



SEANEWS



CoE-SEA launched Weekend Talk on Every Friday at 8.00 PM (IST)

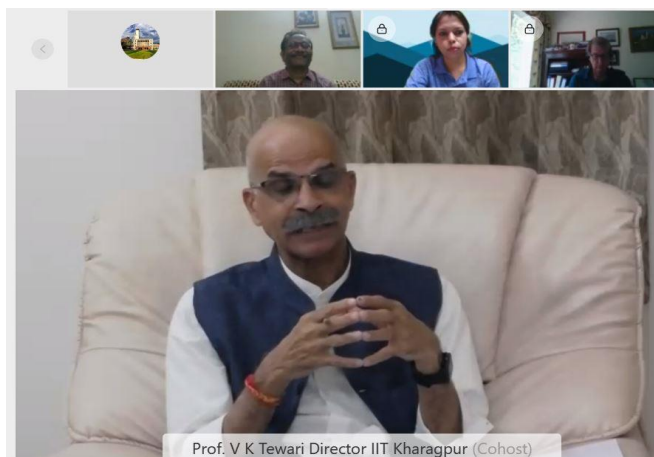
E - INAUGURATION OF WEEKEND TALK

Prof V K Tewari, Director, IIT Kharagpur and Mr. Andrew Page, Past Chairman of World Steel Association, Health & Safety Committee inaugurated the weekend talk on Safety Engineering, Management and Analytics on 4th June, 2021 on a virtual platform.

Prof. V K Tewari, Patron and Chief Guest of this inaugural event, in his address to the audience, brought out the importance of such Centre at IIT Kharagpur to improve safety from design and carry out the implementation at the industry level by working in safety engineering, management and analytics. By imparting safety engineering at the graduation, post-graduation and research levels, will help to address the hazards at design and all the other levels of the life cycle of product/process/system systematically. He also mentioned that the different key verticals of safety, such as safety analytics, industrial safety, mine safety, chemical and process safety, agriculture and farm safety, electrical safety, construction safety, road safety, manufacturing safety will be addressed by the synergy of different departments/schools/Centers of IIT, Kharagpur and this Centre will take the nodal role.

He appreciated the efforts of Prof J Maiti and O B Krishna in bringing the CoE to reality. He also gave valuable guidelines how

to take it forward. Micro-specialization, Dual Degree, and M. Tech Programs implementation in a phased manner and with research & consultancy projects, and training for the industries by the CoE-SEA will fulfil the overall objectives of it. He also mentioned that the world-renowned safety expert Andrew Page’s association will be of great value. Mr. Andrew Page, guest of honor, has appreciated the initiatives and expressed his pleasure to be associated with CoE-SEA, IIT Kharagpur.



"It takes leadership to improve safety" - Jackie Stewart

PREDICT HAZARD & PREVENT ACCIDENT

EXPERT TALK ON SEMA UNDER AZADI KA AMRIT MAHOTSAV

WEEK 01

Prof. Jhareswar Maiti, Chairman of Centre of Excellence in Safety Engineering and Analytics (CoE-SEA) elaborated on his expertise “Overview of Safety Engineering, Management and Analytics”, on the 4th June 2021. He discussed about the effectiveness of the safety management, concepts of safety analytics, and information about data driven management system.

Click here to watch the talk: [Link](#)



WEEK 02



Mr. Andrew Page, Past Chairman of World Steel Association Health & Safety Committee, Ex-MD of Coated Products/Long Products, Corus, Ex VP, Corporate SHE Tata Steel, Guest of Honor, discussed on “Global perspective of Safety Engineering, Management and Analytics” on the 4th June 2021. He spoke about the ABC model of Antecedents, habits and personal risk perception, application of mind on the antecedents.

Click here to watch the talk: [Link](#)

Prof George Boustras, Editor in Chief, Safety Science and Director, CERIDES, European University of Cyprus delivered his expert talk on “Upcoming Challenges in Safety Science and Engineering” on 11th June 2021. He spoke on challenges in occupational safety and health, change in safety, two parallels of safety and security and described the threats of cybercrime and cyber-attacks on societal safety.

Click here to watch the talk: [Link](#)



WEEK 03



Prof Uday Kumar, Chair Professor, Lulea University of Technology (LTU), SWEDEN shared his thoughts, knowledge and experience on “New Technology Empowered Safety Management: Issues, Challenges and Future Directions” on 18th June 2021. He mapped reliability and maintenance, principles of reliability and maintenance and the importance of asset management in ensuring safety, issues and challenges the operational errors by human leading to accidents, about the role of technology in predicting future and in safe and transferred asset management.

Click here to watch the talk: [Link](#)

WEEK 04

Prof O B Krishna, Visiting Professor at IIT Kharagpur, India delivered a very informative talk on “Analytics Based Integrated Safety Management Systems” on 25th June 2021. Introduced the concepts of hazards, hazard triangles, safety interventions, risk control systems, leading and lagging indicators, work safety total safety model, safety performance indicators and the measurement of performance of risk control systems through the leading and lagging indicators.

Click here to watch the talk: [Link](#)



SAFETY FIRST AND ALWAYS

WEEK 05

Prof Valerio Cozzani, Professor at Department of Chemical Engineering, University of Bologna, Italy spoke eloquently on “Risk Analysis of cascading events in Chemical and Energy systems” on 2nd July 2021. He discussed about the features of cascading events in the chemical & energy industry, specific issues in the assessment & management of risk due to cascading events, features and complexity of NATECH accidents and methods for risk assessment.

Click here to watch the talk: [Link](#)



WEEK 06



Prof Davide Manca, Head of PSE – Lab, Polimi delivered his expert talk on the topic “Virtual Reality and Accident Simulation” on 9th July 2021. He described dynamic simulation, operator training simulation, accident event simulators, features of AXIM, accident identification & alarm, emergency procedure and dynamics of accident event.

Click here to watch the talk: [Link](#)

WEEK 07

Mr. Birendra Kumar Verma, Joint President and Group head Safety Officer, Adani Group shared his thoughts, knowledge and experience on “Safety Performance Indicators for Process Industries” on the 16th July 2021. He detailed on Process Industries, safety dimensions in process industries, safety dimensions, safety performance measurement, safety performance indicators and process safety pyramid. He exemplified the talk with various case studies.

Click here to watch the talk: [Link](#)



WEEK 08



Prof Genserik Reniers, Editor, Journal of Loss Prevention in the Process Industries presented a very informative talk on “Operational safety Economics – The Basics” on 23rd July 2021. Discussed on decision-making regarding safety investments (prevention and protection) to avoid or mitigate possible future consequences (losses) using micro-economic parameters into the decision-making process.

Click here to watch the talk: [Link](#)

WEEK 09

Dr. Ashish A Trivedi, MBBS, DIH, MD, CCWS, MHFEM discussed on his expertise “Wellness at workplace including COVID-19 Challenges” on 30th July 2021. He elaborated on the major causes of work-related deaths, healthcare workers’ preparedness and screening in Brunel and work from home challenges.

Click here to watch the talk: [Link](#)



DO IT THE SAFE WAY, DO IT EVERYDAY

WEEK 10

Dr. Gaurav Nanda, Assistant Professor, School of Engineering Technology, Purdue University, spoke eloquently on the topic “Safety data Analysis for Injury Surveillance” on the 6th August 2021. He has dissected the injury surveillance problem into a sequence of interdependent sub-problems and showed how accident causation models, machine learning algorithms and artificial intelligence be used for predicting injuries and developing decision support system for hospital injury surveillance.

Click here to watch the talk: [Link](#)



WEEK 11



Mr. Agam Kumar, Chief Safety Officer, Tata Steel BSL, Odisha, delivered his expert talk on “Importance and Impact of road safety inside major factory premises – Practices implemented at Tata Steel” on the 13th August 2021. He explained the progressive developments in road safety improvement over the years within Tata Steel Plant premises, how AI, CCTV videos, and analytics are being used in in-plant road safety surveillance, and how positive enforcement provides win-win situations to all employees.

Click here to watch the talk: [Link](#)

WEEK 12

Dr. Diptendu Das, Senior Scientific Officer and Lead inspector, Atomic Energy Regulatory Board (AERB), Government of India shared his thoughts, knowledge and experience on “Fire safety Analysis and Evaluation in Industries” on the 20th August 2021. He explained the basics of fire science & engineering and the breadth and depth of types of fire, fire hazard assessment, fire models, fire prevention, and fire control, multiple initiatives and focused upon correct documentation of fire issues from design.

Click here to watch the talk: [Link](#)



WEEK 13



Mr. Ansuman Ghosh, AVP – Corporate Safety, Aditya Birla Group (ABG), presented a very informative and knowledgeable talk on “Process Safety Performance Monitoring – Role of big data analysis” on the 27th August 2021. Explained the basic ingredients for PSM and workable six-step methodology for PSM. In the process, he highlighted how big-data arises in PSM and how to collect, understand, organize, and analyze big-data. The phase-wise implementation of big-data analytics.

Click here to watch the talk: [Link](#)

“Safety is not an intellectual exercise to keep us in work. It is a matter of life and death. It is the sum of our contributions to safety management that determines whether the people we work with live or die.” – Sir Brian Appleton

SAFETY ISN'T EXPENSIVE, IT'S PRICELESS

PUBLICATION WATCH

- Assessment of virtual reality-based safety training simulator for electric overhead crane operations. Safety science. <https://doi.org/10.1016/j.ssci.2021.105241>
- RT-GSOM: Rough tolerance growing self-organizing map. Information Sciences. <https://doi.org/10.1016/j.ins.2021.01.039>
- A real-time video surveillance system for traffic pre-events detection. Accident Analysis & Prevention. <https://doi.org/10.1016/j.aap.2021.106019>
- Dual Hesitant Z-number (DHZN), Correlated distance and risk quantification. International journal of intelligent systems. <https://doi.org/10.1002/int.22642>
- Edgesafe: Dynamic load balancing among Edge nodes for provisioning safety-as-a-service in vehicular IoT Applications. IEEE Transactions on Vehicular Technology. <https://doi.org/10.1109/TVT.2021.3097557>
- DQ-Map: Dynamic decision query mapping for provisioning safety-as-a-service in IoT. IEEE Internet of Things Journal. <https://doi.org/10.1109/JIOT.2021.3097535>

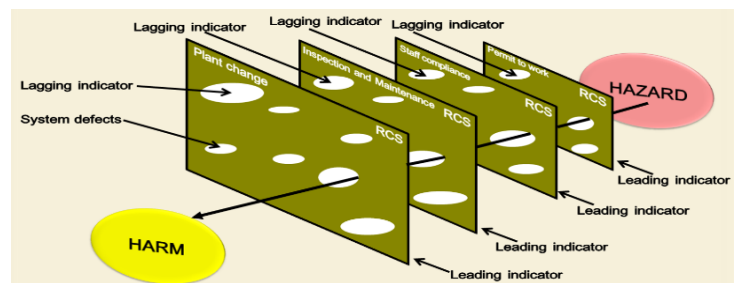
ACHIEVEMENTS

- Prof. Ashis Bhattacharjee has been selected to be a 125th Anniversary Fellow for the College of Earth and Mineral Sciences (EMS) of the Pennsylvania State University (Penn State).
- Prof. J. Maiti delivered the key note speech on “Safety, Risk and Analytics” on Sept 25, 2021, at the 2nd International Symposium on Data Analytics, Risk and Technology, organized by Amex DART Lab, IIT Madras.
- Prof. Ashis Bhattacharjee joined on invitation as Editorial Board member of the International Journal of Statistics in Medical Research, published by Life-science Global.
- Prof OB Krishna was a jury member for the “Safety Innovation Award 2021” of Aditya Birla Group.
- Prof OB Krishna was invited for an expert talk at the Aditya Birla Group - 6th edition of ABG Sustainability Conference, held virtually from 28 - 30 September 2021 focusing on “ESG Road to Resilience”.

LEARNINGS

“Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less.” - Marie Curie

REASON (1990) proposed an accident causation model, named ‘Swiss Cheese Model’. According to Reason, accidents are usually not caused by isolated factors, but by a combination of system defects. When all levels of defects occur together (light penetrates the cheese), the system loses its defense function and an accident occurs (Reason, 1990 1997, 2008).



INTERNATIONAL CONFERENCE

The Centre is jointly organizing The International Conference on Maintenance and Intelligent Asset Management (ICMIAM 2021) with the School of Engineering, Information Technology and Physical Sciences, Federation University Australia, Asset Management Council, Australia, and Manipal Academy of Higher Education, India.

The 3 tracks: (1) **Asset Management and Systems (AMS)**; (2) **Reliability, Availability & Maintainability (RAM) and Maintenance Management (MM)**; (3) **Safety Engineering & Analytics (SEA), and Security, Risk Management & Human Factors (SRHF)**.

Visit the website for registration: www.icmiam.com

Dec 12th to 15th, 2021
BLENDED MODE

NO SAFETY – KNOW PAIN, KNOW SAFETY – NO PAIN

CENTRE NEWS

- Centre launched their website where the activities of CoE-SEA can be found. The link of the website is: www.coesea.iitkgp.ac.in
- Centre launched the subject - “Safety Engineering & Management” for all the students of IIT Kharagpur for both Autumn and Spring semesters.
- The centre has completed 13-weeks of weekend talk in Safety Engineering, Management & Analytics and more talks are scheduled. [Click here to see the recorded weekend talk.](#)

UPCOMING EVENTS

- INTERNATIONAL CONFERENCE – ICMIAM** to be held in blended mode from 12th to 15th December 2021
- The centre along with Federation of Indian Chambers of Commerce & Industry (FICCI) is organising a 7-day **ONLINE SHORT-TERM CERTIFICATE COURSE** on ‘Prevention through Design (PtD) and Redesign (PtR)’ from 6th December 2021. For more details, please visit website: <http://www.coesea.iitkgp.ac.in/>
- CoE-SEA commence NPTEL courses on (1) Applied Multivariate Statistical Modelling (2) Safety & Risk Analytics from Spring. For more info visit website: <https://nptel.ac.in/noc/>

COE-SEA PROJECTS

- AI and virtual reality modelling and collaborative learning of risk and situational awareness in the socio-technical system under disruptions.
- Evaluation of DSDP awards.
- Evaluation of human factors and safety in submersible platform for acoustic characterization and evaluation.
- Centre of excellence in safety engineering and analytics.

RECENT RECRUITMENTS

CoE-SEA recruits to various posts:

- Principal Research Scientist (2)
- Project Manager (1)
- Software Engineer (1)
- JRF (4)

Joint faculty

- Prof J Maiti
- Prof O B Krishna
- Prof A Bhattacharjee
- Prof B C Meikap
- Prof Pulak Mishra
- Prof B B Mandal

Associated faculty

- Prof V K Tewari
- Prof P K Ray
- Prof Khanindra Pathak
- Prof Bhargav Maitra
- Prof Debashish Chakravarty
- Prof Biswajit Samanta
- Prof S K Chaturvedi
- Prof Kishor Goswami
- Prof Brajesh K Dubey
- Prof Debalay Chakrabarti
- Prof N K Goyal
- Prof M K Rao
- Prof Bhaskar Bhowmik
- Prof Rajendra Machavaram
- Prof S Roychowdhury
- Prof B G Menon
- Prof Abhishek K Rai

Faculty

FEEDBACK

Dear Prof Tewari,

Congratulations to you and Prof Maiti on the launch of SEANEWS. The mission and upcoming events sound interesting. Also it is aesthetically looking very good. Compliments and I look forward to interesting news portrayals in times to come.

Regards,

Raja Kumar, Director, IIT Bhubaneswar

Dear Prof. Maiti and team,

IIT-Kh has incepted CoE-SEA in a need time in India. Weekly lectures are very short and interesting.

This initiative of CoE-SEA bulletin will help a lot in setting objectives in the industries.

Best regards

Mukesh Vadgama
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Ex. Dy GM-Safety
Safety professional
Certified in Chemical process safety
ISO 45001 auditor



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