

INTERNATIONAL SYMPOSIUM

CARBON CAPTURE AND SEQUESTRATION

The symposium provides an overview of Carbon Capture and Sequestration (CCS), considered to be a potentially effective technology for the reduction of CO₂ emissions from large stationary sources such as power generation units or chemical processing plants. Widespread adoption of CCS technology is needed to meet the Paris Agreement's goal of limiting the rise in global temperature to below 2°C.

The process of CCS involves: (a) capturing CO₂ before it is emitted into the atmosphere, (b) compressing and transporting the CO₂ to a geologic storage site, and (c) injecting it into the site for long-term sequestration. The geologic storage site could be a deep saline formation, a depleted oil or gas field, or an active oil field conducting CO₂ enhanced oil recovery (EOR). The subsurface operations part of CCS also provides a mechanism for CO₂ sources to monetize their emissions through tax credits for long-term geologic storage and/or revenue from incremental oil production due to EOR operations.

SPEAKERS



DR. W.S. WINSTON HO
PROF, THE OHIO STATE UNIVERSITY,
USA



DR. SRIKANTA MISHRA
TECHNICAL DIRECTOR, GEO-ENERGY MODELING AND
ANALYTICS, BATTELLE MEMORIAL INSTITUTE, USA



DR. SUMIT KUMAR
ASST. PROF, INDIAN INSTITUTE OF
TECHNOLOGY GUWAHATI, INDIA



DR. BISHNUPADA MANDAL
PROF, INDIAN INSTITUTE OF TECHNOLOGY
GUWAHATI, INDIA



DR. ARCHANA M NAIR
ASSOC. PROF, INDIAN INSTITUTE OF
TECHNOLOGY GUWAHATI, INDIA



MR. ANKUR MALYAN
COUNCIL ON ENERGY, ENVIRONMENT, AND
WATER, INDIA

WHO CAN ATTEND?

Students and scientists who are starting off in their career in carbon capture and sequestration, individual who are interested in subject matter.

**FEBRUARY
21-22,
2022**

Via Microsoft Teams

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INTERNATIONAL SYMPOSIUM

About IIT Guwahati

Indian Institute of Technology Guwahati, the sixth member of the IIT fraternity, was established in 1994. The academic programme of IIT Guwahati commenced in 1995. At present the Institute has eleven departments, seven inter-disciplinary academic centres and five academic schools covering all the major engineering, science and humanities disciplines, offering BTech, BDes, MA, MDes, MTech, MSc and PhD programmes. Within a short period of time, IIT Guwahati has been able to build up world class infrastructure for carrying out advanced research and has been equipped with state-of-the-art scientific and engineering instruments. Indian Institute of Technology Guwahati's campus is on a sprawling 285 hectares plot of land on the north bank of the river Brahmaputra around 20 kms. from the heart of the city. With the majestic Brahmaputra on one side, and with hills and vast open spaces on others, the campus provides an ideal setting for learning.

About Department of Chemical Engineering at IIT Guwahati

The Department of Chemical Engineering at Indian Institute of Technology Guwahati started functioning in 2002 and has been offering all degrees in Chemical Engineering (Bachelor's, Master's and Doctoral curriculums in Chemical Engineering). The Department's VISION is to "Nurture creative minds for academic excellence in Chemical Engineering and Science to foster value based and sustainable society". The major OBJECTIVES of the vibrant department are to, DEVELOP research culture, IDENTIFY engineering solutions for a sustainable society, SHARE state-of-art knowledge and facilities, CREATE platform to disseminate research and development, MENTOR academic and research institutes in the quality improvement, ENABLE optimal utilization of the resources in the region, INSPIRE entrepreneurial spirit, PROMOTE pedagogy and ethics in academia and research, and DELIVER quality technical education.

About Indian Institute of Chemical Engineers (IChE)

Indian Institute of Chemical Engineers (IChE) was born in the year of Indian Independence during the days fomenting with nationalistic inspirations. Dr Hiralal Roy, the great visionary and pioneer of chemical engineering education in India, along with few other stalwarts mooted the idea of having such a forum within the country to rear the nascent initiatives for spread of chemical engineering education and foster the interest of the profession. A modest beginning was made on 18 May 1947 in one room of Jadavpur University, Kolkata, with as few as 30 members and with little fund and infrastructure. The IChE has come a long way since. Today, with about 29,000 members on its roll, the Institute has emerged as an important national platform overseeing the interest of the academics and the industry in the multifarious fields of chemical engineering. Its activities are spread across the country through its HQ and 42 Regional Centres as well as 165 Student Chapters. This year IChE is celebrating its 75 years of Glorious Journey.

About Guwahati Regional Chapter of IChE

The Guwahati Regional Chapter of IChE was established at IIT Guwahati in 2005 and is involved in the benefit of chemical engineers in North-eastern states through organizing meetings, conferences and seminars, arranging workshops and industrial visits, refresher courses and counseling sessions, promoting research, confer awards and prizes, guiding chemical engineering students in their career planning, and initiating activities for the betterment of the social, technical and professional standards of their members.

AGENDA

21 February 2022

Time shown is in Indian Standard Time

18:00 – 18:30

Inauguration of Symposium

18:30 – 19:00

Rationale for CCS (Dr. S. Mishra, Battelle Memorial Institute, USA)

19:00 – 19:45

Overview of CO₂ Capture Technologies: Great Progress on Membranes (Dr. W.S. Winston Ho, The Ohio State University, USA)

19:45 – 20:15

CO₂ storage capacity estimation (Dr. S. Kumar, IIT Guwahati, INDIA)

20:15 – 21:00

Injectivity analysis and modeling (Dr. S. Mishra, Battelle Memorial Institute, USA)

22 February 2022

Time shown is in Indian Standard Time

17:00 – 17:45

Overview of CO₂ Capture Technologies: Progress on Amine based Absorption (Dr. B. Mandal, IIT Guwahati, INDIA)

17:45 – 18:30

Geological Carbon Storage and related risks (Dr. Archana M Nair, IIT Guwahati, INDIA)

18:30 – 19:15

Monitoring for CO₂ containment (Dr. S. Mishra, Battelle Memorial Institute, USA)

19:15 – 20:00

Permitting of CO₂ storage facilities (Dr. S. Mishra, Battelle Memorial Institute, USA)

20:00 – 20:45

Current status and future outlook for CCS (Mr. Ankur Malyan, Council on Energy, Environment, and Water, INDIA)

20:45-21:00

Concluding Remarks and Vote of Thanks (Dr. B. Mandal, IIT Guwahati, INDIA)

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CHIEF PATRON

Prof. T. G. Sitharam
Director, IIT Guwahati

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Head, Dept. of Chem Eng.
IIT Guwahati

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