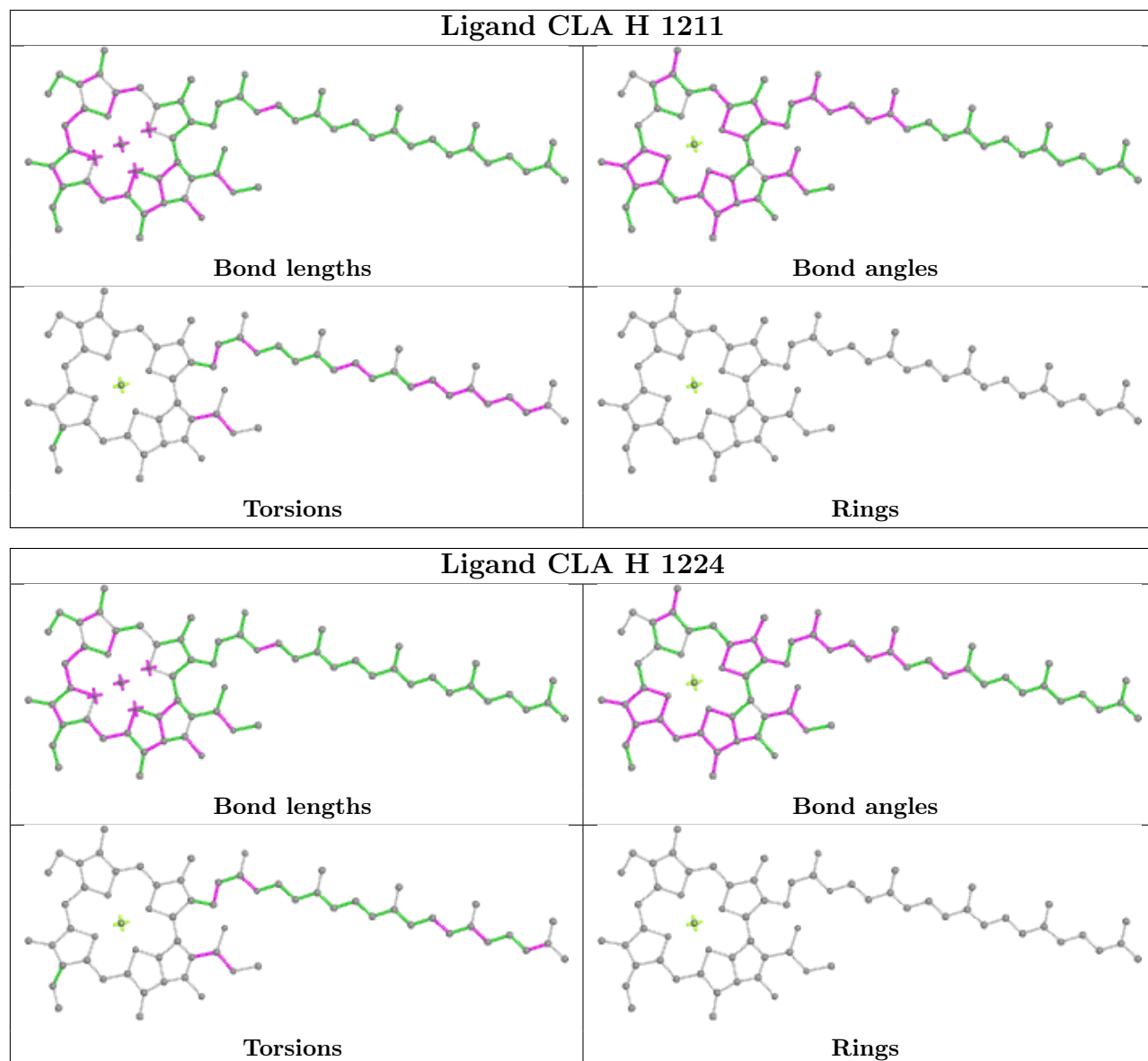


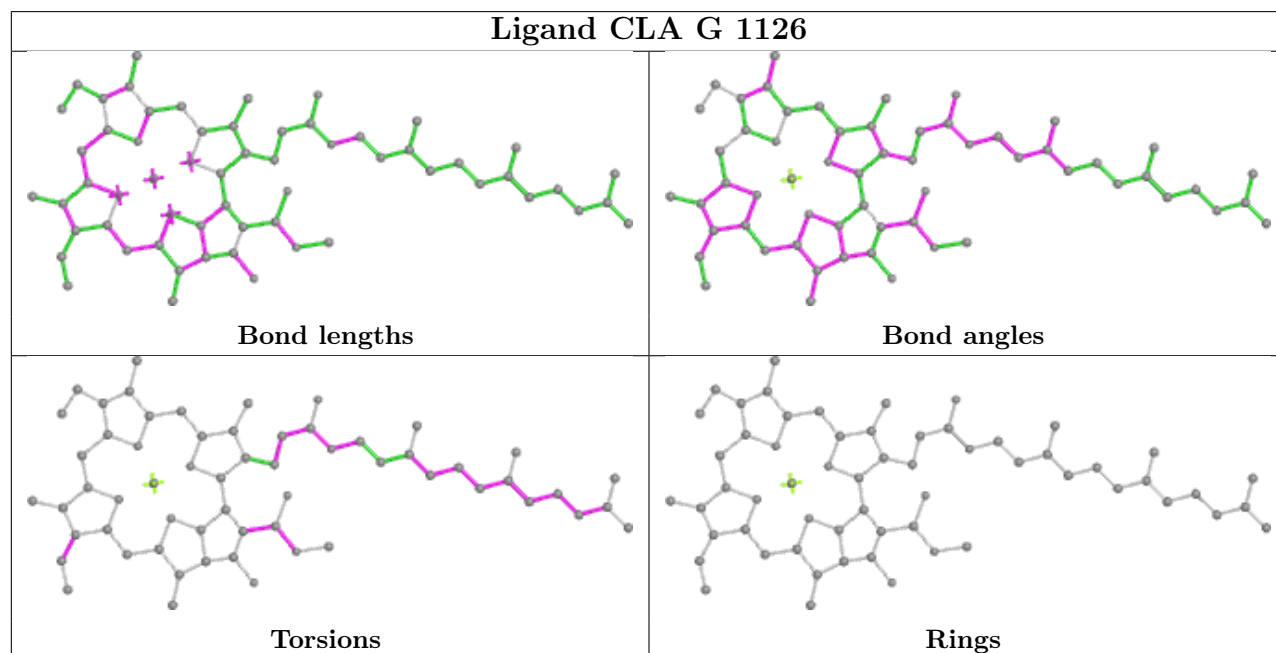
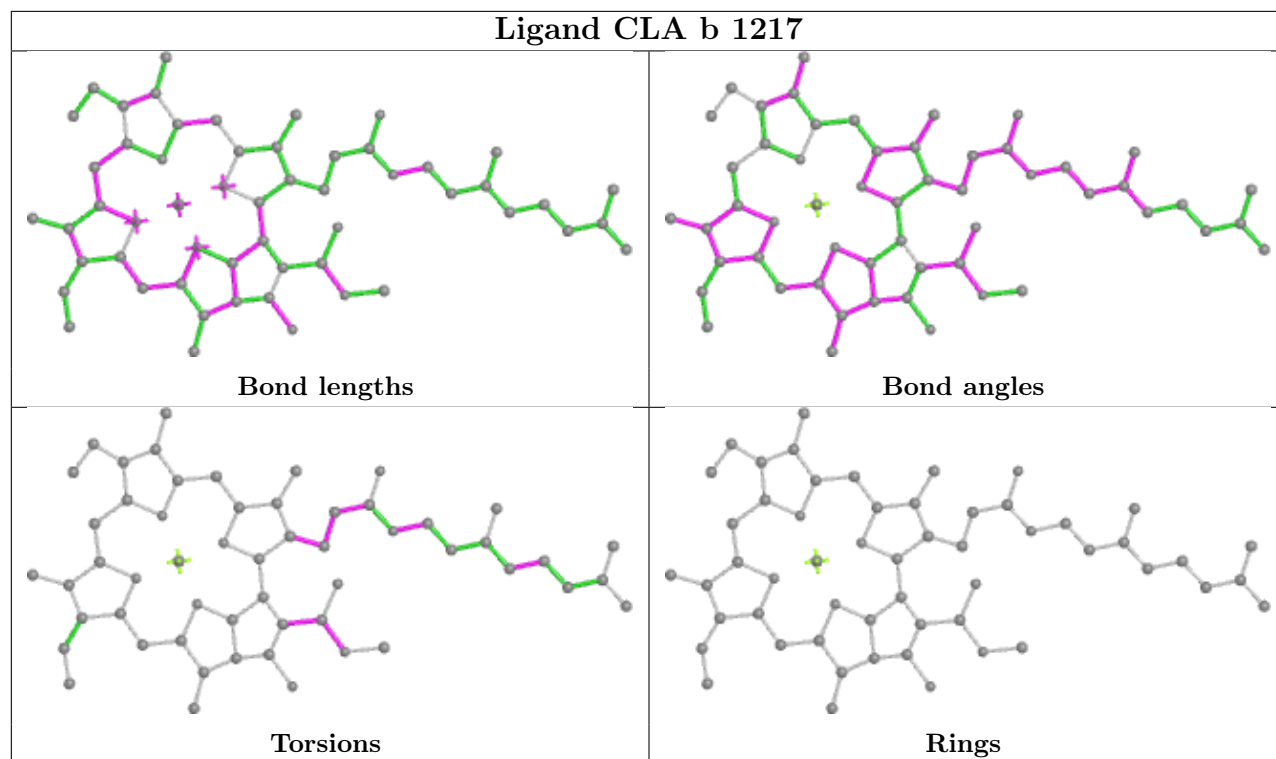


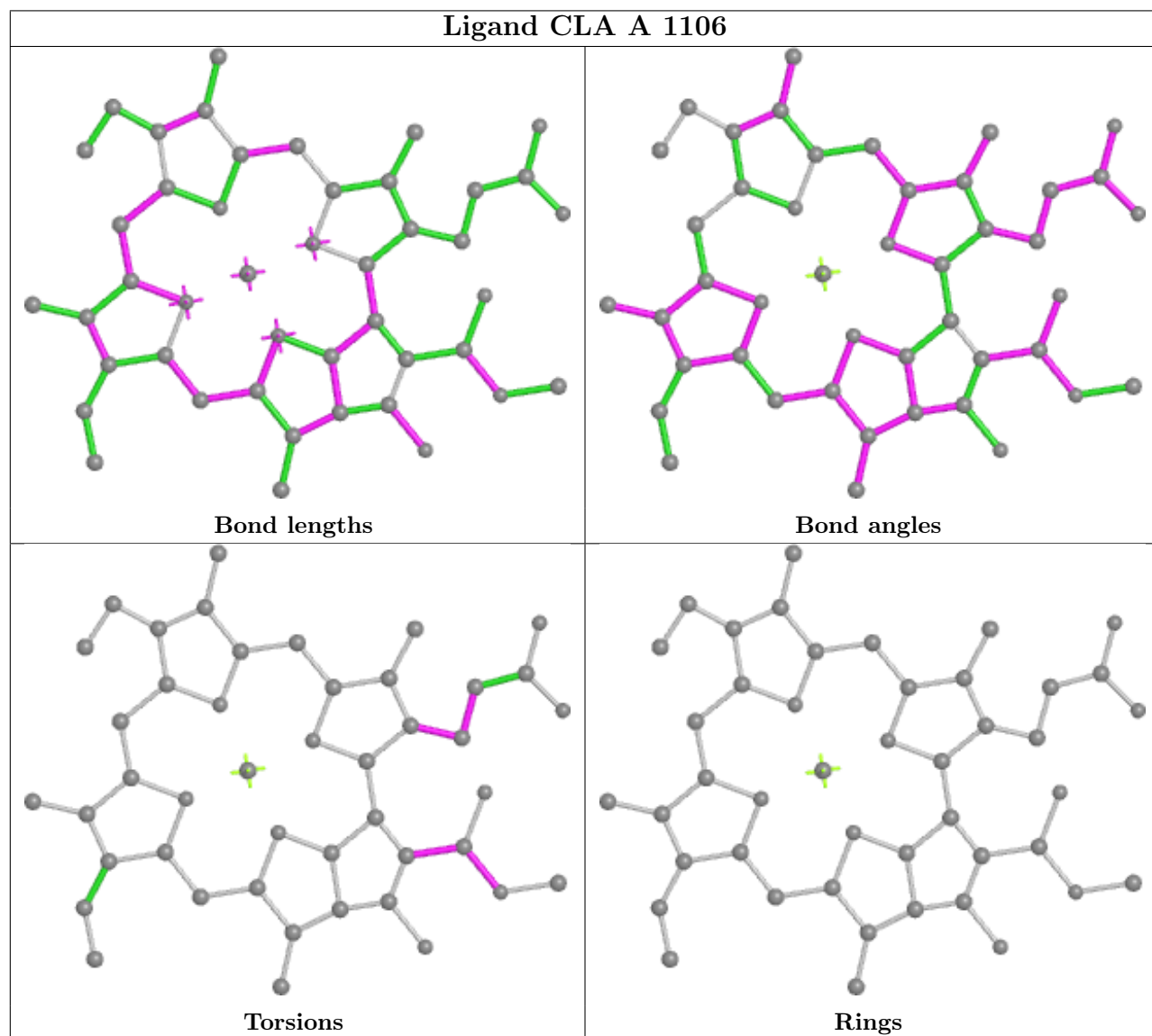
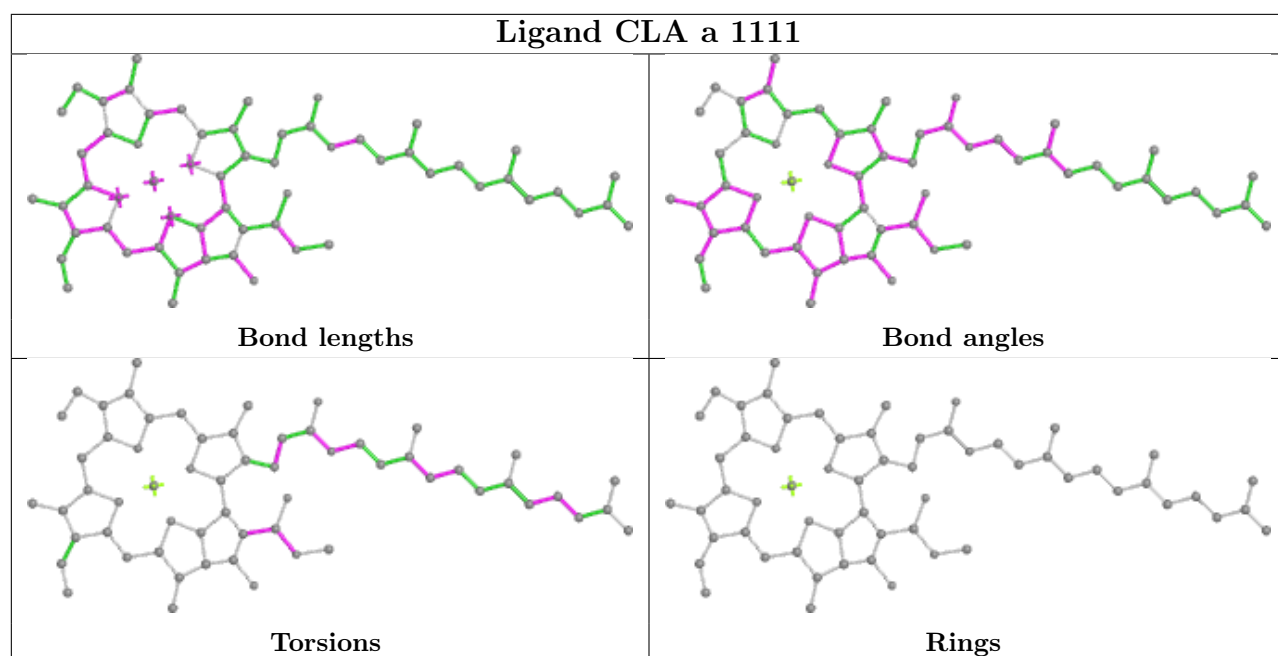


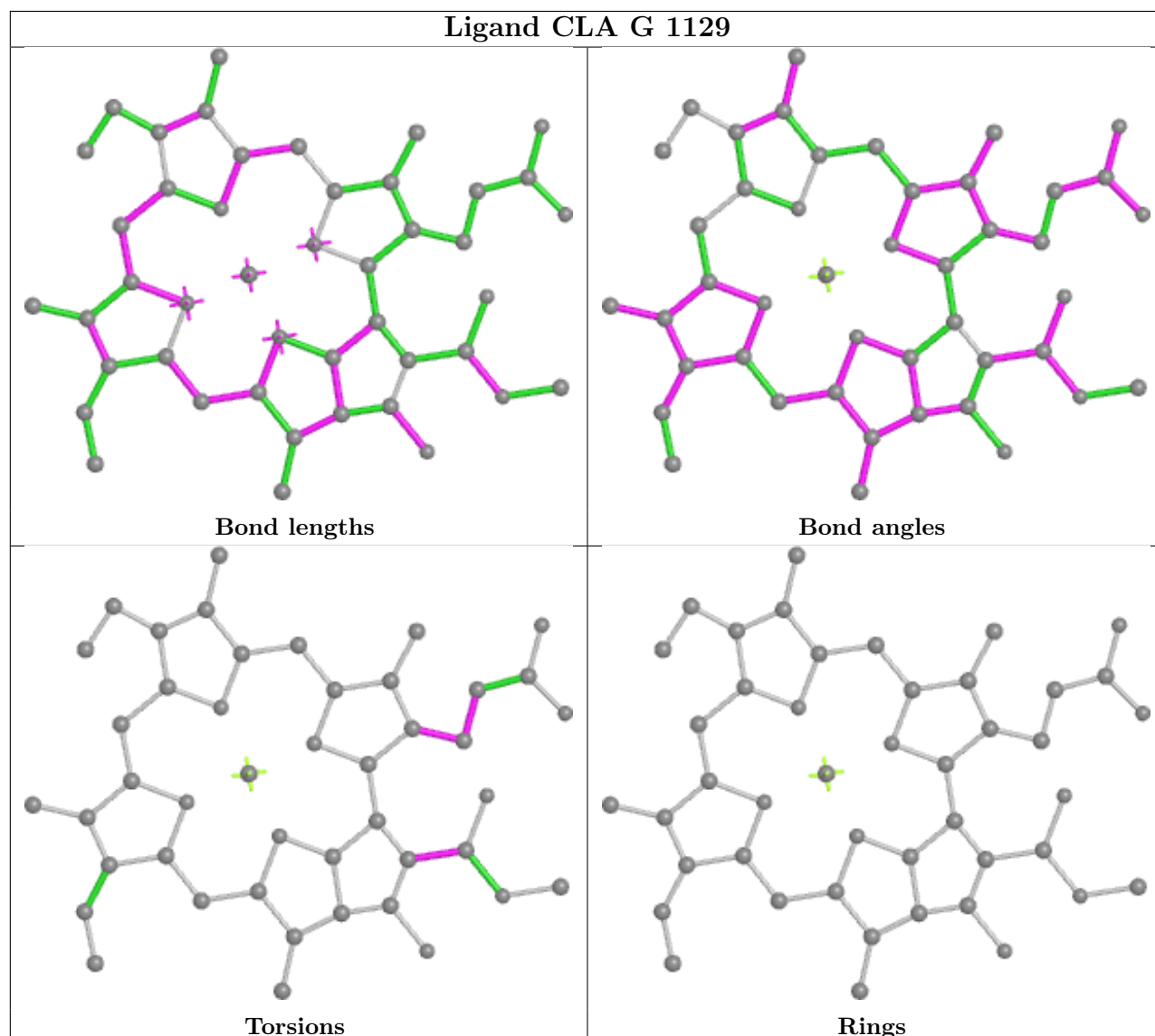
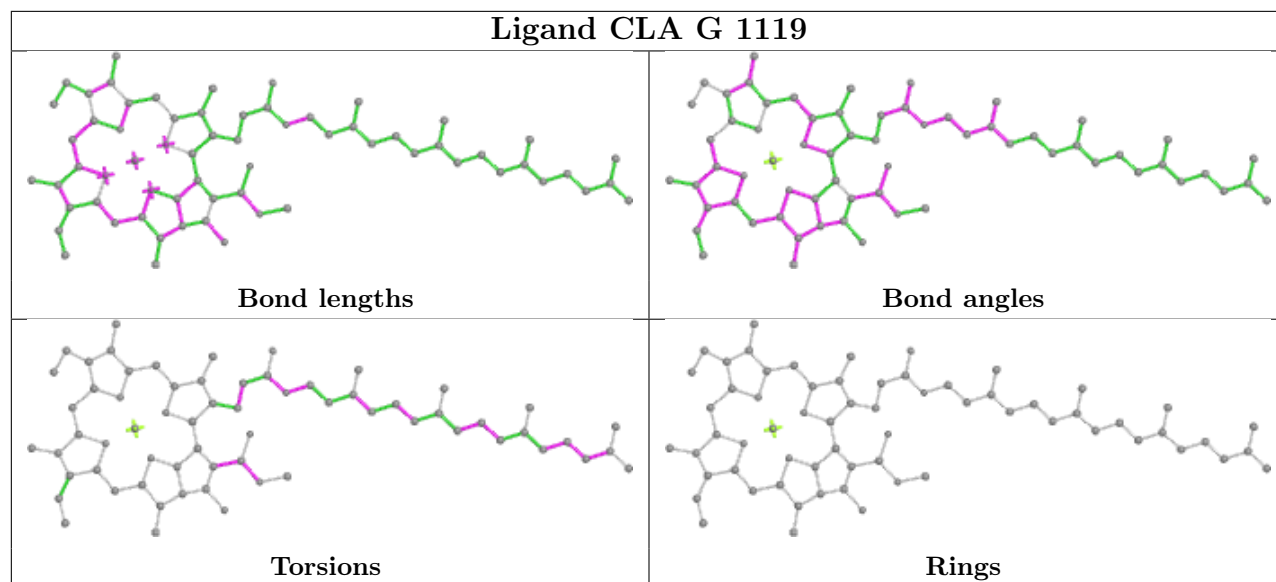


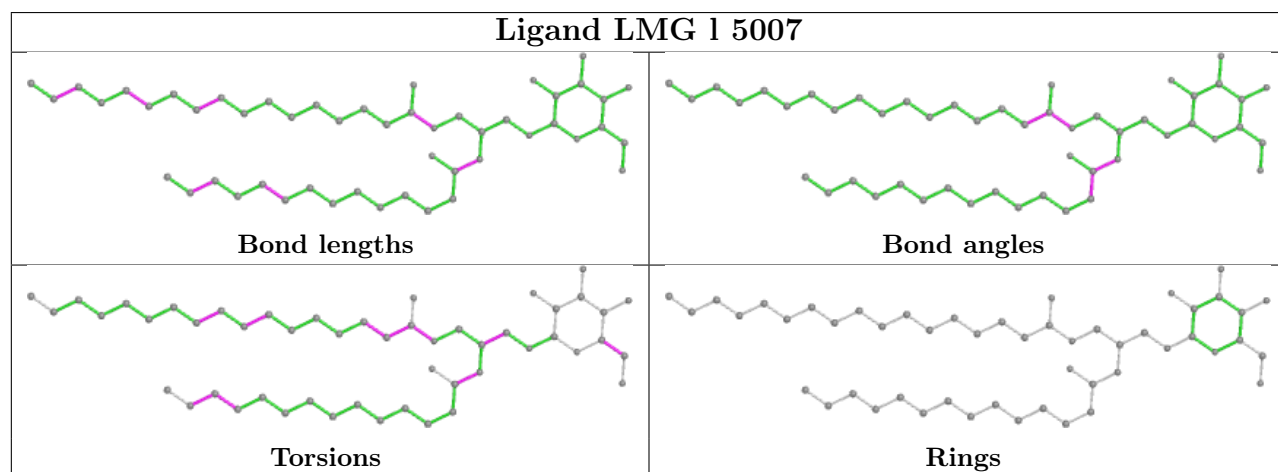
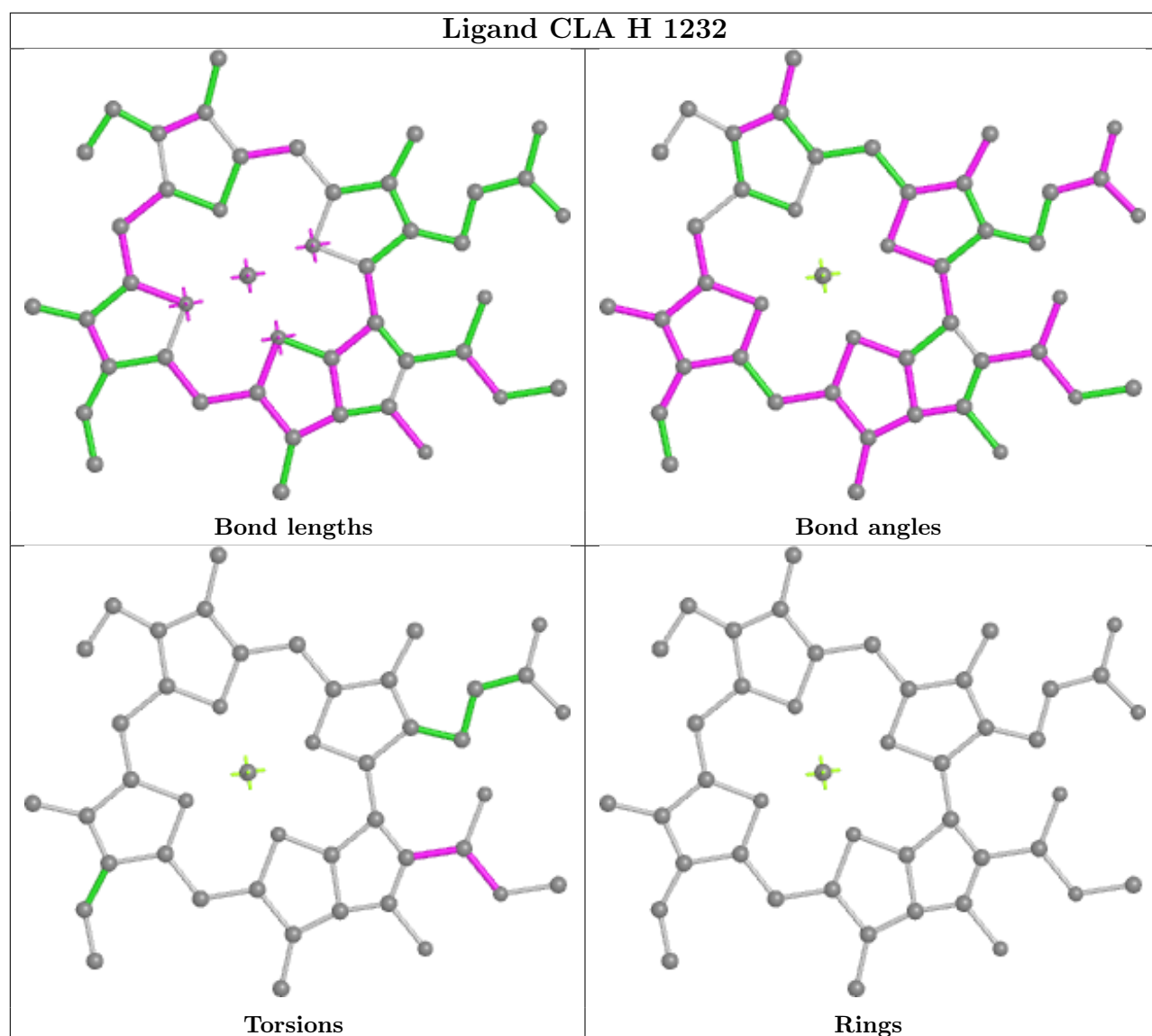


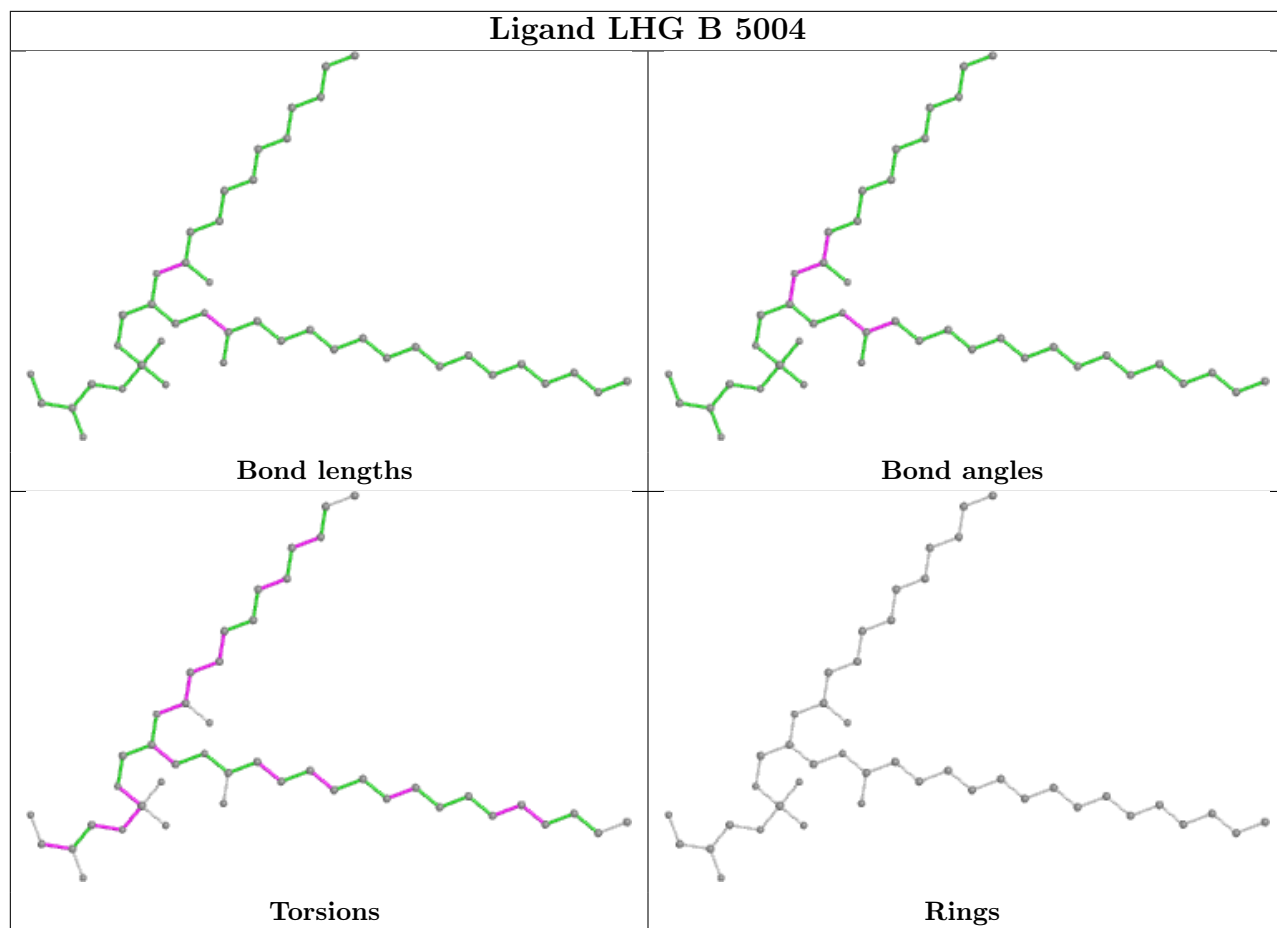


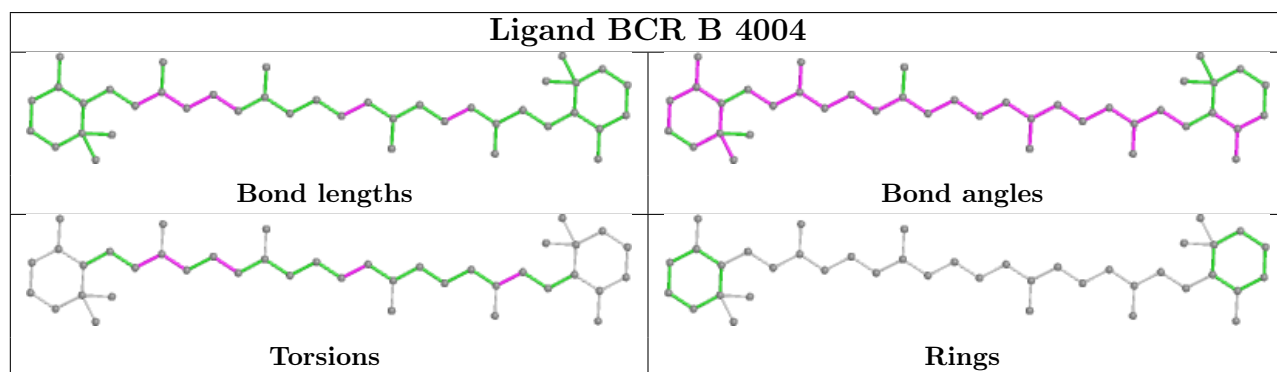
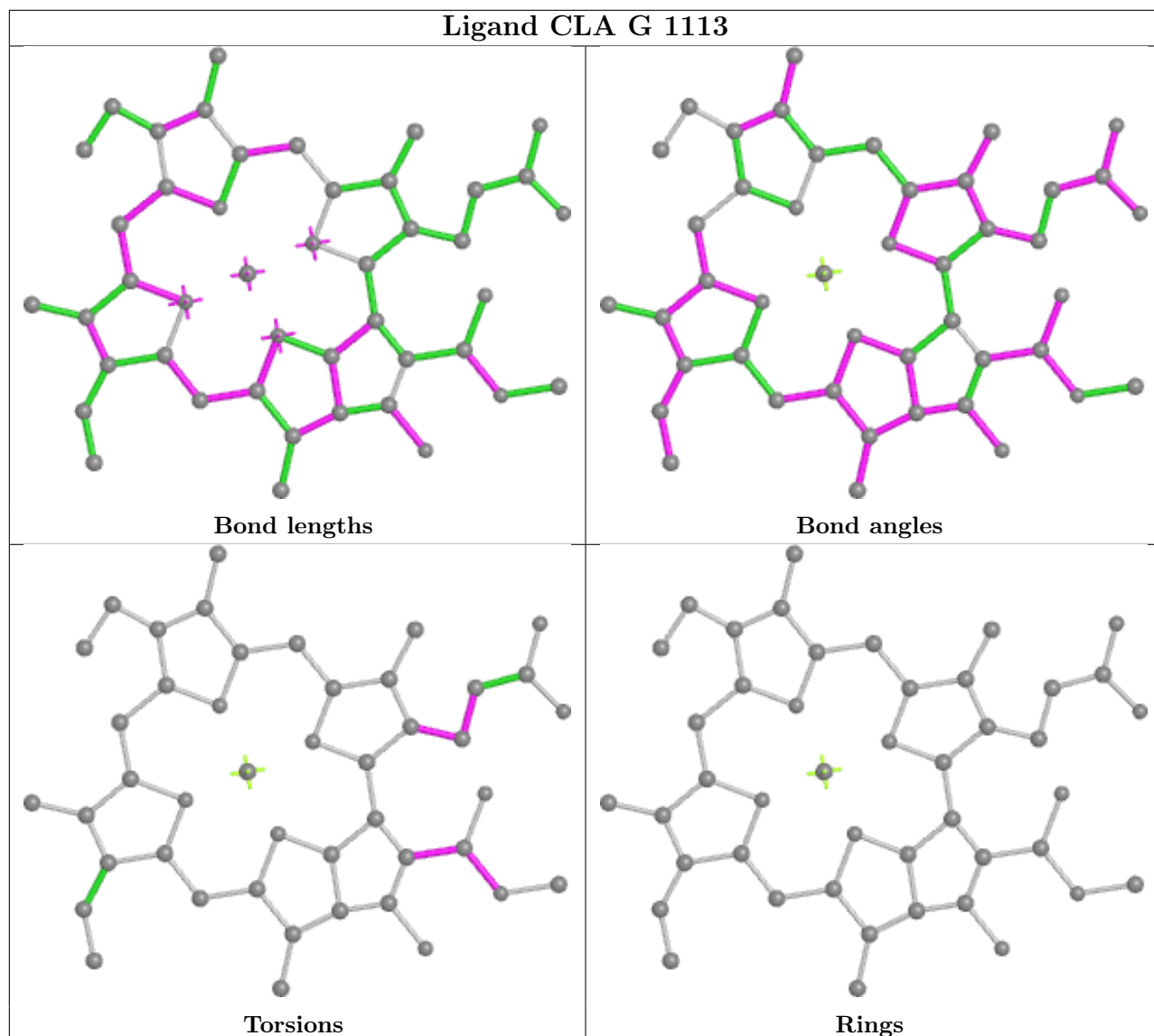


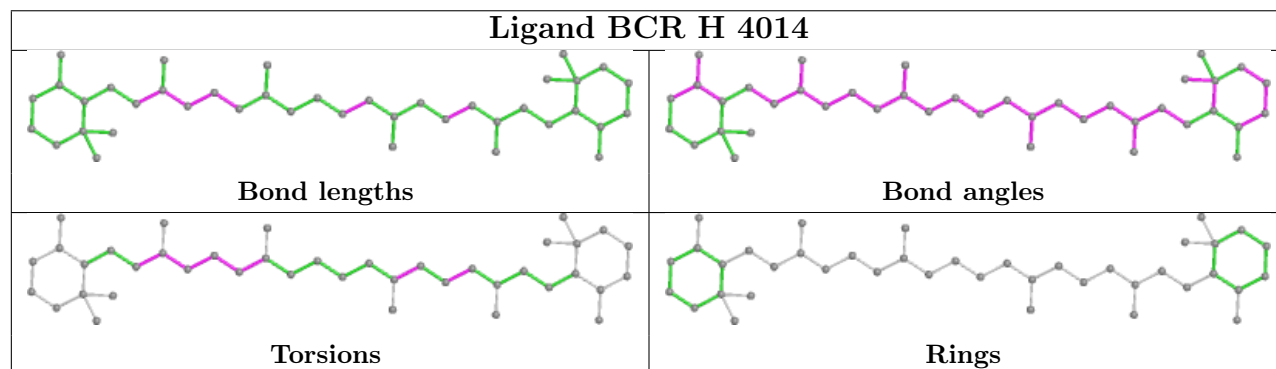
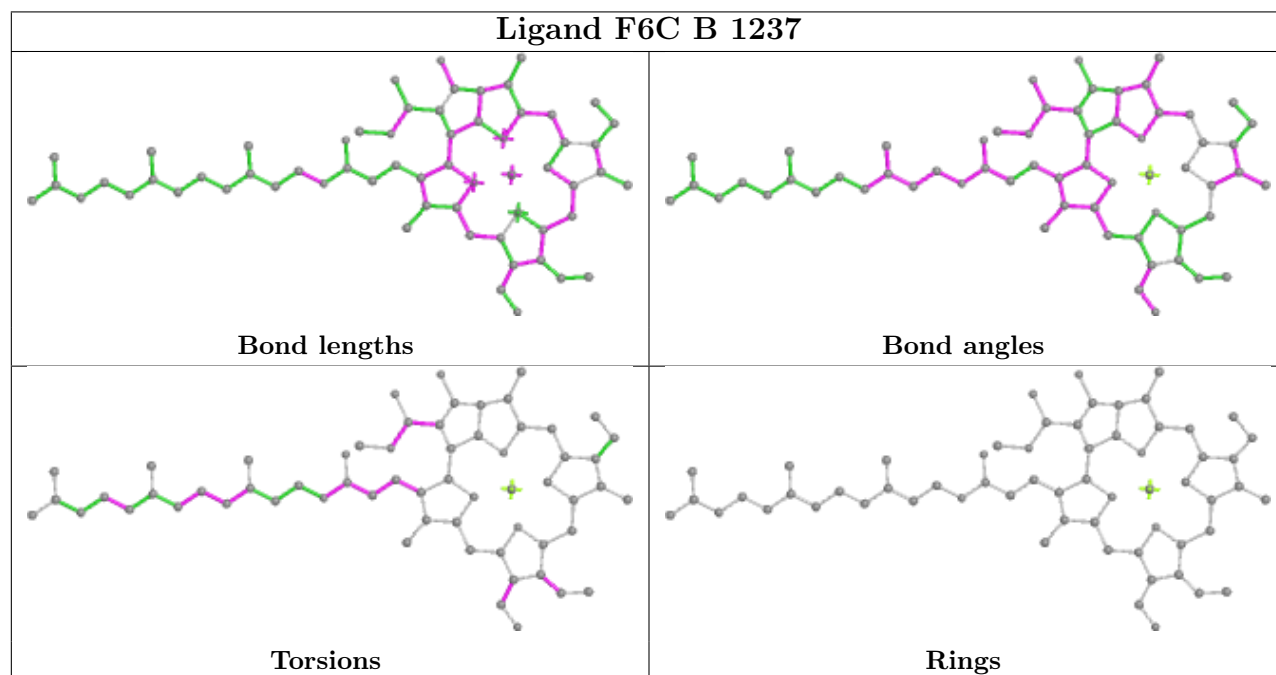
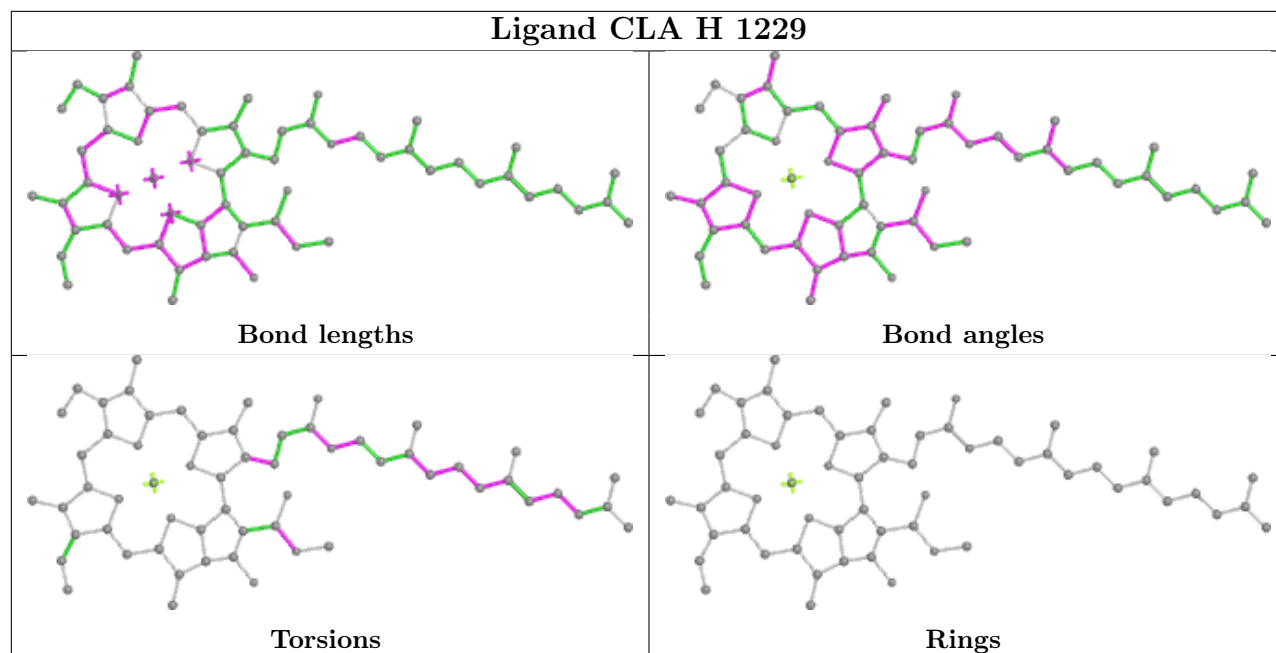


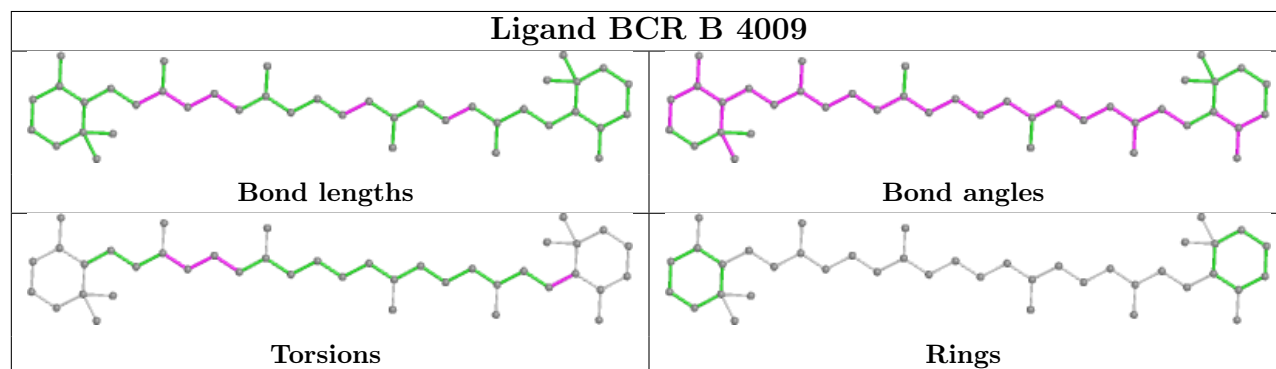
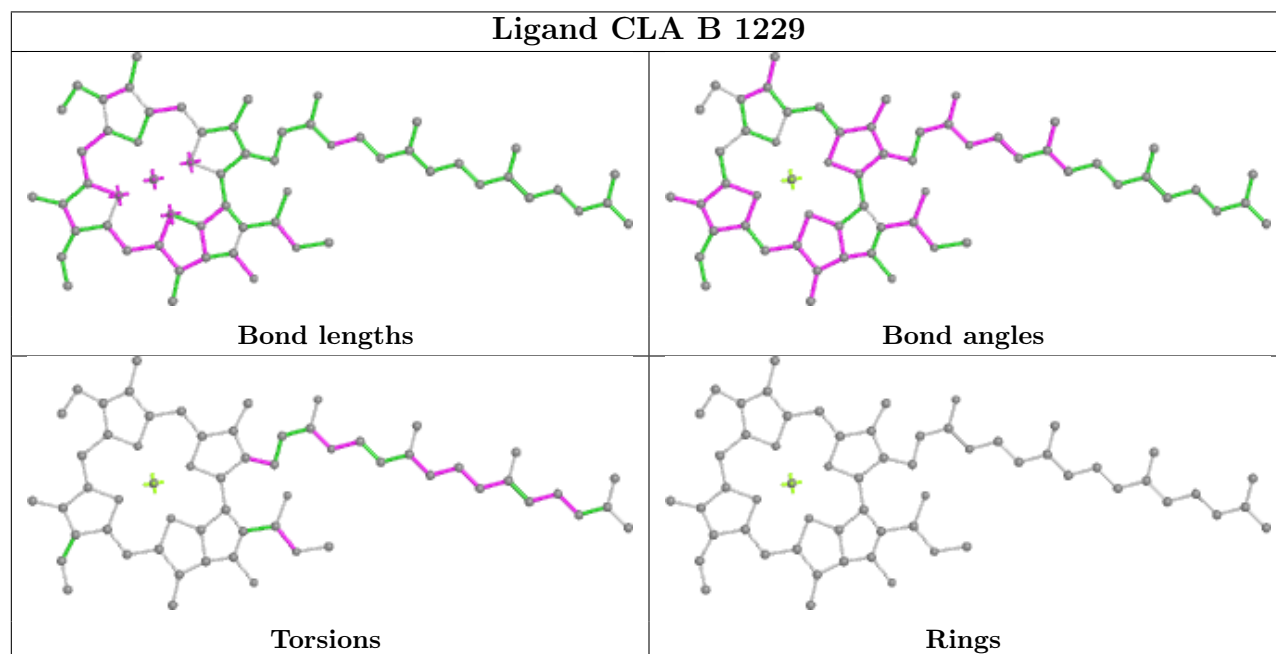
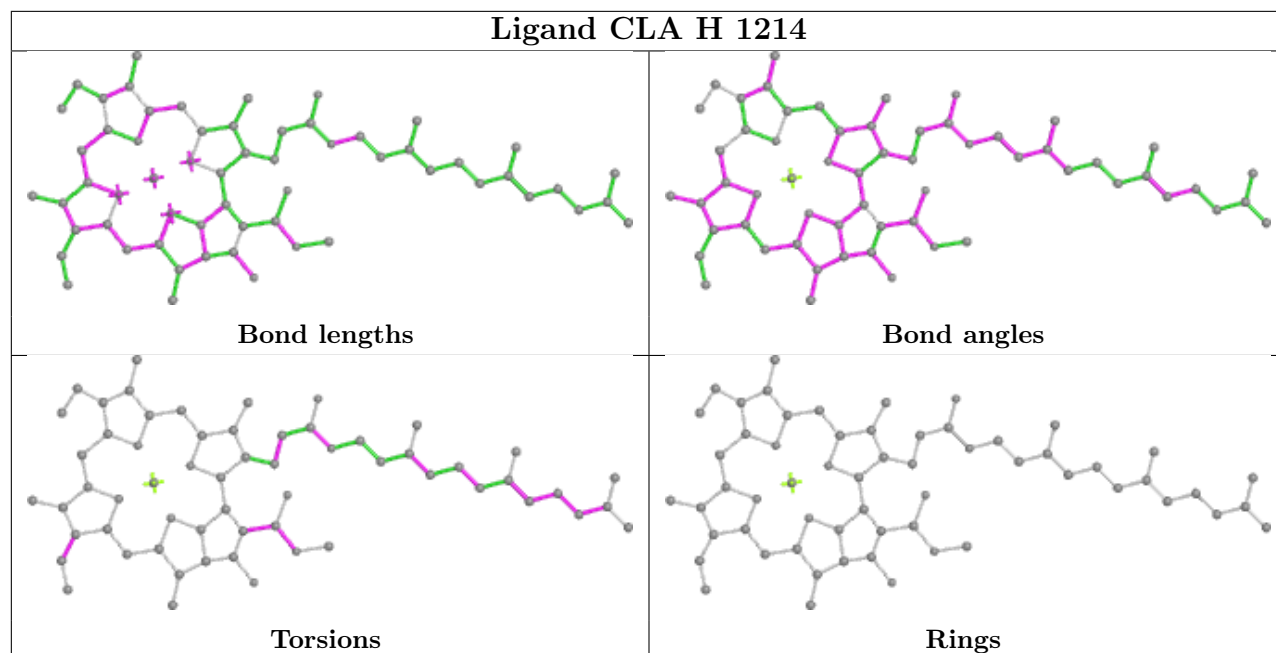


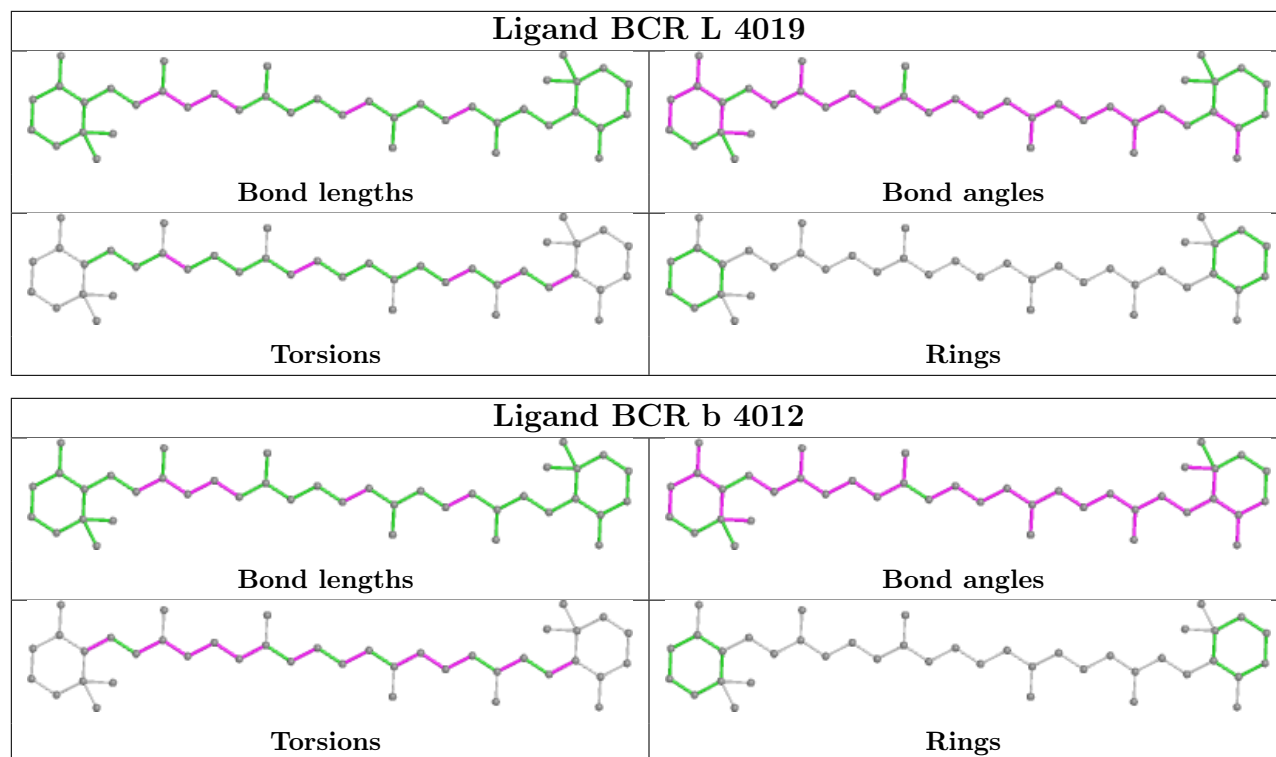


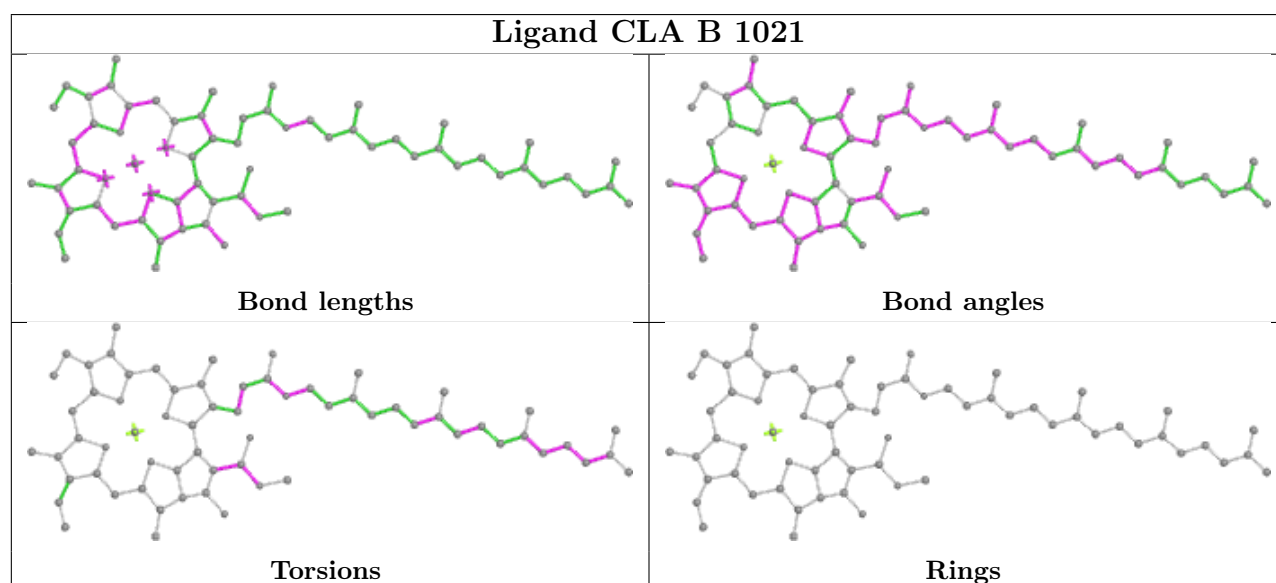
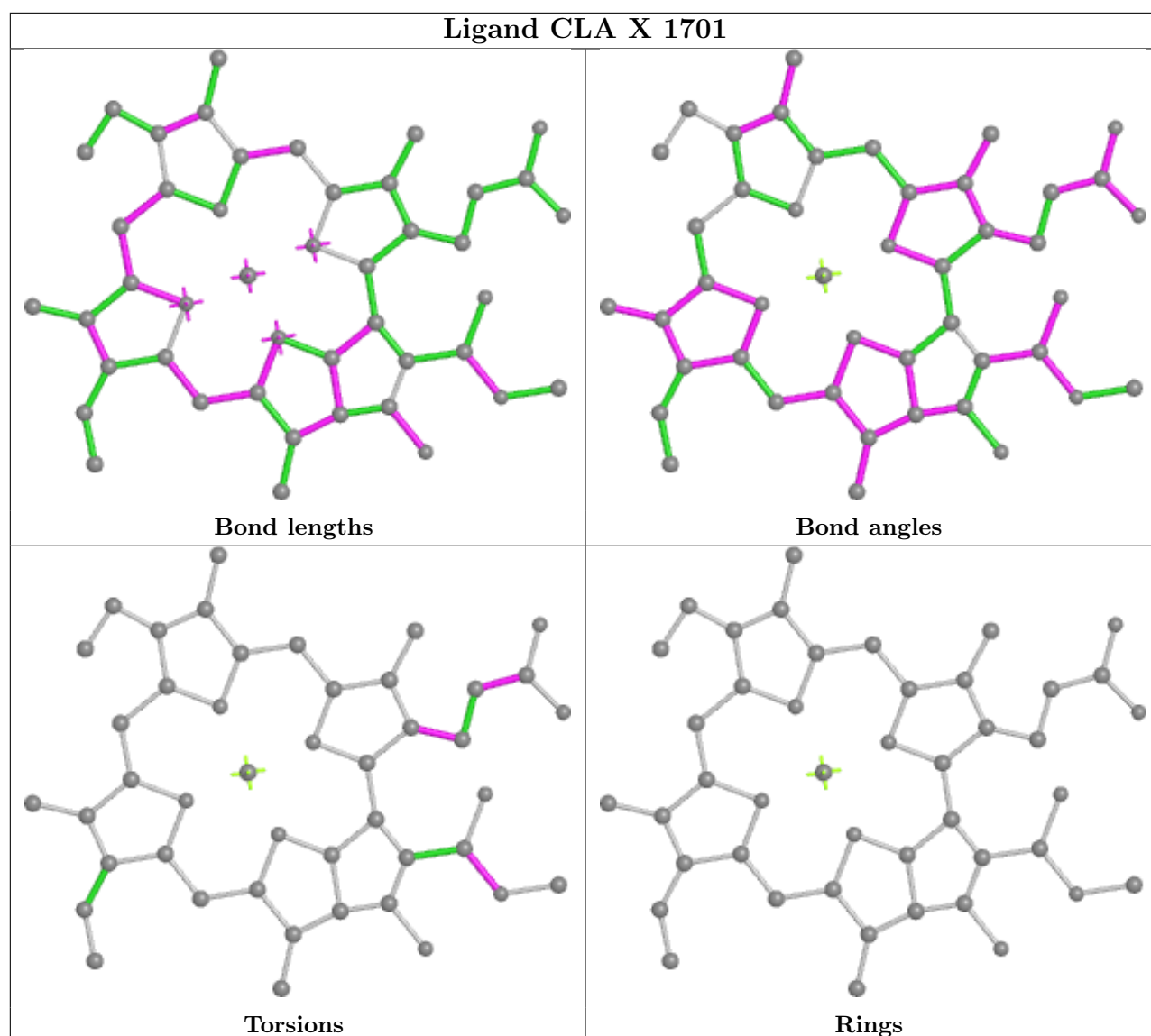


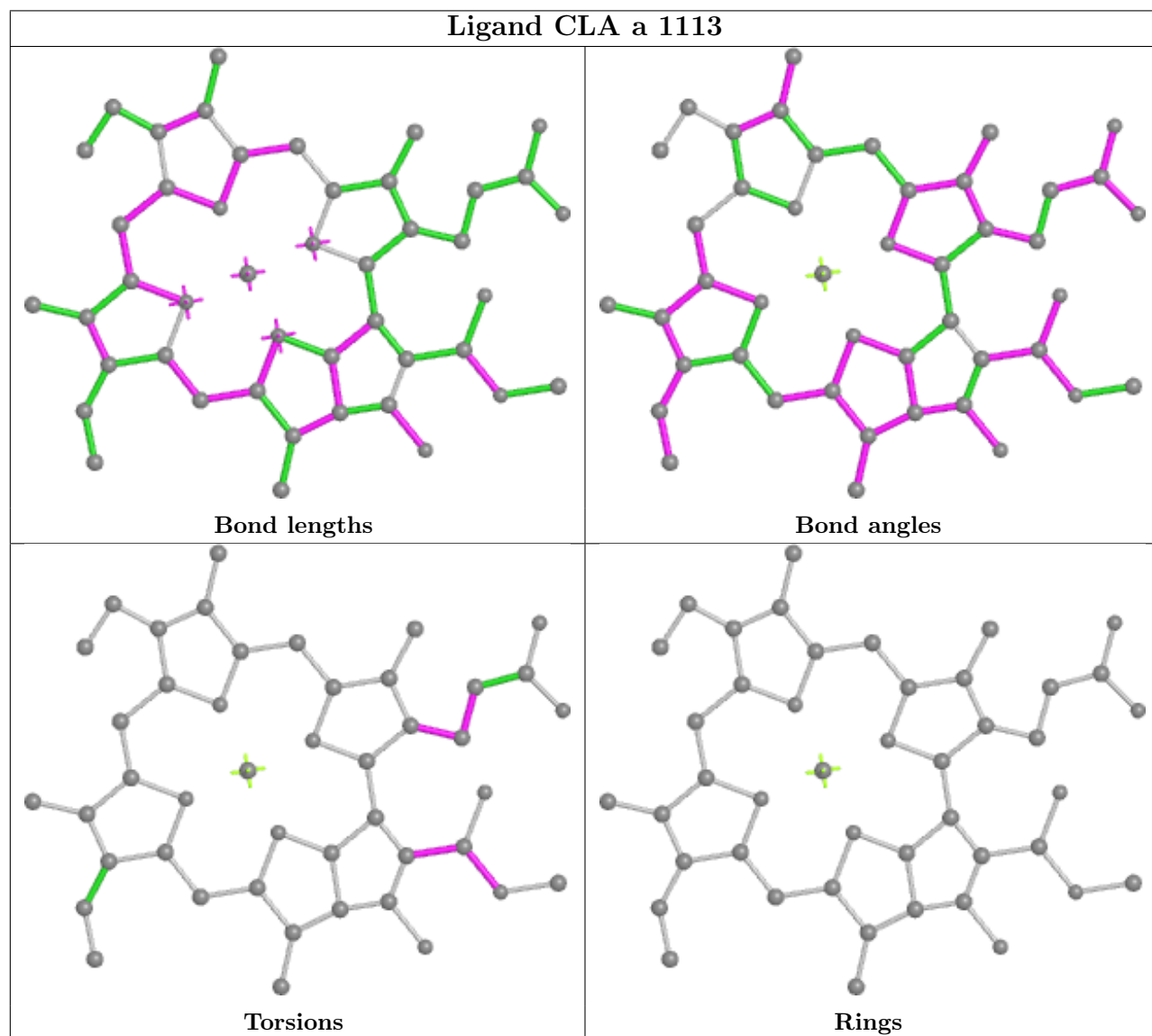
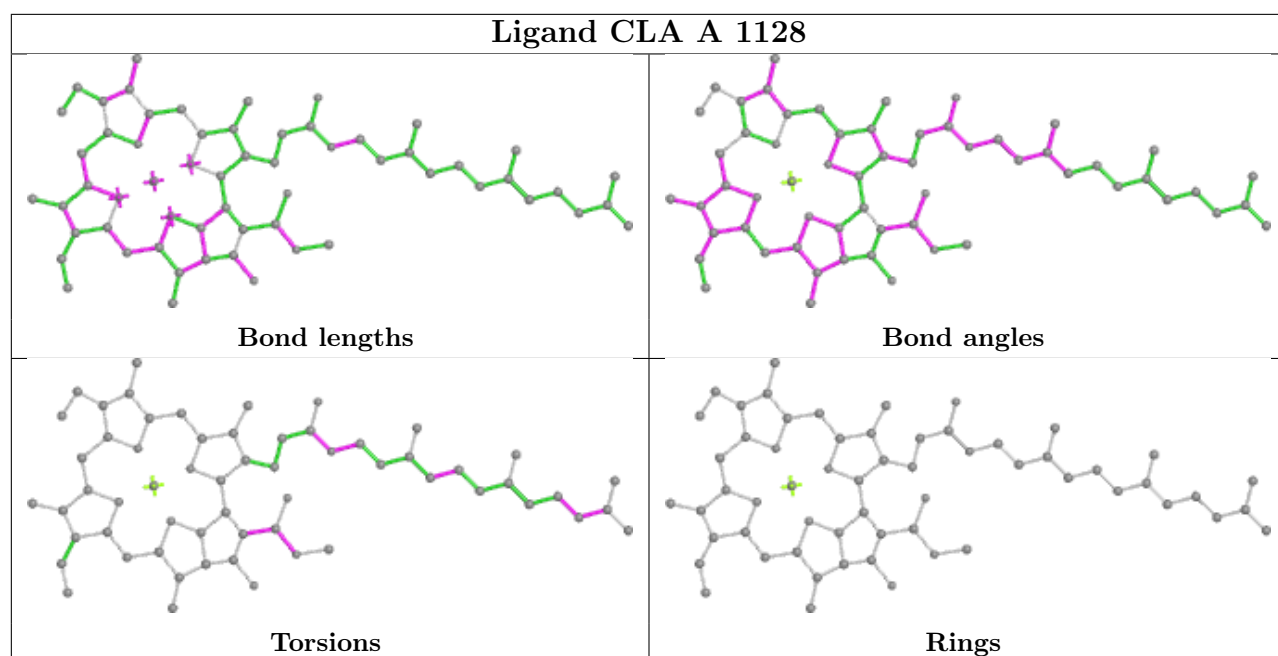


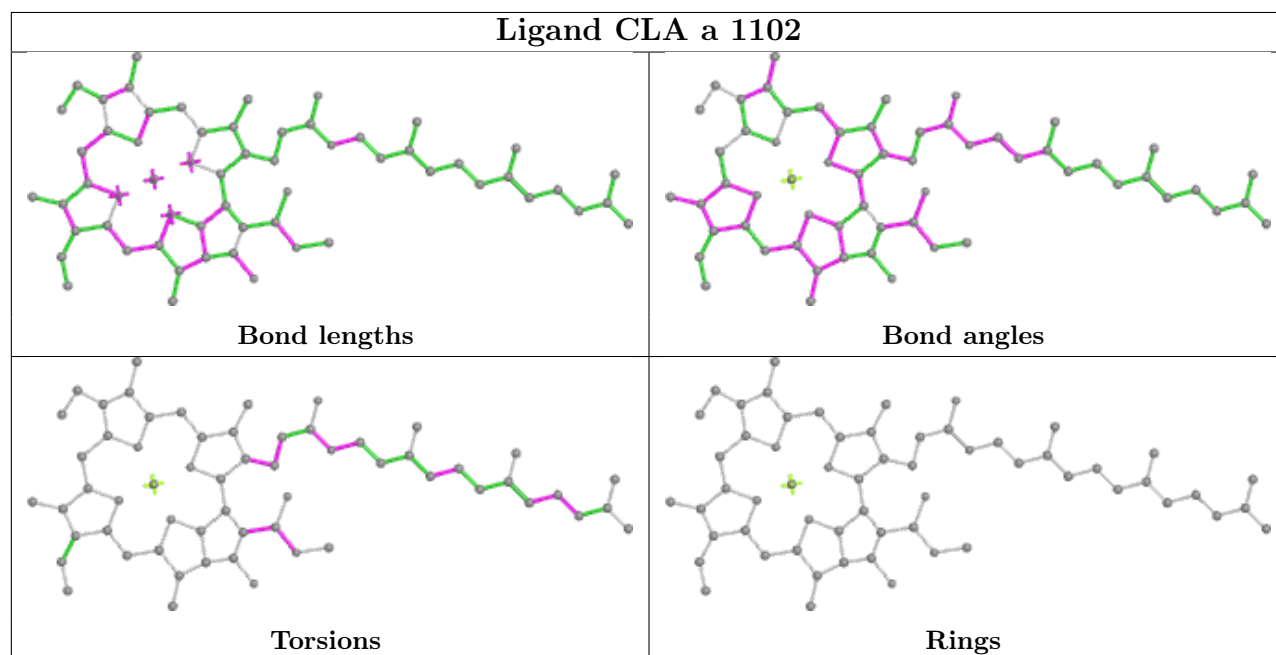
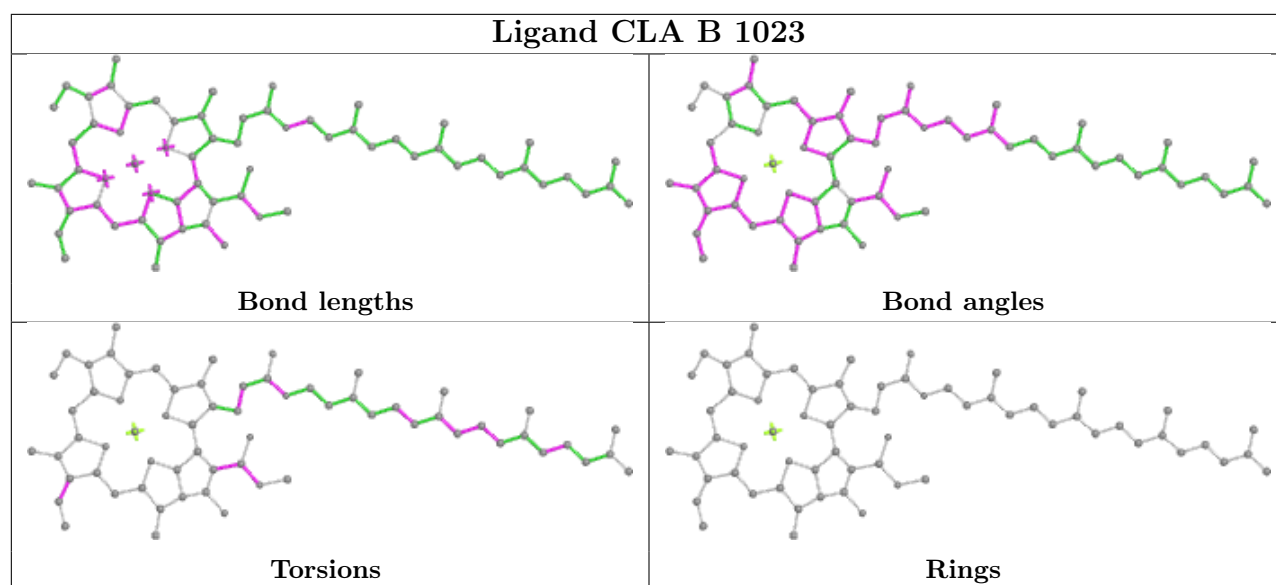


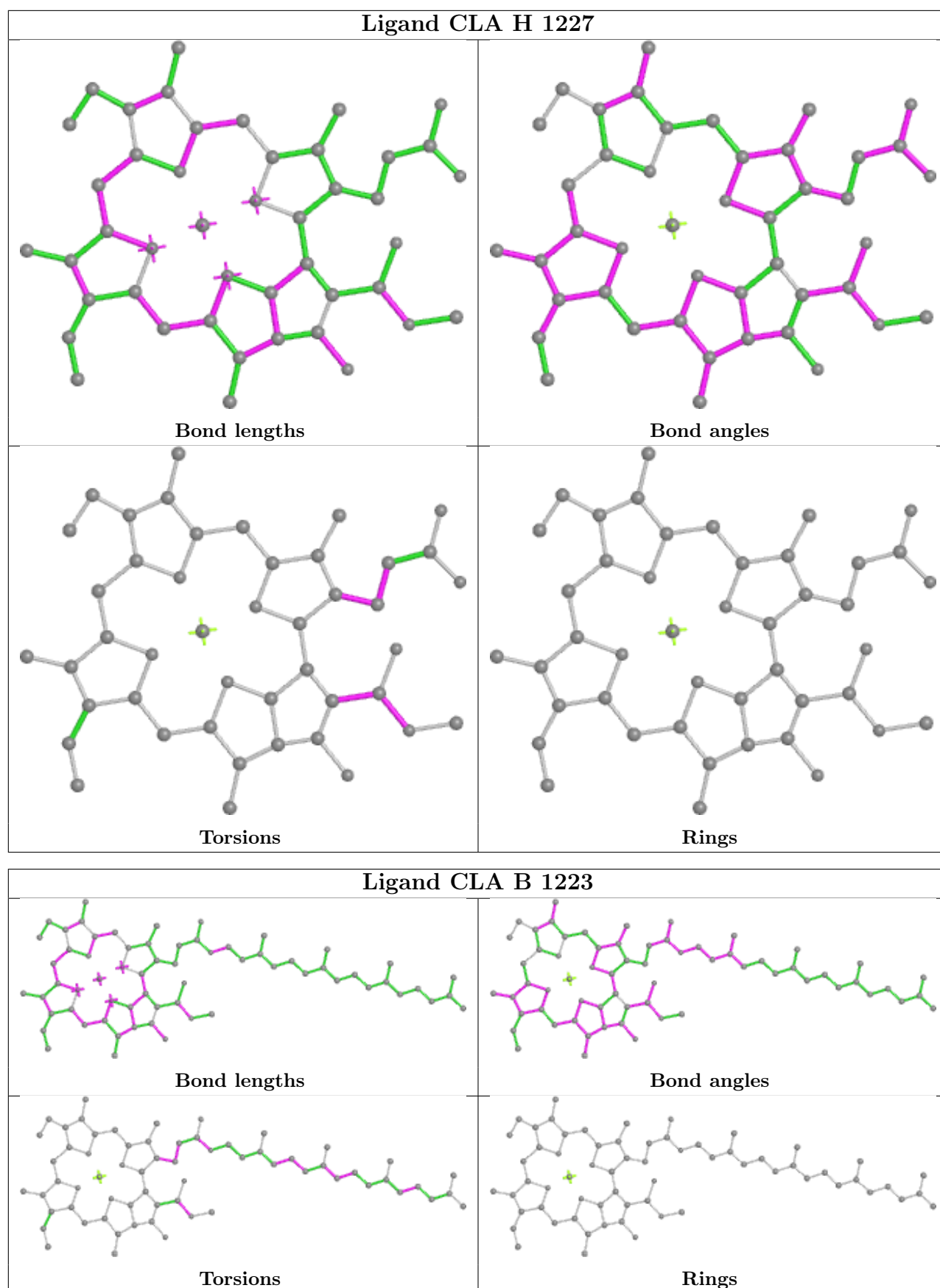


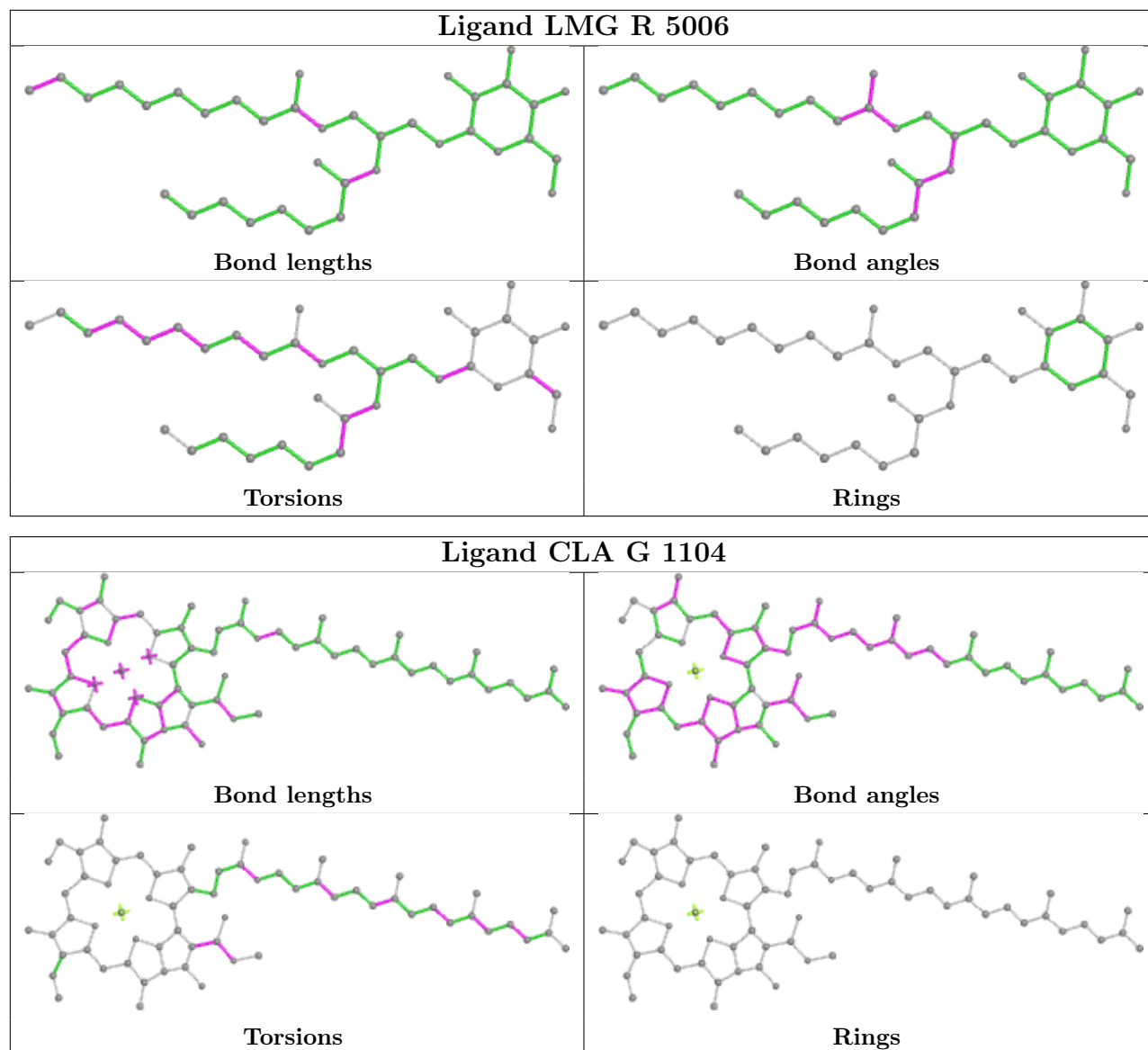


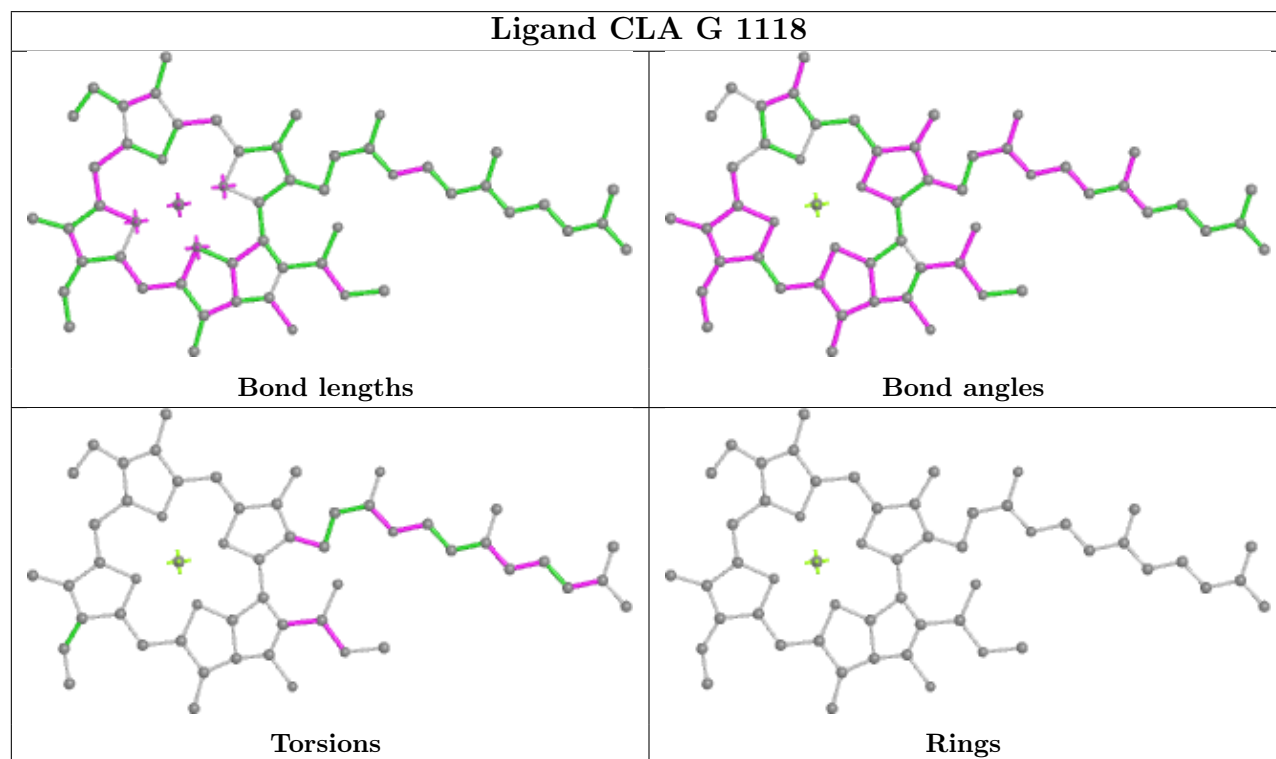
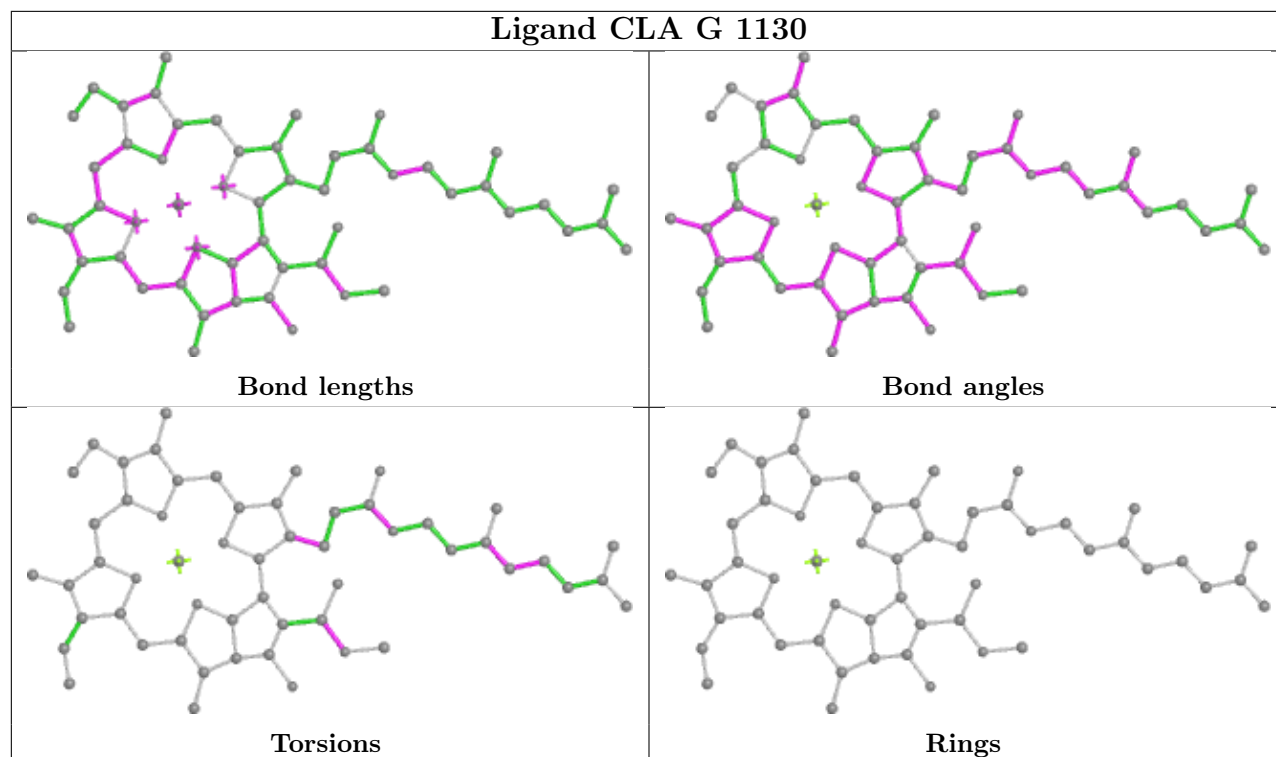


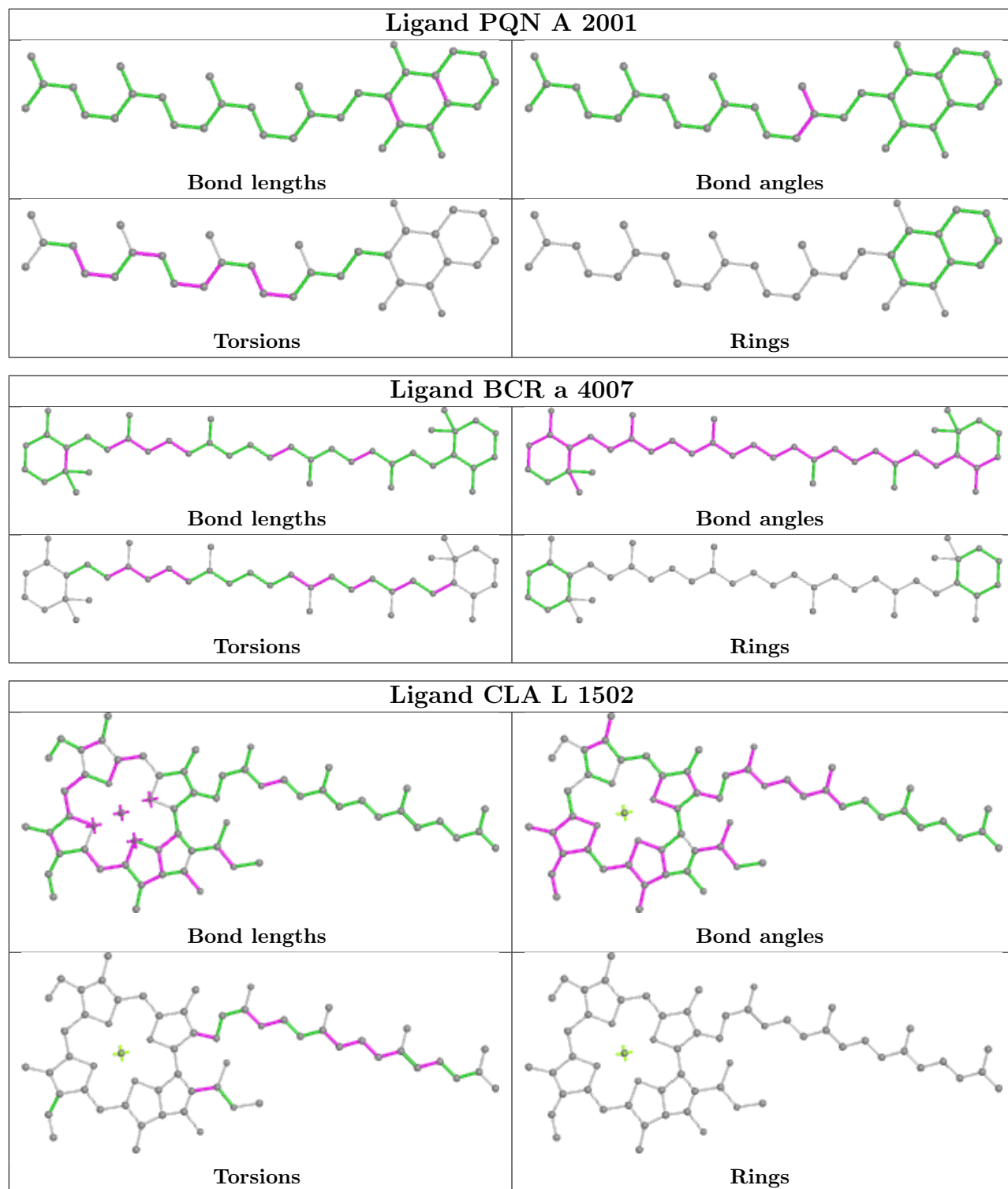


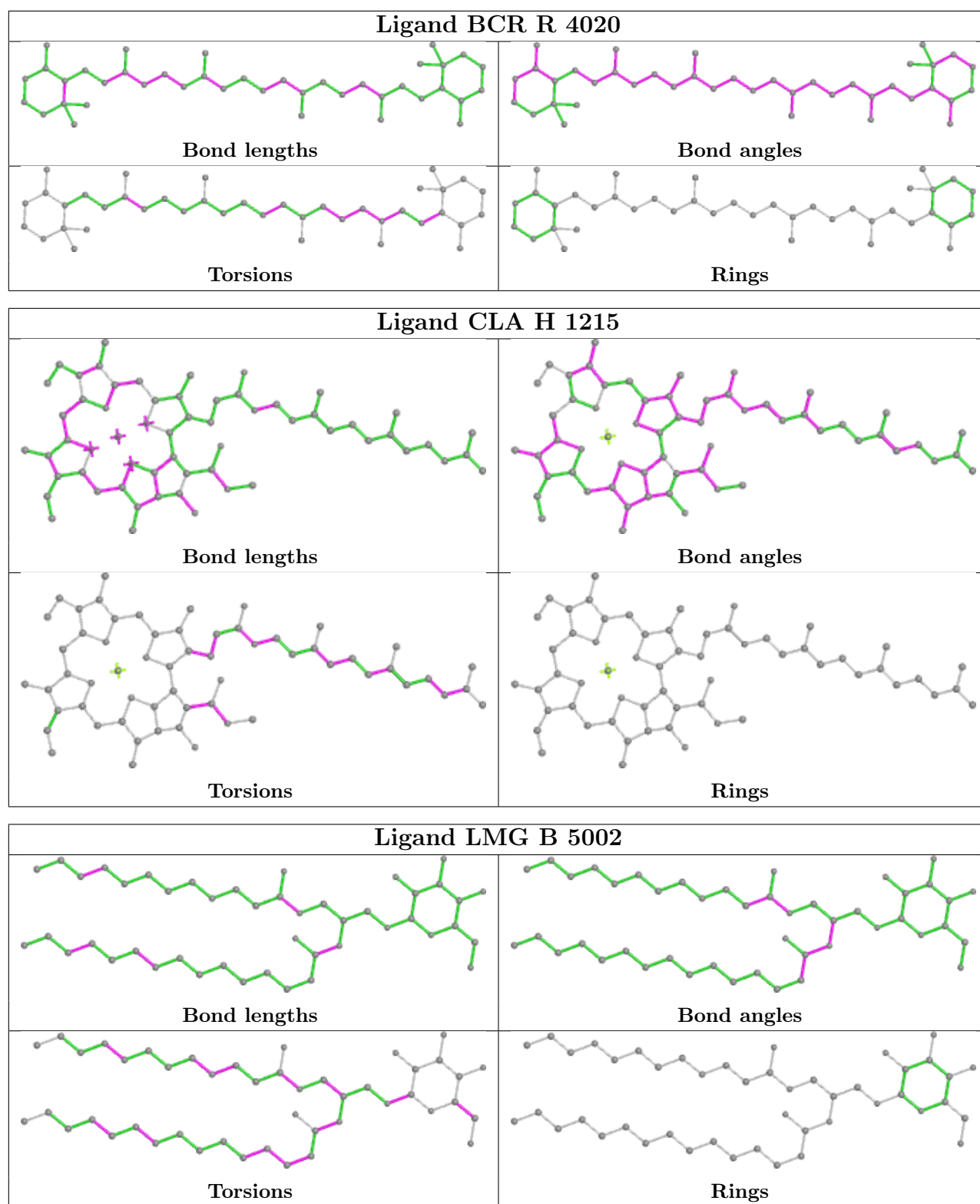












5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
9	K	1
9	T	1
9	k	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	K	44:UNK	C	69:VAL	N	11.74
1	T	44:UNK	C	69:VAL	N	11.74
1	k	44:UNK	C	69:VAL	N	11.74

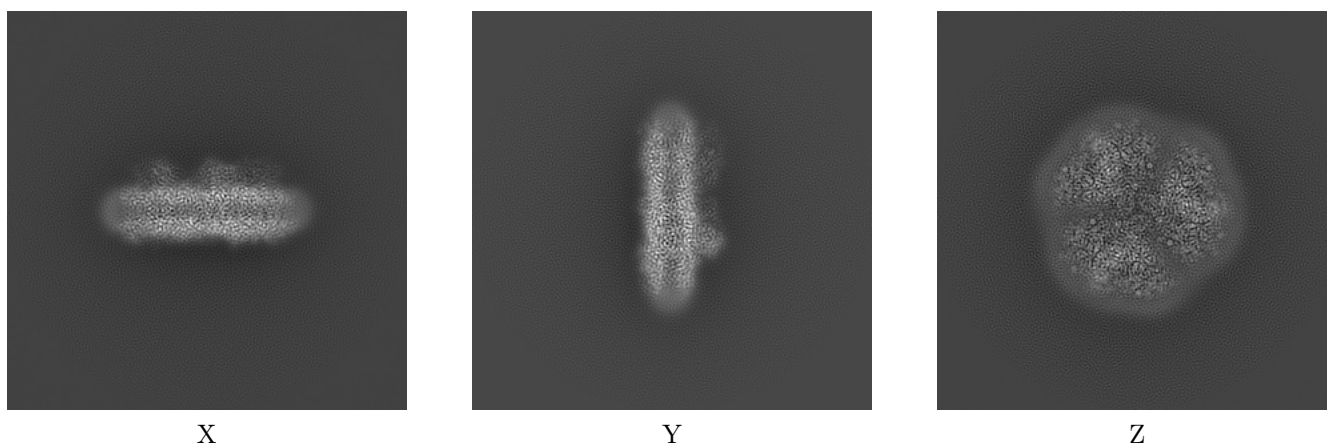
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-20397. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

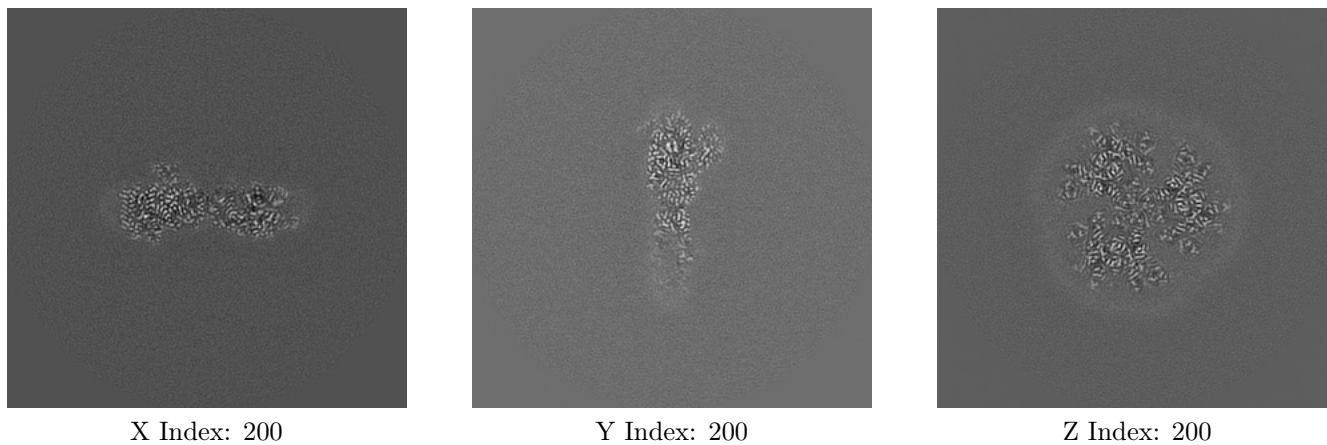
6.1.1 Primary map



The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

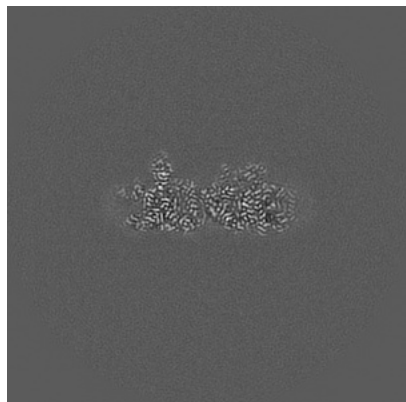
6.2.1 Primary map



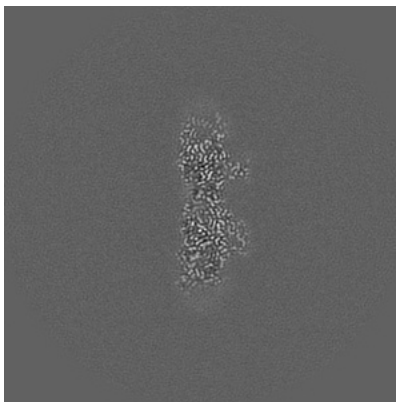
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

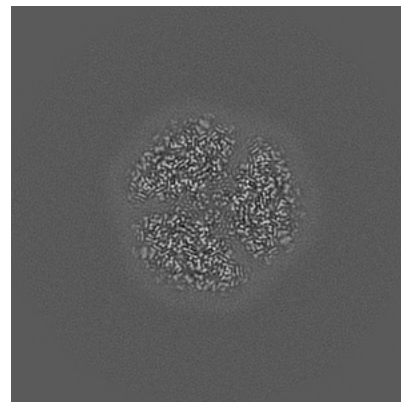
6.3.1 Primary map



X Index: 180



Y Index: 216

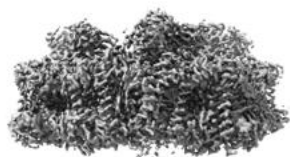


Z Index: 188

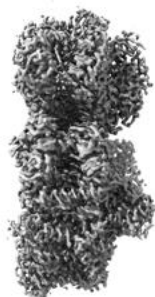
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0293. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

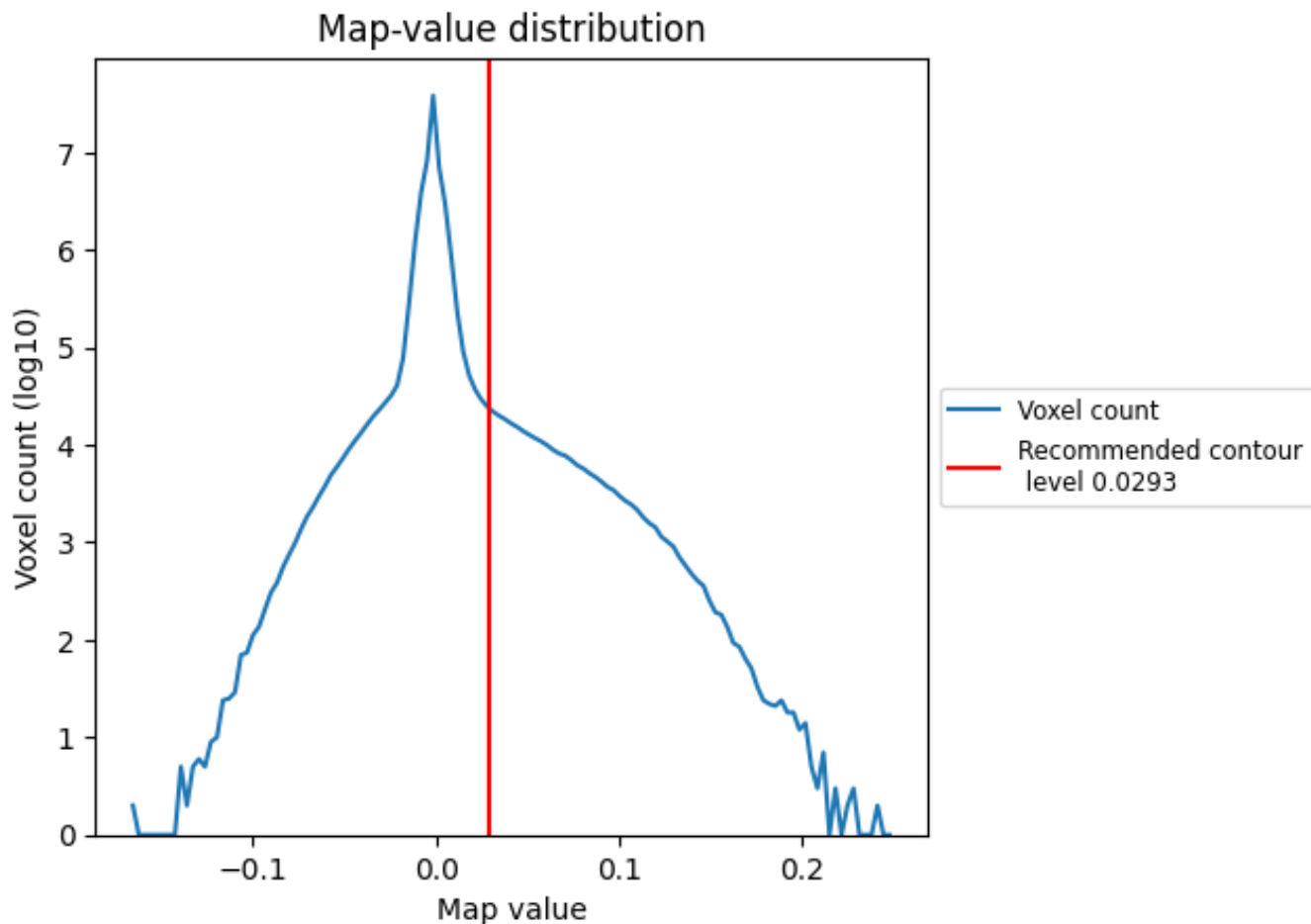
6.5 Mask visualisation

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

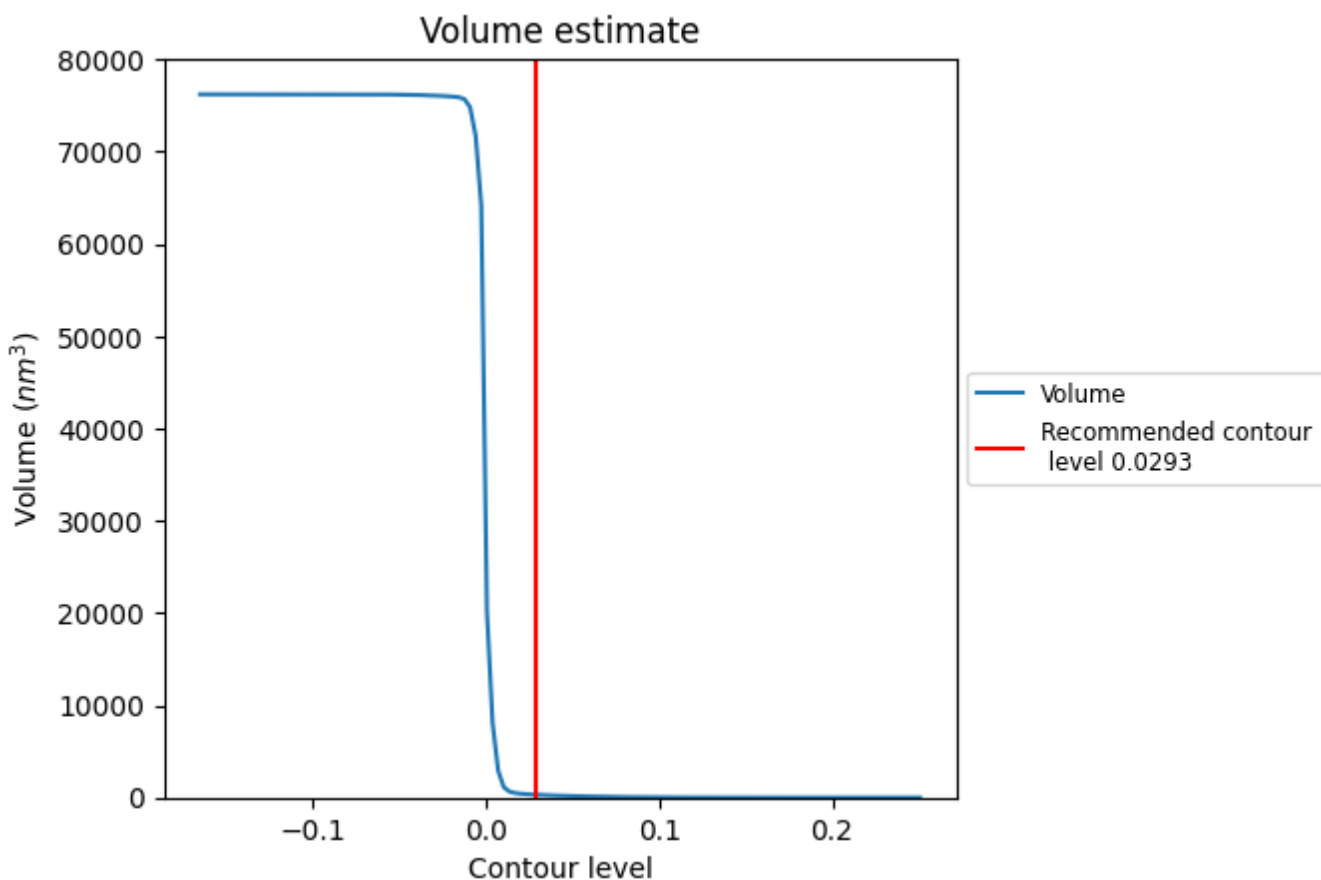
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

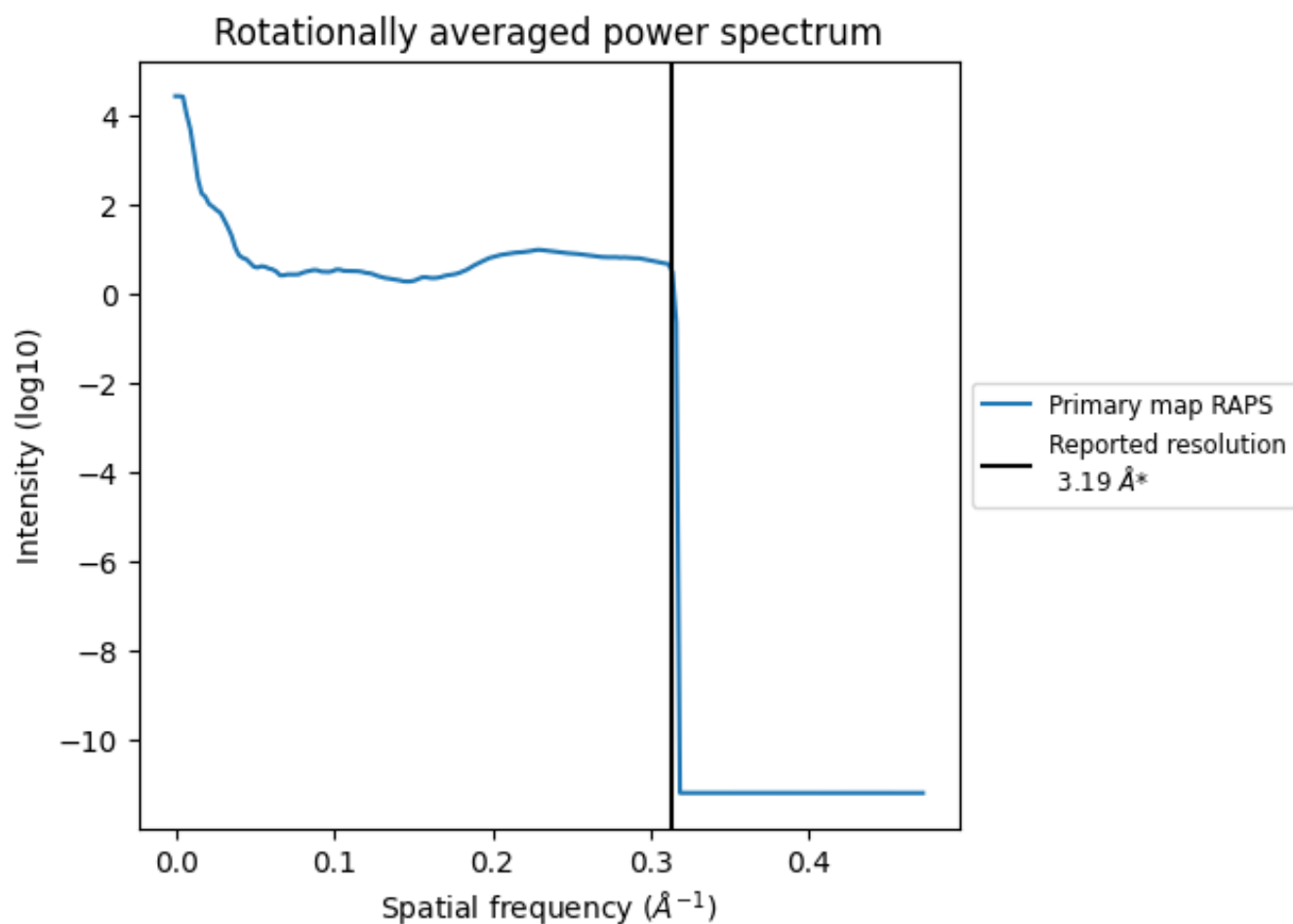
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 301 nm³; this corresponds to an approximate mass of 272 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)

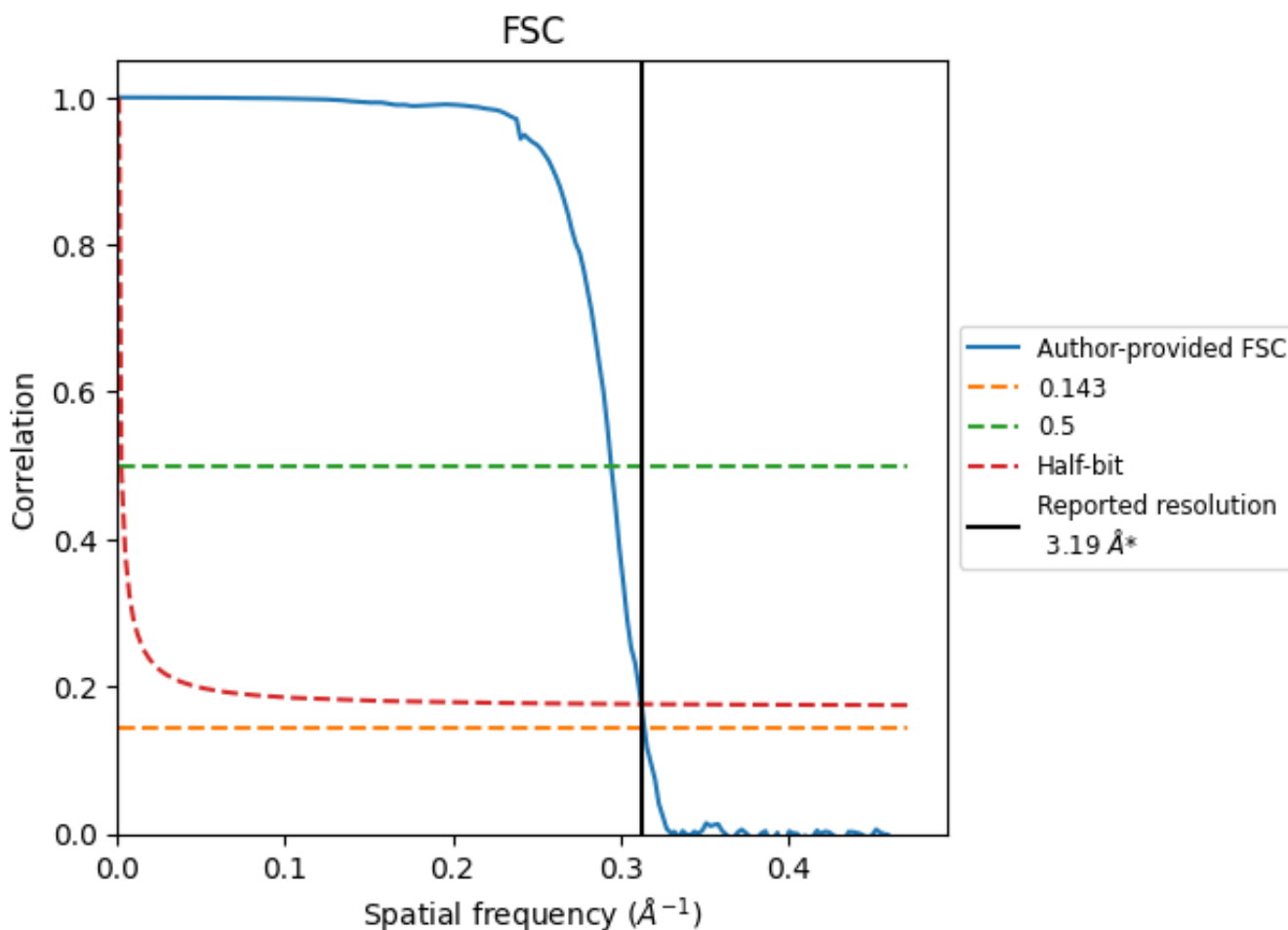


*Reported resolution corresponds to spatial frequency of 0.313 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.313 Å⁻¹

8.2 Resolution estimates [i](#)

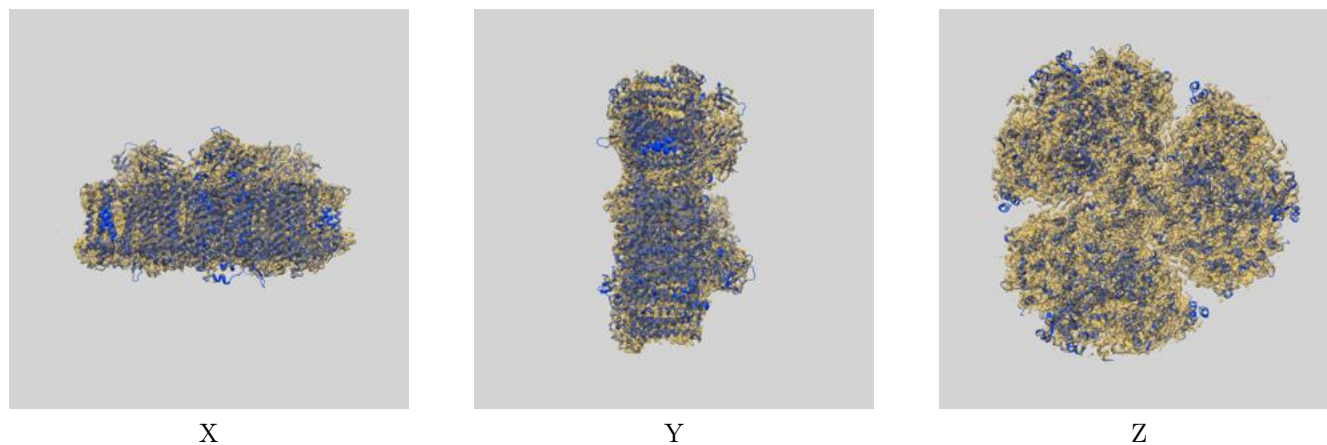
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.19	-	-
Author-provided FSC curve	3.18	3.39	3.20
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

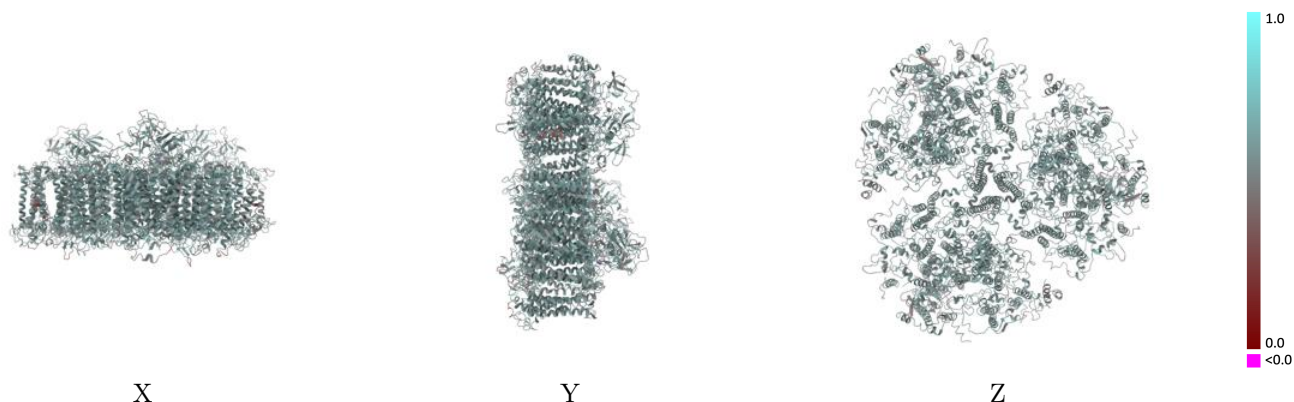
This section contains information regarding the fit between EMDB map EMD-20397 and PDB model 6PNJ. Per-residue inclusion information can be found in section 3 on page 37.

9.1 Map-model overlay [i](#)



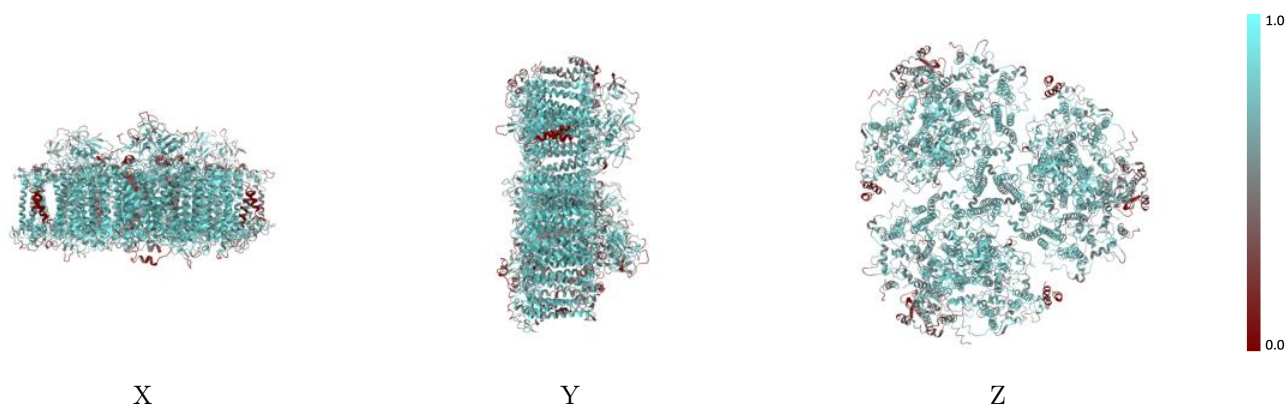
The images above show the 3D surface view of the map at the recommended contour level 0.0293 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



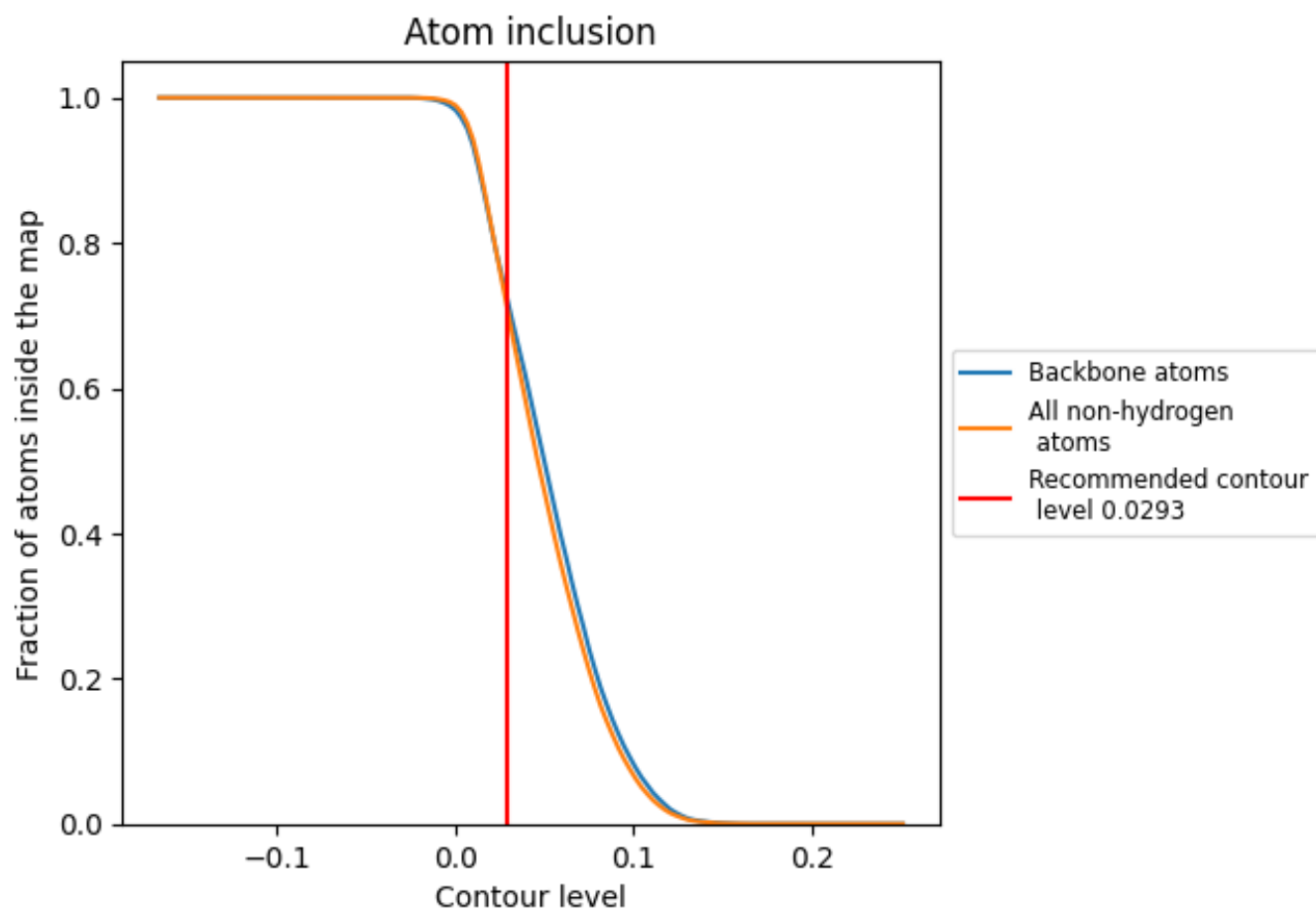
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0293).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 72% of all backbone atoms, 71% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary




The table lists the average atom inclusion at the recommended contour level (0.0293) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7106	 0.5660
A	 0.7591	 0.5750
B	 0.7533	 0.5760
C	 0.7521	 0.5500
D	 0.6204	 0.5530
E	 0.5197	 0.5330
F	 0.3820	 0.5160
G	 0.7580	 0.5750
H	 0.7532	 0.5760
I	 0.7532	 0.5820
J	 0.4315	 0.4890
K	 0.0661	 0.4440
L	 0.7383	 0.5700
M	 0.6643	 0.5450
N	 0.7438	 0.5490
O	 0.6223	 0.5540
P	 0.5197	 0.5320
Q	 0.3800	 0.5180
R	 0.7576	 0.5850
S	 0.4226	 0.4950
T	 0.0661	 0.4420
U	 0.7335	 0.5690
V	 0.6786	 0.5460
W	 0.4875	 0.5130
X	 0.5089	 0.5110
a	 0.7605	 0.5740
b	 0.7546	 0.5760
c	 0.7388	 0.5500
d	 0.6167	 0.5540
e	 0.5114	 0.5280
f	 0.3868	 0.5190
i	 0.7554	 0.5860
j	 0.4315	 0.4910
k	 0.0661	 0.4450
l	 0.7315	 0.5700



Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
m	 0.6821	 0.5490
x	 0.5053	 0.5150