

Short Term Course
on
**ASSESSMENT OF
SPONTANEOUS HEATING
LIABILITY OF COALS AND
THEIR PREVENTION**
(ASHLCP-23)

SEPTEMBER 11 - 15, 2023



Organised by
Coordinators
Prof. Devidas S. Nimaje
Prof. B. K. Pal
Prof. D. P. Tripathy



Department of Mining Engineering
National Institute of Technology
Rourkela – 769008

Introduction

Spontaneous combustion in coal mines and coal stacks is recognized as the major hazard in terms of safety and economy. Due to increasing demand of coals, it is becoming obvious to go for mining of thin coals lying under difficult geo-mining conditions which further aggravates the above problem. It is therefore essential to study the spontaneous heating characteristics of coals considering the coal chemistry and also the geology of coal. Till date, researchers have made attempts to identify the genesis as well as for finding cost-effective remedial measures, but no concrete solutions have been established. In most parts of a mine, coal oxidation takes place, the air flow is sufficient to remove the heat produced and prevent development of heating. The danger lies in areas where there is sufficient air flow to provide supply of oxygen but insufficient to provide enough cooling to prevent heating. Such locations may be in areas of fractured coal with a pressure differential across them in piles of cut or broken coal placed in unventilated locations and particularly in goaves.

The present course will focus on assessing the spontaneous heating liability of coals using different experimental methods, updating research and development activities being carried out in India and abroad on prediction of sponcom as well as deal with scientific approaches for prevention and control of mine fires.

Course content

The course will include:

- Mechanism, theories and factors affecting spontaneous heating
- Fire indices to measure spontaneous heating
- To assess sponcom liability through modern methods viz. DTA/TGA, DSC, FTIR etc.
- Determination of fire risk potentials of Indian coals
- Modern preventive measures of spontaneous heating
- Dealing with coal mine fire in underground and opencast mines
- Prevention and control of stack fires
- Ventilation planning in shallow and deep mines for prevention of sponcom
- Prediction of sponcom liability of coals
- Case studies

Course structure

The course will consist of lectures and laboratory visits. The course will be primarily offered by faculty members of NIT Rourkela. Experts from other academic institutions and Research organization like IITs and CIMFR may be invited to share their latest research findings with the participants. Each session will be followed by interactive Question & Answer session.

Participation

The course will be useful for the academicians, scientists, middle level executives, planning mining engineers and decision makers looking after production, raw material supply, environment, health and safety management in mining, mineral, oil and gas industry, power plants and other allied industries. Students from Mining Engg., Chemical Engg., Applied geology, and other streams are encouraged to attend this course.

How to send nomination

Please send the names of your nominees with their designations and addresses, e-mail address along with sponsorship certificate to the Course Coordinator preferably before 31.05.2023.

Accommodation

Limited accommodation is available at NIT Rourkela guest house and shall be booked on prior request on payment basis. Alternatively, there are Luxury hotels available in the city. However, the accommodation in the campus is considered convenient.

Sponsorship

Sponsorship opportunities for industries are available under three categories.

- **Platinum Sponsor:** Sponsorship fees is Rs.2.00 Lakhs (4 free participants)
- **Gold Sponsor:** Sponsorship fees is Rs.1.50 Lakhs (3 free participants)
- **Silver Sponsor:** Sponsorship fees is Rs.1.00 Lakh (2 free participants)

*GST @18% shall be applicable as per Govt. of India Rules.

Course fee

The course fee of this course is **Rs. 25,000.00 (Rupees Twenty five thousand only)** per sponsored participant from **industries/academic institution**. Additional **18% GST will be levied as per GOI rules**. The course fee for other institute **students and research scholars is Rs. 5,000.00 (Rupees Five thousand only)** per participant. The course fee is payable by demand draft in favor of "**CONTINUING EDUCATION NIT ROURKELA**" payable at Rourkela or by electronic money. The course fee does not include boarding and lodging or transportation charges. **NIT Rourkela is exempted from Income Tax and while sending the course fee, no TDS should be deducted.**

The registration fees can also be paid directly by account transfer through NEFT/RTGS/IMPS using following Bank details:

Branch name: SBI, NIT Campus, Rourkela

IFSC code: SBIN0002109

Account Name: CONTINUING EDUCATION NIT ROURKELA

Account Number: 10138951784

MICR No: 76 9002 007

SWIFT Code: SBININBB137

Address for communication

For any other information or sending nomination, please write to:

Prof. Devidas S. Nimaje **Course Coordinator**

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Link: <https://website.nitrrkl.ac.in/Home/Events/>

National Institute of Technology Rourkela

NIT Rourkela is one of the premier national level institutions of repute for technical education in the country and is funded by the Government of India. Government of India has elevated the Regional Engineering College, Rourkela to a deemed university under the name of National Institute of Technology, Rourkela. The main objective of the Institute is to produce quality Engineers and Scientists in Graduate and Post-Graduate levels in various branches of Engineering and Science. The Institute is managed by the Board of Governors of National Institute of Technology (Rourkela) Society and vested with significant degree of administrative and financial autonomy. The campus of the Institute consisting of the academic buildings, halls of residence and staff colony is situated at the eastern end of Rourkela steel city, beyond Sector-1 over an area of 262 hectares of land provided by the Government of Orissa. It is a residential campus offering accommodation to faculty, staff and students. The campus has all the amenities for developing personal, social and academic skills of the student community. NIT Rourkela was ranked 601-800 in the world by the Times Higher Education World University Rankings (Engineering) of 2023 and 59th in Southern Asia University Ranking. In India, it is ranked 15th in Engineering Category by the National Institutional Ranking Framework (NIRF) in 2022.

Department of Mining Engineering

Established in the year of 1979, the Department of Mining Engineering has grown over the years as one of the pioneer mining education centres in the country. It has played a pivotal role in introducing the modern mining engineering curriculum in India. The department offers undergraduate, postgraduate, and doctoral courses in mining engineering. The department is actively involved in research activities in the areas of spontaneous heating of coal and mine fire, rock mechanics and ground control, mining machinery, underground and surface environment, coalbed methane, mine safety and reliability, remote sensing and GIS, mine closure planning and relevant computer applications.

SPONSORSHIP CERTIFICATE

Dr./Mr./Ms..... is an employee of institute/organization and his/her application is hereby sponsored. The applicant will be permitted to attend the short-term course at NIT, Rourkela during **11-15 September, 2023**, if selected.

Signature with Date & Seal
of Sponsoring Authority

The duly sponsored application should be mailed to

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Rourkela Attraction

