



ATAL Academy
Faculty Development Program
on

**“Mining & Mineral Processing: Advances in Technology
& Sustainable Challenges”**
December 14 to 18, 2021.



Organized by
Dept. of Mechanical Engineering
&
Dept. of Civil Engineering

C.V. Raman Global University
Odisha



Sponsored by
AICTE Training And Learning (ATAL) Academy
New Delhi
Coordinator

Dr. Sunita Routray, Associate Professor,
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Co- Coordinator

Mr. Sanjeet Sahoo, Assistant Professor, Dept. of
Civil Engineering

Introduction:

Mineral processing activities pose considerable challenges associated with the emission of pollutants to the environment. On the other hand, these industrial activities have a significant positive impact on the economy. The balance between the economic inputs versus the environmental footprint of industrial mineral processing determines its sustainability.

Sustainable mineral processing is the ultimate goal driving mineral processing plants to generate zero waste. This encompasses: (1) clean and reusable water—recycle all water used in the plant and remove any metal particulates in the water; (2) solid waste utilization—use solid tailings for infrastructure instead of impounding, and efficiently extract all useful minerals from the tailings; and (3) clean air—zero release of dust, nanoparticles, or toxic gases, and capture of emissions such as CO₂ and H₂SO₄ to convert into useful products. By striving to achieve zero-waste production in mineral processing, less hazardous compounds will be released into the environment, less material will be wasted, and companies will increase profit by processing old “waste” streams into marketable products. In the progression toward zero waste, sustainable mineral processing will address the issues of reducing carbon emissions, minimizing environmental effects.

While mining contributes to the economy, it has some adverse impacts on the environment. However, with the advancements in mining technologies, the industry has identified the importance of maintaining environmental sustainability during mining operations which combine various components such as resource efficiency, economics, safety and environment. The reduction of environmental impacts of mining relies on the balance between these factors.

The tentative topics to be discussed

- Major environmental problems associated with mining, such as acid mine drainage (AMD), land

- subsidence, mine waste, mine fire and issues related to blasting.
- Sustainable mineral processing will address the issues of reducing carbon emissions, producing zero waste and minimizing environmental effects
- Carbon Capture and Storage
- Sustainability assessment of the production of iron and steel, aluminium, copper, lead, zinc, nickel and gold and summarises their contribution to the economy and environmental impacts.
- Contribution of Indian Mining & Metal sector towards Atmanivar Bharat
- Technological development in processing of beach sand for recovery of industrial heavy minerals
- Use of advance unit operations in recovery of Valuable minerals etc.
- Recovery of values from lean ore deposits
- Preparation of Graphene from graphite

Resource Persons:

Experts from foreign universities, IITs, NITs, CGU-Odisha and Industries will conduct the theory and practical sessions in the program.

Selection:

There is no registration fee for eligible participants of AICTE approved institutes. As seats are limited, the preference will be on a first-come-first-serve basis. The intimation regarding selection will be sent to the candidates by email as per the schedule. Certificates will be issued to the participants only after attending the 80% course and securing a 60% mark in the final test. The FDP is face to face virtual mode.

About the Institute:

C. V. Raman Global University (CGU), Odisha was established as per “Odisha Act 01 of 2020”. The university’s vision is to develop integrated scholastic ability and skills in students, through quality education. Especially linking knowledge and skill seamlessly through experiential

learning, leading to competence for employability, innovation, research, and entrepreneurship. Then taking India's knowledge and innovation across the globe and create a new paradigm.

CGU has evolved and come a long way from being an engineering college named C.V. Raman College of Engineering (CVRCE) established in 1997. Since its inception, it was wedded to quality and steadfastly remained committed to bringing about rapid transformations in the field of technical education. This led to the establishment of smart classrooms, world class labs, skilled courses, and over 25 Centers of Excellence in collaboration with industries. This includes Bosch Rexroth, Festo, Siemens, Schneider Electric, Cisco, AWS, CDAC, Tata technologies, Marcraft, GalSen, Quasar to our own advance manufacturing center catering to PSUs, ISRO to global industries.

These linking of skills and knowledge have led to research projects, consultancy, and production of industrial components worth multiple crores, to CGU student winning India's first gold by an Indian in world skills. The university today has over 20 startups under its AIC and TBI incubation centers. Further CGU trains 1000s of children under skilling program working with Gov of Odisha and GoI. Leveraging the NEP2020 process CGU aspires to be a truly global university.

About the Departments:

The **Department of Mechanical Engineering** is one of the oldest department in CGU existing from the time inception. The programs in the department have been accredited and are imparting quality education linked with experiential learning. The department also has multiple skill-based learning Center of Excellence established in collaboration with those of Bosch Rexroth, Festo, Robotics, Industry 4.0 ready center for manufacturing, and an advanced center for Air-conditioning and Refrigeration (HVAC).

The **Department of Civil Engineering** came into being in the year 2009 and seven batches have been graduated so far.

The department has been with good blend of experience in academics and industry and the young, promising talents to form a formidable teaching strength to inspire and guide the students in the program. The department thrives with centre of excellence in plumbing, imparting training in Revit, AutoCAD, STAAD pro, GIS and RS etc.

ATAL Academy:

AICTE Training and Learning (ATAL) Academy is established with the vision "To empower faculty to achieve goals of Higher Education such as access, equity and quality". ATAL academy will conduct a series of workshops in thrust areas identified by AICTE. ATAL Academy successfully conducted 5 days face to face 190 FDP in nine thrust areas for AY: 2019-20.

Prospective Participants:

This workshop is open for participants from academic Institutions including faculty members, post-graduate students; Ph.D. scholars from AICTE approved technical institutions, and industry persons.

FDP Coordinator

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FDP Co-coordinators

Dr. Rahul Kumar, Mr. Madhu.K.R. Pulagam
(Department of Mechanical Engineering)

Key Points:

- ❖ No registration fee for the participants.
- ❖ A test shall be conducted at the end of the program and participants will be awarded a certificate of participation of 5 days FDP from ATAL Academy

Organizing Committee:

Chief Patron

Mr. Sanjib Kumar Rout, Founder President, CGU

Patron

Prof. B. S. Satyanarayana, Vice-Chancellor, CGU

Chair

Prof. D. K. Biswal HoD (ME), CGU

Advisory Committee

Prof. K. C. Patra, Director, CGU
Prof. S. K. Sarangi, Advisor, CGU
Mr. Sibasis Maity Advisor, CGU
Prof. P. Kanungo, Dean Engineering, CGU
Prof. N. S. Das, Professor (ME), CGU
Prof. S. S. Mohanty (Head, CE), CGU

Local Organizing Committee

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|--------------------|-------------------|
| Dr. M. K. Parida | Dr. H. Joardar |
| Dr. S. K. Rout | Dr. T P Mohapatra |
| Dr. M.K. Gopaliya | Dr. B C Behera |
| Dr. B. R. Moharana | Dr. S. Basak |
| Mr. R K Jena | Mr. P Mishra |
| Mr. B.K.Khamari | Mr. Sanjeet Sahoo |
| Dr. K. P. Bauri | |

Registration

- ❖ Those who are willing to participate are requested to Register at ATAL website: <https://atalacademy.aicte-india.org/signup>
- ❖ Once sign in successful, you can chose the workshop "Mining & Mineral Processing" by clicking "+" button of corresponding workshop

