

INTRODUCTION

X-rays have been extensively used in the industry and medical diagnostics since its discovery. As time goes new technology adds many new application oriented findings, which are the findings of the dedicated researchers all over the globe. Since we are now in the era of advanced technology, it is felt that, the users those who are directly involved in contributing substantially in controlling the quality of the materials produced from the industries or the experts who diagnose the diseases using those techniques, should be educated enough to take advantage of these newly developed techniques. Keeping that in view, this short term course has been designed to educate personnel from industries, hospitals, institutes, universities and R&D organizations.

SCOPE OF THE COURSE

The course has been structured to blend the fundamental concepts and methodologies with advanced innovative techniques for upgrading the knowledge of persons responsible for controlling the quality of life and materials. The most advanced techniques like XRD[both qualitative and quantitative analysis(including REITVELD analysis)], SAXS, GISAXS, PIXE, EDX, radiography, radiotherapy, CT scanning etc. are included in the course with special emphasis on industrial and medical applications. Besides class room teaching there are also laboratory demonstrations and on site demonstrations are the important features of the course.

It is expected that the participants from academic institutions, R&D organizations as well as professional engineers will be highly benefited by the course.

COURSE CONTENTS

1.Introduction to x-rays, their production & properties

2.Various X-ray techniques and application to industry and hospitals

- (a) X-ray imaging.
- (b)X-ray diffraction.
- (c) X-ray scattering.
- (d)X-ray spectroscopy

3.Basic principles of working of XRF, PIXE, EDX and their applications in industry and hospital

FACULTY LIST:

- 1. DK Bisoyi (Course coordinator)
- 2. Prof.A Dhar, Dept. of physics & Meteorology, IIT Kharagpur.
- 3. Prof. NV Bhat, Emeritus Professor, Bombay Textile Research Association, LBS Marg, Ghakopur(West), Mumbai-400086.
- 4. Prof. DK Nag, Retd Prof & Ex-Director, GSI(Mineral physics Division), Kolkata.

REGISTRATION AND FEE PARTICULARS

Applications in prescribed format and the course fee in the form of a cheque/demand draft drawn in favour of “**Continuing Education, NIT Rourkela**” payable at any bank in Roukela must reach the coordinator on or before **15th April, 2007**.

COURSE FEE: Rs. **8000**

Board, lodging and travel expenses shall be borne by the participants. Accommodation will be provided in Visitor’s House on Twin-sharing basis on prior request. The selected participants will be informed by **15th, April, 2007**.

APPLICATION FORMAT

AN ADVANCED SHORT TERM COURSE

On

Industrial and Medical applications of x-rays.

April 23 - 27, 2007

- 1. Name:
- 2. Designation:
- 3. Mailing Address:

- Telephone No.:
- Fax:
- e-mail :
- 4. Organization where employed:

- 5. Academic Qualification:

- Experience(in years):
- Teaching:
- Industrial:
- Registration Fee particulars:
- Amount : Rs.
- Cheque/DD No. and Date:

- 8. Accommodation Required: Yes/No.

Signature of the Applicant with date

**The duly filled up application should
mailed to :**

D.K. Bisoyi
DEPARTMENT OF PHYSICS
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008
ORISSA
Website: <http://www.nitrkl.ac.in/>
Tel: 0661-2462722 (O), 09437502873(M)
Fax No. 0661-2472926, 2462999
e-mail dkbisoyi@nitrkl.ac.in
dkbisoyi@rediffmail.com

ABOUT NIT ROURKELA

National Institute of Technology (NIT), Rourkela was founded as Regional Engineering College, Rourkela in 1961. It is a prestigious Institute with a reputation for excellence at both undergraduate and postgraduate levels, fostering the spirit of national integration among the students, a close interaction with industry and a strong emphasis on research, both basic and applied

The city of Rourkela, is a bustling industrial town, cosmopolitan by nature and is

well connected to all parts of the country by road and rail. It is en-route Howrah-Mumbai main line of South-Eastern Railway. Nesting amidst greenery on all sides, NIT campus is approximately 7km from Rourkela railway station. The nearest airports are Ranchi, Kolkata and Bhubaneswar, which are well connected by trains.

DEPARTMENT OF PHYSICS

Department of physics, NIT Rourkela(earlier called REC Rourkela was established in 1961. Since its inception, the Department is under dynamic progress and is reputed for imparting education both at undergraduate and post graduate levels along with Ph.D. programme. The department has it's own identity in the field of Small Angle X-ray Scattering (SAXS) research since it's inception. The Department has well equipped modern laboratories such as **Low temperature physics lab, Thin film lab, Material science lab, X-ray lab** for pursuing research keeping in view of the advancing technologies.

COURSE COORDINATOR:

DK Bisoyi,
Department of physics,
NIT Rourkela-769008.

Tel: 0661-2462722(O), 09437502873(M)
e-mail: dkbisoyi@nitrkl.ac.in
dkbisoyi@rediffmail.com

AN ADVANCED SHORT TERM COURSE

on

INDUSTRIAL AND MEDICAL APPLICATION OF X-RAYS

April 23 - 27, 2007



Co-coordinator

DK Bisoyi

Department of Physics
National Institute of Technology
Rourkela