

CAPVT VII

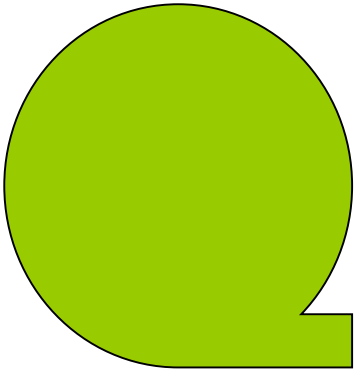
SIMETRIJA

Ob simetriji

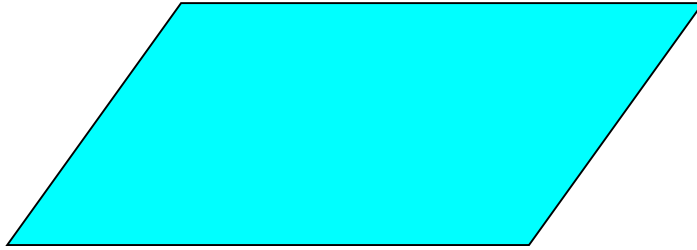
- Elementi simetrije
- Operacije simetrije
- Grupe točke

Osi simetrije

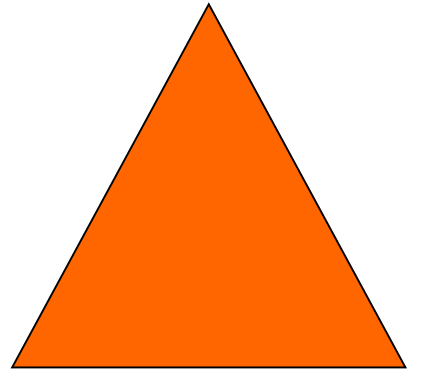
- Pravci oko kojih se promatrani objekt rotira. Pri punom okretu dogodi se da objekt “izgleda” jednako kao na početku rotacije jedan ili više puta. Broj takvih događaja pri punom okretu (360°) zove se **red osi**.



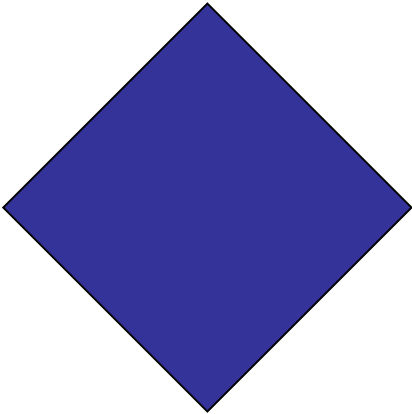
1



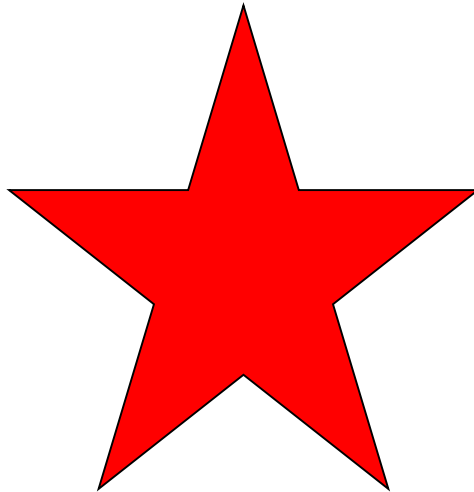
2



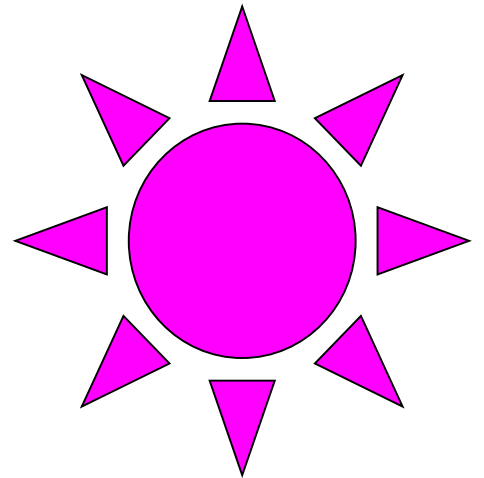
3



4



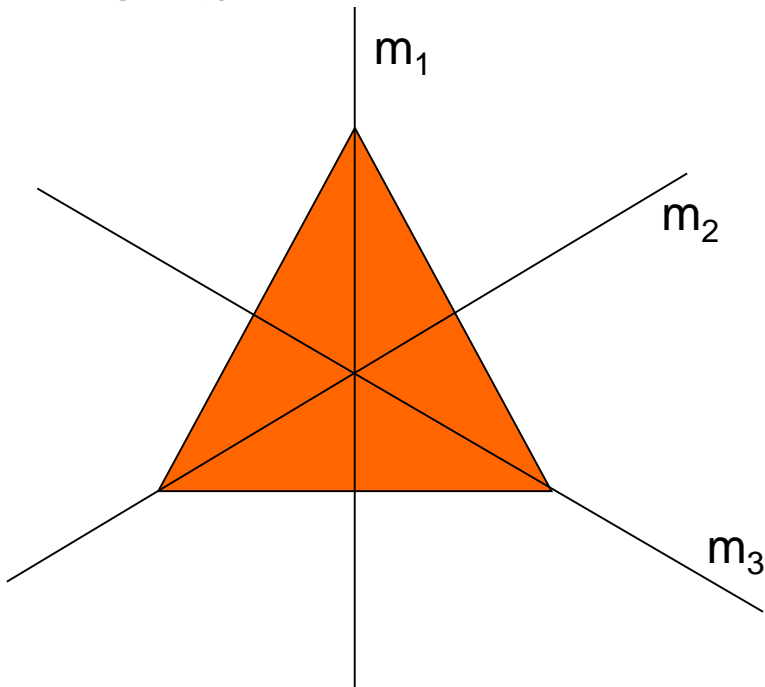
5



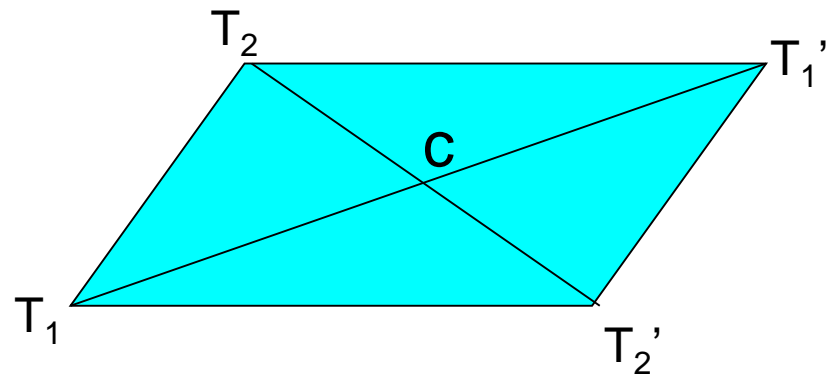
8

Zrcalne ravnine i inverzijski centri

- Ravnina koja presjeca objekt tako da se dvije polovice odnose kao predmet i zrcalna mu slika



- Točka u središtu objekta od koje za svaku točku objekta postoji odgovarajuća točka na istoj udaljenosti s nasuprotne strane objekta

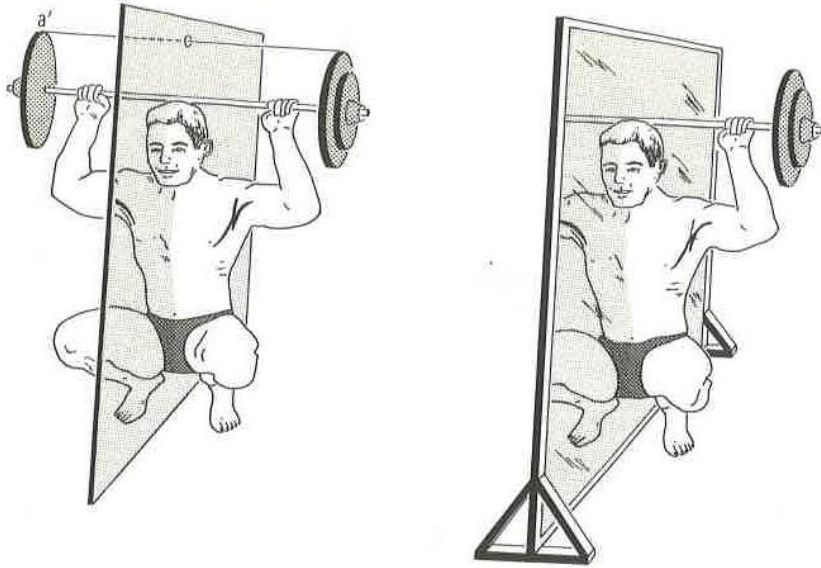


Lijevi i desni puževi

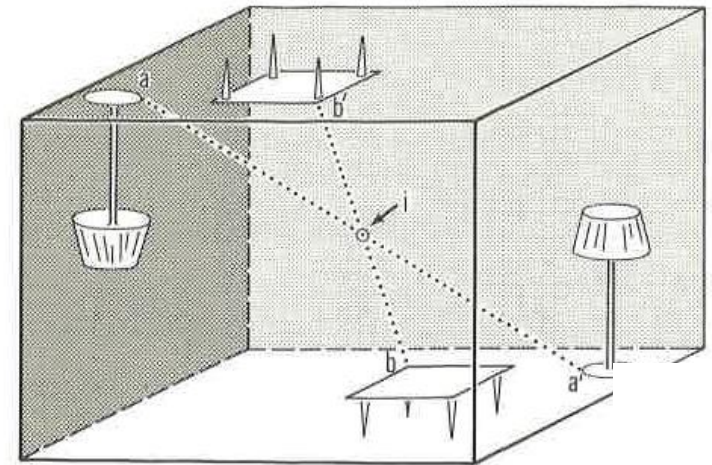


m

Elementi simetrije (primjeri)*

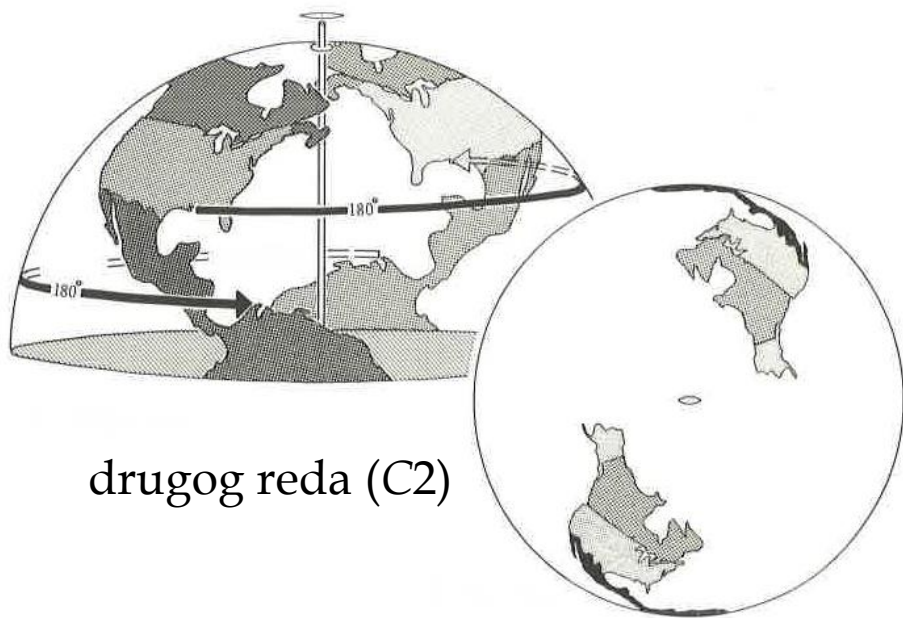


Zrcalna ravnina (m)

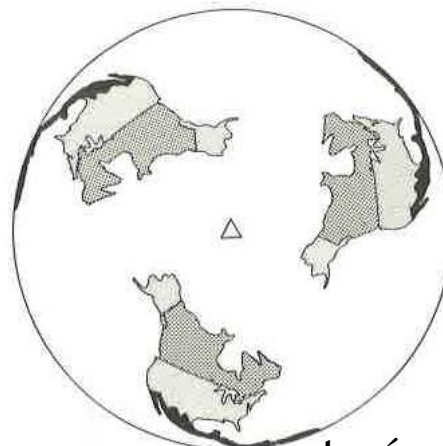


Centar inverzije (i)

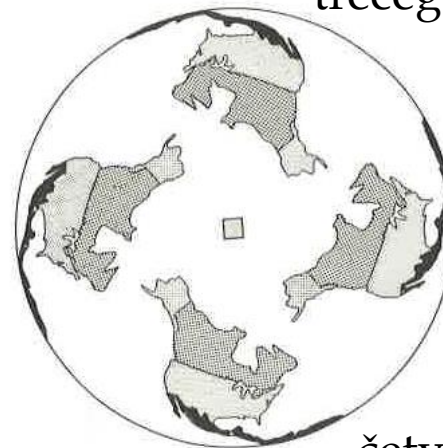
(Prave) osi rotacije



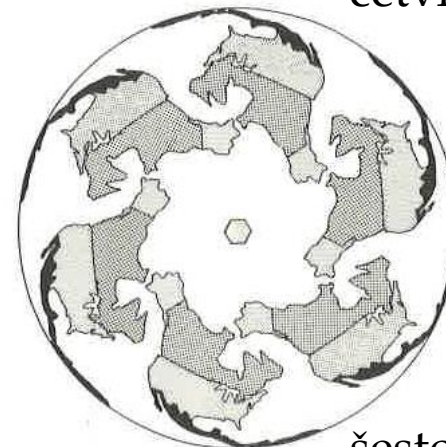
drugog reda (C2)



trećeg reda (C3)



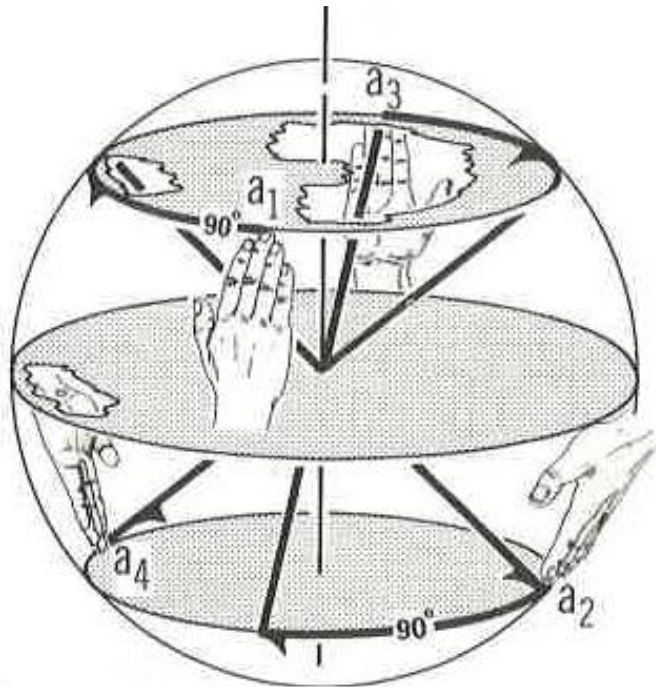
četvrtog reda (C4)



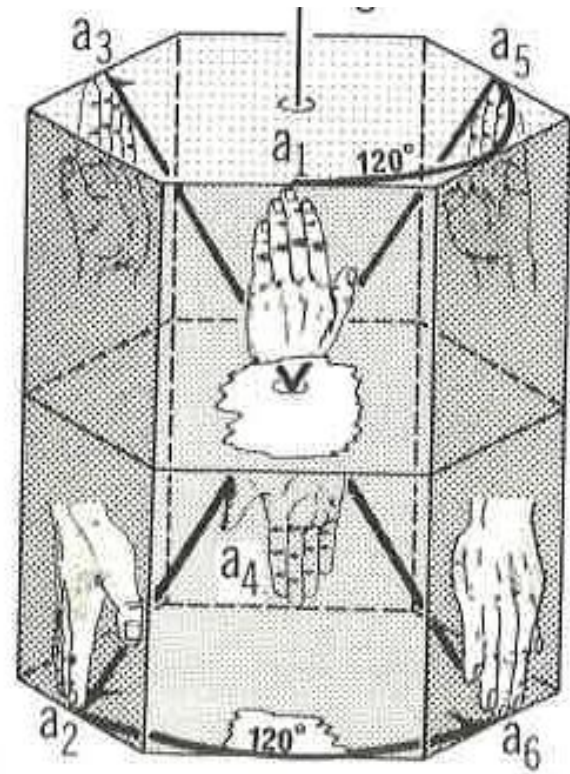
šestog reda (C6)

Pitanje: koje je nacionalnosti autor knjige (F. D. Bloss) iz koje su primjeri preizeti i u kojoj je zemlji knjiga tiskana?

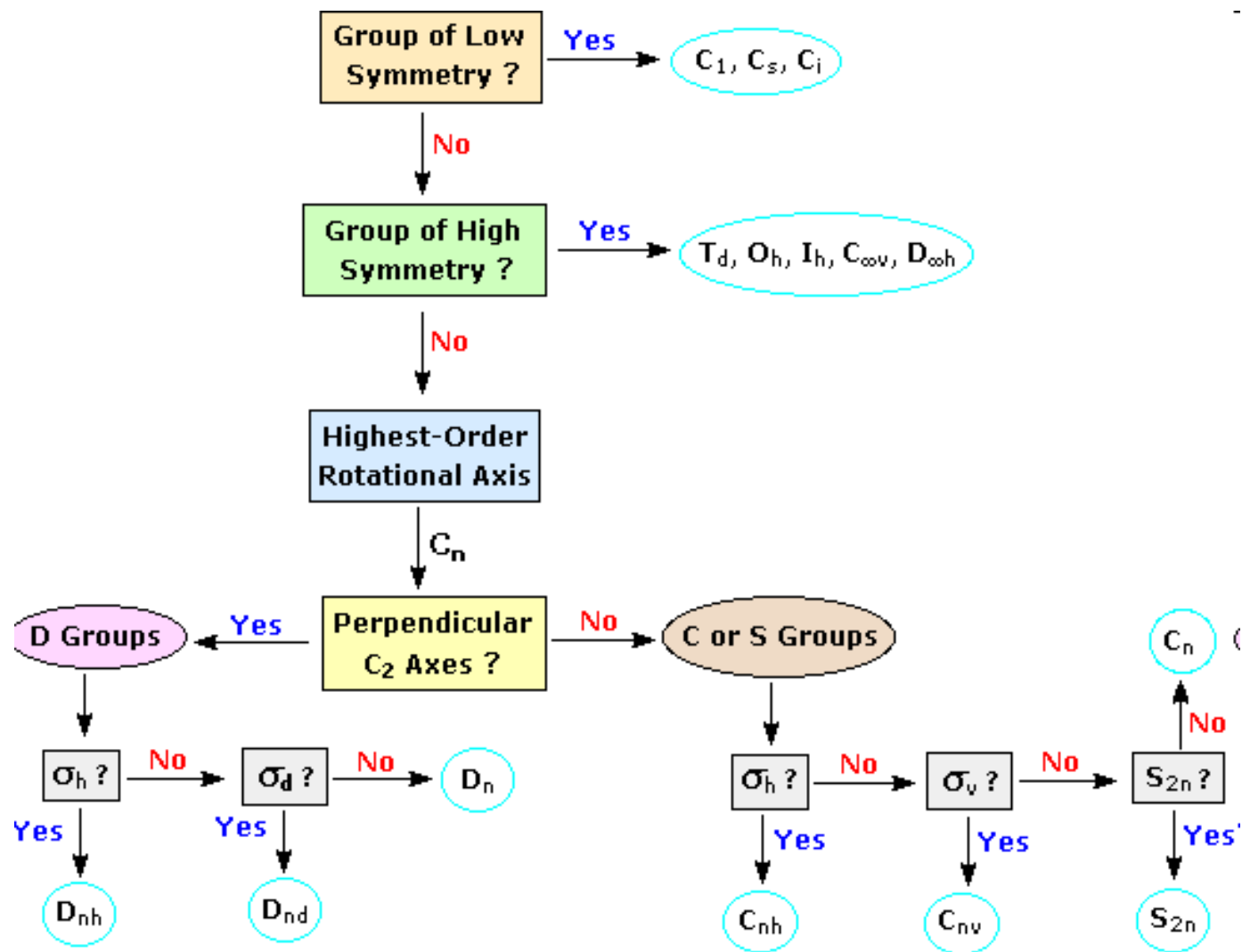
Neprave osi rotacije (rotorefleksne osi)



četvrtog reda (S_4)



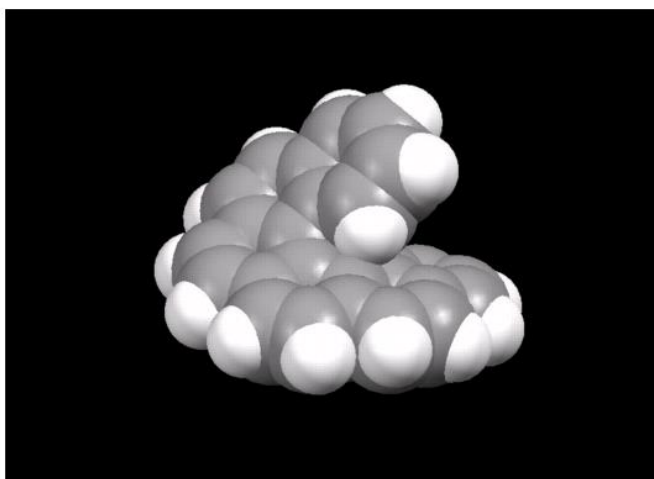
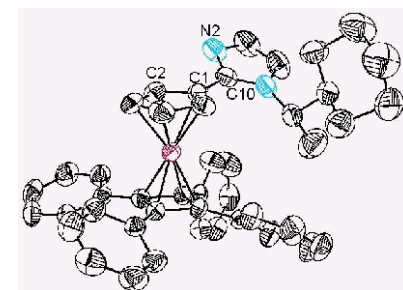
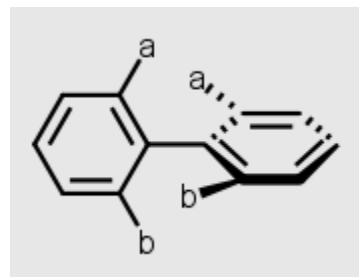
šestog reda (S_6)



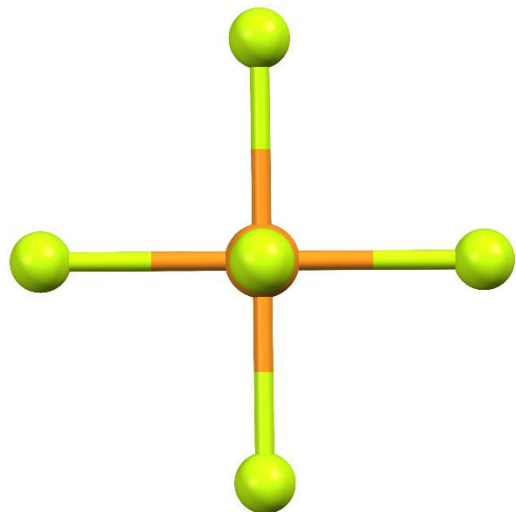
- Kiralnost
 - Izostanak elemenata simetrije 2. vrste
- Polarnost
 - Barem jedna polarna os

Vrste kiralnosti

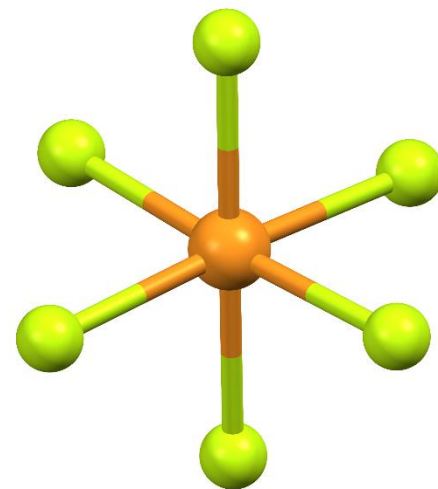
- Centralna
- Osna
- Ravninska
- Helikalna



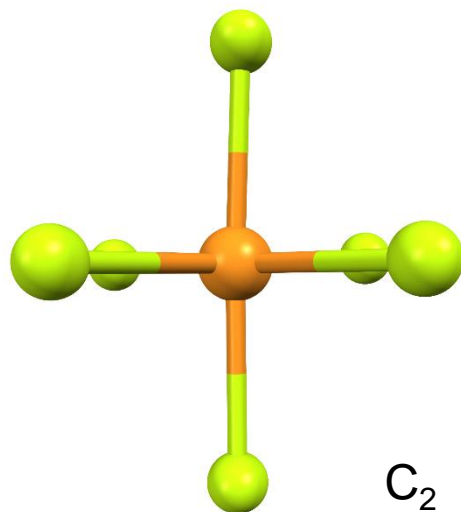
PF⁻



C₄

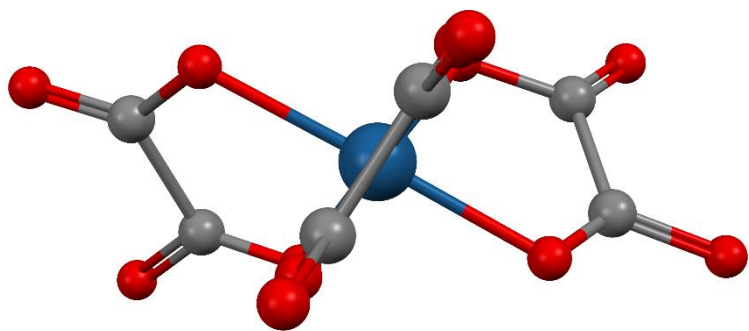
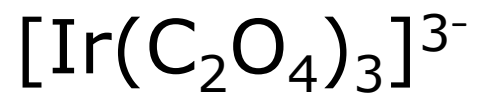


C₃

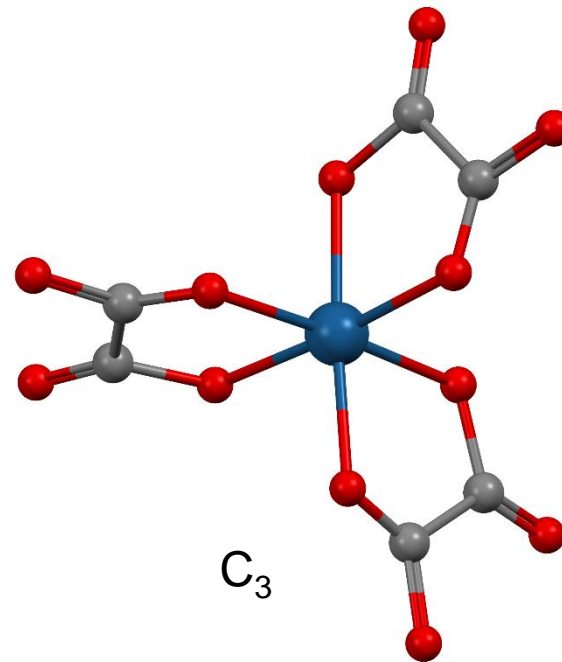


C₂

O_h

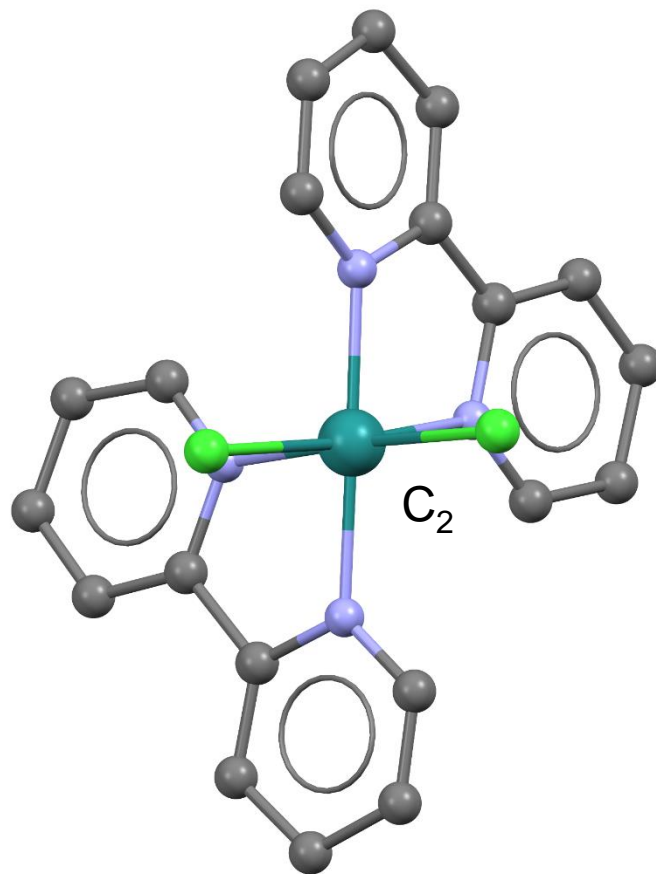
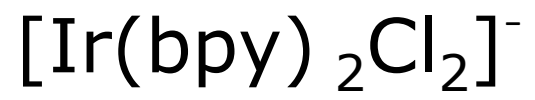


C_2



C_3

D_3



C_2

