

Medicinal Inorganic Chemistry

Overview

The use of metal ions/complexes in medicinal practice extends into ancient history. Some medical uses were more in the form of magical potions to delay aging or improve virility, however medicinal inorganic chemistry as a discipline has come of age only in the last 30 years since the discovery of the antitumor activity of cisplatin. The field of medicinal inorganic chemistry is expanding and can be roughly divided into two main streams – therapeutic and diagnostic. Chemotherapeutics such as anticancer agents, metal-mediated antibiotics, antibacterials, antivirals antiparasitic, antiarthritis agents are becoming popular. Diagnostic applications of inorganic chemistry are in the rapidly growing field of medical imaging of all types with ^{99m}Tc - and other radiopharmaceuticals used in nuclear medicine being the highlight. In the present course key developments in metal based therapeutic and diagnostic agents, their commercialization, current research directions will be dealt with in detail. These advanced topics will be dealt with in the course for the benefit of M.Sc., Ph.D and faculty from the department of Chemistry, Savitribai Phule Pune University, its affiliated colleges, other universities and institutions

The primary objectives of the course are as follows:

- 1) Explaining the history, drug discovery pipeline and concepts of metal-based drugs.
- 2) Detailing the current status, mechanism and development of platinum based anticancer drugs
- 3) Current research directions using other metal complexes as anticancer, anti-arthritis, anti-diabetes , anti-bipolar disorders
- 4) Introduction to the concept of drug targeting by metal-peptide conjugates.

Modules	March 5-10, 2018
	Number of participants for the course will be limited to seventy-five.
You Should Attend If...	Students at all levels (B.Sc. (final year)/ MSc/MTech/PhD) and faculty from academic and scientists from Research Institutions. Executives from government as well as private R& D laboratories
Fees	No fees will be charged for attending the course

The Faculty



Nils Metzler-Nolte obtained his Ph.D. from LMU Munich is Ph.D. from LMU Munich (Germany) in 1994, did a postdoc with Professor M. L. H. Green at Oxford (U.K.), and started his independent research on bioorganometallic chemistry

at the Max-Planck-Institut für Strahlenchemie in Mülheim, Germany. He was appointed associate professor for pharmaceutical and bioinorganic chemistry at the University of Heidelberg in 2000 and full professor of bioinorganic chemistry at the Ruhr University Bochum in 2006. He served as dean of the university-wide graduate school from 2009–2012 and was vice president for early career researchers and international affairs of his university between 2010–2012. Nils was speaker of the DFG-funded research unit “Biological Function of Organometallic Compounds” and Council Member of the Society of Biological Inorganic Chemistry. His work was recognized by several fellowships and awards, the most recent being the Julius von Haast award of the Royal Society of New Zealand. He was Chair of the Gordon Research Conference “Metals in Medicine” in 2016. Nils serves on the international advisory board of several journals and is an associate editor for Dalton Transactions. With research interests in medicinal organometallic chemistry and functional metal bioconjugates, the group is running a full program from inorganic synthesis to cell biology. Professor Nolte has 180 publications, 3 books, 9 book chapters and 1 European patent to his credit. Prof. Nolte has delivered more than 70 Invited and Plenary talks at Universities, Research Institutions, and National and International conferences. Professor Nolte has been a Visiting Professor at the University of Milan, Italy, University of Stellenbosch, South Africa Visiting and the Ecole Nationale Supérieure de Chimie, Paris, France.

Course Co-ordinator

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