

INTRODUCTION

Lasers provide the ability to accurately deliver large amounts of energy into confined regions of a material in order to achieve a desired response. For opaque materials, this energy is absorbed near the surface, modifying surface chemistry, crystal structure, and/or multiscale morphology without altering the bulk. This course covers a brief introduction to the fundamental principles governing laser propagation and absorption as well as the resulting material responses. Then different practical case studies will be undertaken which will be helpful for the participants to understand the complexity in the interaction of laser beam with the different work materials.

COURSE CONTENT

- Basics of lasers and its interaction with materials.
- Possible applications of lasers.
- Benefits and safety precautions.
- Practical classes: Different laser operations will be carried out in a Fiber laser workstation i.e. **Cutting, Welding, Bending, Glazing, Alloying, Hardening, Cladding, hole drilling on thin sheets** etc. The participants are also allowed to perform any specific laser operations which are not listed above.

ABOUT IIT(ISM) DHANBAD

The **Indian Institute of Technology (Indian School of Mines), Dhanbad** is a fully residential and co-educational institute situated in the heart of the country's prime coking coal belt, 260 kms from Kolkata with a campus spread over an area of 393 acres, (with 218 acres of existing campus and 175 acres under acquisition and development) the fully residential IIT(ISM) has all the facilities of world class academic institute. What started as an institution to impart mining education

has graduated into a full-fledged technical institution of international acclaim offering a host of programmes like B. Tech., M. Tech., M. Sc. Tech., and MBA. In addition the School offers M. Phil. and full as well as part time Ph. D. programmes, while also awarding D.Sc. as the highest degree of academic achievement.

The serene campus comprises academic buildings, student hostels and 100% residential facilities for faculty and staff apart from other infrastructure facilities for a cosmopolitan community. The School has links with reputed universities and institutes across the globe and has an alumni base all over the world. The School today is making foray into the newer areas of academic endeavors in tune with the changing times.

DATE & DURATION:

Five days, **24th July to 28th July, 2017, 6 hours** every day.

In case of insufficient number of participants the above date may be postponed.

COURSE COORDINATOR:

Dr. Alok Kumar Das

Assistant Professor,
Department of Mechanical Engineering,
Indian Institute of Technology(ISM), Dhanbad-826004, Phone: 0326 - 2235748,
Mobile: +91- 9471191234,
Email: eralok@yahoo.co.in

INTENDED PARTICIPANTS

Post Graduate Students, Research Scholars, Faculty Members, Scientists and practitioners from industry.

REGISTRATION

COURSE FEE (Including kit, fooding and lodging):

External Participants (outside IIT(ISM))	
Post Graduate students	Rs.8000/-
Research Scholars	Rs. 10000/-
Faculty members	Rs 20000/-
Scientists and practitioners from industry	Rs 25000/-

Fooding and lodging shall not be provided to participants from IIT(ISM) and the course fee is as per the IIT(ISM) rules.

NOMINATION & PAYMENT

Nomination along with course fee in the form of Demand Draft in favor of "**Registrar, Indian Institute of Technology (ISM), Dhanbad-826004**" payable at any bank available in Dhanbad, should reach to Course Coordinator at the address as given above on or before **15.7.2017**. The formal consent for attending the workshop may be send in advance through email to the coordinator.

The detail for online transaction (e-payment) of the fee is given below*:

Name of Beneficiary: **Indian Institute of Technology (ISM), Dhanbad** Address: Dhanbad, Jharkhand, Pin:-826004.
Bank Name: Canara Bank
Branch Name: Saraidhela, Dhanbad-828127
MICR Code: 826015003, IFSC code: CNRB0000986
Account no.: 0986101009746
Type of account: Saving
PAN No: AAAAI0686D

***Kindly send a copy of transaction with duly filled registration form to the course coordinator(s) before 1.07.2017.**

Registration Form

**A Short Term Course
On
Laser applications in
manufacturing and material
processing
From
24th July to 28th July, 2017**

1. Name: _____

(Capital Letters with Surname underlined)

2. Organization/Institute: _____

3. Designation/Dept.: _____

4. Qualification: _____

5. Specialization: _____

6. Gender : (M/F) _____

7. Mailing Address: _____

8. Mobile: _____

9. E-mail _____

10. Registration Fee: _____

11. Mode of payment: _____

Amount : _____

DD No./ Transaction ID: _____

Date: _____

Issuing Bank: _____

SIGNATURE: _____

Date: _____

**A Short Term Course
On**

**Laser applications in
manufacturing and material
processing**

From

24th July to 28th July, 2017

Coordinator

Dr. Alok Kumar Das



Organized by

DEPT. OF MECHANICAL ENGINEERING

**Indian Institute of Technology
(ISM), Dhanbad – 826004,
JHARKHAND.
INDIA.**