Global Initiative of Academic Networks **(GIAN)**

First GIAN Course

On

X-ray Structure Determination

June 13 – 26. 2016

Sponsored by

(MHRD)
Ministry of Human Resource Development
Government of India

School of Studies in Chemistry

Jiwaji University, Gwalior (M.P.)

NAAC "A" Grade

Website: www.jiwaji.edu

Dear Friends,

Ministry of Human Resource Development (MHRD), Govt. of India approved a new program titled Global Initiative of Academic Networks (GIAN) in Higher Education aimed at tapping the talent pool of scientists and entrepreneurs, internationally to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

It is our pleasure to inform you that GIAN Cell of Jiwaji University, Gwalior marks the start of its first GIAN course titled as "X-ray Structure Determination" (Course code: 156007B01) in School of Studies in Chemistry during June 13-26, 2016 with foreign faculty Prof. Ray J Butcher, Howard University, USA.

OUR UNIVERSITY

Jiwaji University came into existence on May 23, 1964 through M.P. Government Ordinance number 15 of 1963. The foundation was laid on the campus of over 225 acres of Naulakha Parade Ground by the then President of India Dr. Sarvapalli Radhakrishnan on December 11, 1964. The University territorial jurisdiction extends over the districts of Gwalior, Bhind, Morena, Sheopurkalan, Datia, Ashok Nagar, Shivpuri, and Guna and covers more than 400 affiliated Colleges. The University has been awarded "A" grade in its 2nd cycle of assessment and reaccreditation by NAAC.

OUR DEPARTMENT

The School of Studies in Chemistry, Jiwaji University, Gwalior came into existence in 1971 as teaching and research centre. Over a period of time, it has acquired prestigious status at National and International level. There have been significant contributions in the frontier areas of chemical sciences by way of research publications in journals of repute. Various funding agencies are providing financial assistance including International Funding Agency (RSC, UK). The department has been recognised by DST under its program for improvement of science and technology (FIST). Students of the department have got placement in different Government & Private sectors in the areas of Research and Development, teaching, Pharmaceutical Industries, Fine Chemicals Industries, Food Chemists etc. Many students are pursuing advance degree at leading Universities across the globe in the areas of Chemistry.

ABOUT GWALIOR

Gwalior is a historical city, situated in Madhya Pradesh. It is situated 120 km South of Agra and 389 km North of Bhopal. It is well connected to all major Indian cities by road, rail, and air. It is a city of music, with richest musical tradition. The legendary musician, Tansen belonged to Gwalior, was one of the nine Jewels of Emperor Akbar's court. Most famous and memorable landmarks include Gwalior Fort, the tomb of famous musician Tansen, Jai Vilas Palace, the museum and the Sun temple.

WHO SHOULD ATTEND

- Scientists, engineers and researchers from manufacturing, service and government Organizations including R&D laboratories.
- Students at all levels (BTech/MSc/MTech/PhD) or Faculty from reputed academic institutions and technical institutions.
- Technicians interested to learn handling of X-ray diffractometer and applications of single crystal X-ray diffraction studies.

OVERVIEW OF THE COURSE

X-ray crystallography is a scientific method used to determine the arrangement of atoms of a crystalline solid in three dimensional form. This is also a most favoured technique for structure elucidation of both chemical and biological interest including structure of proteins and biological macromolecules. The course aims to take a step forward to unravel the mysteries of this fascinating technology.

This course is organized in two modules that should be taken together. The topics in Module A will expose the participants to the entire process of X-ray crystallography like crystallographic experiment, data collection, solution and refinement. In Module B, special techniques and problems in crystallography like disorder, twinning will be emphasized. The topics in the module include X-ray diffraction, reciprocal lattice, crystal systems, space groups, structure factors, Fourier synthesis, phase problem, refinement by least square, challenges in crystallographic refinement and publishing crystal data.

FOREIGN FACULTY

Prof. Ray J. Butcher is a renowned crystallographer and Professor in Inorganic and Structural Chemistry at the Howard University, USA. He received B.Sc. (Hons.) degree in Chemistry in 1968 and a Ph.D. in X-ray Crystallography from the University of Canterbury, New Zealand in 1974. He spent two years (1974-1976) as Instructor at the University of Virginia and further one year as Post-doctoral Fellow (1976-77) at Georgetown University, Washington DC before he joined Howard University as Assistant Professor in 1977, Associate Professor in 1982 and Professor in 1997. He received Sigma Xi Visitors Medal for Outstanding Research at the University of Virginia in 1997. He served several places around the world as Visiting Professor, Visiting Scientist, NASA Fellow, Fulbright International Scholar, etc. He has been Co-Editor of Acta Crystallographica Section E, an International Journal in the field of X-ray Crystallography and also editor of special issue in 2007. He has been awarded Fulbright-Nehru Fellow at IIT Bombay during 2009-10 and Visiting Professor at the same place from December 2012 to January 2013. He has rare distinction of publishing more than 1100 research papers covering all aspects of chemistry and biology.

HOST FACULTY

Prof. Sushil Kumar Gupta has been involved in teaching inorganic chemistry since 1991 at Jiwaji University, Gwalior, India. His fields of research include co-ordination compounds of transition metals and organometallic compounds of bulky silyl ligands bearing donor groups. He has published more than 65 research papers in international journals, and orally presented his research findings in a number of conferences held in India and abroad. Fourteen PhD and 12 MPhil candidates have obtained their research degrees under his guidance. He has completed nine research projects with financial support from Indian agencies (DST, CSIR, UGC, DRDO, MPCST), and 3 research projects with support from the Royal Society of Chemistry, UK. He was Commonwealth Academic Staff Fellow at University of Sussex, UK (October 1996-September 1997), JWT Jones Fellow of RSC at University of Sussex, UK (January-April 2001), and Fulbright-Nehru Senior Research Fellow at Howard University, Washington DC, USA (September 2011-April 2012). He was admitted as Fellow of The Royal Society of Chemistry in 2013. He also made contributions to school chemistry textbooks of NCERT. He participated in the designing of postgraduate level courses dealing with instrumentation and commercial methods of analyses; environmental chemistry; and chemical sales and marketing management.

TECHNICAL SESSION

Participants will learn the topics through lectures and hands-on experiments. Also case studies and assignments will be shared to stimulate research motivation of participants.

COURSE DETAILS

Module A: X-ray Structure Determination : June 13 - June 19, 2016

Module B: Special Techniques and Problems in Crystallography : June 20 - June 26, 2016

Number of participants for the course will be limited to fifty.

REGISTRATION FEE AND ACCOMMMODATION

Registration to the portal (www.gian.iitkgp.ac.in) is one time affair and will be valid for lifetime of GIAN. Once registered in the portal, an applicant will be able to apply for any number of GIAN courses as and when necessary. One time Non-refundable fee of Rs. 500/- is to be charged for this service. It is to be noted that mere registration to the portal will not ensure participation in the courses. The course registration fee is as follows:

Participants from abroad	**:**	**US$500**
Industry/ Research Organizations	**:**	**Rs.4000**
Academic Institutions	**:**	**Rs.2000**
SC/ST Students	**:**	**Rs.1000**

The above fees includes all instructional materials, computer use for tutorials and assignments, & 24 hour free internet facility. The participants will be provided accommodation by the University on payment basis.

COURSE REGISTRATION FORM

A Course under MHRD-GIAN

On

X-ray Structure Determination

June 13 – 26, 2016

School of Studies in Chemistry,
Jiwaji University,
Gwalior- 474011-(M.P.)

Full Name: ……

Designation:……

Affiliation:……

Address for Correspondence:……

……

……

Mobile No.:…… **Email:**……

Course Registration Category:…… **Fee:**……

DD/Multicity Cheque No.:……

Bank Name:…… **Date:**……

Students seeking Registration in SC/ST category need to submit self-attested documentary proof.

All the payments shall be made by "DD/Multicity-Cheque" drawn in favour of "The Registrar, Jiwaji University Gwalior" payable at Gwalior.

Signature with date

Duly filled in registration form (original or scanned copy) along with the registration fees can be send to Course Coordinator: Prof. Sushil Kumar Gupta, School of Studies in Chemistry, Jiwaji University, Gwalior - 470011 (M.P.), India. Contact: **0751-2442764/2442875,**
Mob.: 9406587806.
E-mail: skggwr@gmail.com
http://www.jiwaji.edu

Global Initiative of Academic Networks (GIAN) Cell

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