

BioStruct - UiO

PhD Course announcement

Norwegian Graduate school in Structural Biology - A collaboration between 5 universities

Protein Crystal Spectroscopy (MBV 9220)

Kristine Bonnevie Hus, Blindern, Oslo

Time of course: August 15-19, 2016

ECTS: 5 (PhD level course)

Exam: Internet examination after course ending (pass/fail)

Deadline for registration: 30.06.2016

Course responsible: Hans-Petter Hersleth, UiO (h.p.hersleth@ibv.uio.no)

Contact for registration: Torill Rørtveit, UiO (torill.rortveit@ibv.uio.no)

Contact for accommodation: Bie Ekblad, UiO (bie.ekblad@ibv.uio.no)

External students must register as a guest student at UiO

The course will give an introduction to methods used to determine the “true” 3D structures of redox active sites in proteins containing redox, metallo and radical co-factors/centers. For these types of proteins the crystal structures determined by protein crystallography is not enough to fully describe the protein. Information about oxidation state, spin state, coordination and protonation is essential for understanding the function. The course will have lectures in protein crystal spectroscopy: light absorption (microspectrophotometry), Raman spectroscopy and electron paramagnetic resonance (EPR). The laboratory exercises will deal with obtaining crystal light absorption, EPR and Raman spectra of model proteins: myoglobin crystals with different redox states and other redox proteins as flavoproteins. One day of the course will be on theoretical methods (density functional theory) used to optimise the active sites in proteins and the special method quantum refinement which combine diffraction data and quantum mechanics.

Note! BioStruct covers the costs for travel and accommodation for BioStruct students participating in national courses at Norwegian universities other than the student's home institution. For more information contact Bie Ekblad (bie.ekblad@ibv.uio.no).

