POM-BASICS Summer School

"Polyoxometalate Chemistry for Fundamentals and Applications"

La Rochelle-France, June 13-15th 2022

Session 1- Condensation processes and POM design

Solution Speciation and Assembly in Non-Aqueous POM Synthesis

Trainer: John Errington, (Newcastle, UK)

Abstract of the course:

pH-Dependent condensation processes in aqueous solution are fundamental to polyoxometalate chemistry and much effort has been devoted to understanding and controlling the pathways to different POM structures. POM assembly is also solvent dependent and is well established that different structures are obtained in organic solvents. In this course, theoretical and practical aspects of non-aqueous POM synthesis will be considered and examples will be given to demonstrate the importance of ^{17}O NMR and show how it can be used to monitor structural development during the formation of Lindqvist-type structures. Links with metal alkoxide chemistry and the associated sol-gel processing of oxide materials will be highlighted to illustrate important aspects of the solution chemistry involved.