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अणुविद्या

HBNI NEWSLETTER

होमी भाभा राष्ट्रीय संस्थान

Homi Bhabha National Institute

(परमाणु ऊर्जा विभाग की एक सहायक संस्था और यूजीसी
अधिनियम 1956 की धारा 3 के तहत विश्वविद्यालय माना जाता हे)

(An aided institution of the Department of Atomic Energy and
a Deemed-to-be University under section 3 of the UGC Act. 1956)

Online course on Emerging Trends in Biophysics

An online course on "Emerging Trends in Biophysics" was conducted by HBNI during August to November 2021. The course was coordinated by Prof. Abhijit Chakraborty and Prof. Partha Saha, Saha Institute of Nuclear Physics. The course program was formally inaugurated by Prof. Jayant Udgaonkar, Director, IISER, Pune on August 12, 2021, who also delivered inaugural address. In his address, Prof. Udgaonkar emphasized on the importance of doing research in biophysics and remarked that the course curriculum of the online course will provide a strong foundation for students to conduct the research in biophysics.

The major topics covered under the course included multi-dimensional NMR, macromolecular crystallography, multiscale modelling and simulations of biological systems, bioinformatics applications, single molecule spectroscopy, membrane biophysics & membrane proteins, X-ray & neutron scattering applications, mass spectrometry& Omics, space bioengineering & synthetic biology, mechanobiophysics and nanobiophysics. Students from a variety of educational institutes across the country participated and benefitted from the course.

Advanced course on Corrosion Degradation in Light Water Reactors (A Joint course by HBNI and INSTN during December 6 to December 10, 2021)

HBNI had entered into a Memorandum of Understanding (MoU) with INSTN, France on September 18, 2018 initially for three years and this was renewed for another three years up to September, 2024. As a part of the collaboration, an advanced course on "Corrosion Degradation in Light Water Reactors (LWRs)" was organized at HBNI Central Office during December 6-10, 2021. The course was inaugurated by Prof. A.K. Bhaduri, DAE Homi Bhabha Chair Professor. In his inaugural address, Prof. Bhaduri emphasized the importance of the course for both the countries as both India and France have robust nuclear power programme. He reiterated the necessity to fundamentally understand the basic mechanism of corrosion degradation in nuclear reactors.

The target students for the course were Masters-PhD students and young professionals. The course imparted ample knowledge on corrosion degradation in materials specific to LWRs. The topics covered under the course included materials of construction for main components of LWRs, introduction to corrosion problems in LWRs, water chemistry, stress corrosion cracking of austenitic stainless steels and nickel based alloys, intergranular corrosion of nickel based alloys, corrosion problems in zirconium alloy cladding, flow accelerated corrosion in carbon steel pipelines, water chemistry and its control to mitigate corrosion problems. The course was covered in eighteen lectures of ninety minutes duration each which were delivered over five days. Twenty four participants attended the course in person and sixty participants attended the course online. An evaluation was done at the end of the course through Klaxoon platform.

The valedictory function of the course was held on December 10. 2021. In the valedictory session, Prof. P. R. Vasudeva Rao, Vice Chancellor, HBNI and Dr. Xavier Perrette, Head of Development and Partnership Department, INSTN, expressed their satisfaction regarding the outcome of these joint courses and were very happy about the feedback of participants and faculty members regarding the knowledge transfer and interaction. Prof. Rao also distributed certificates to the participants physically present on the occasion. Both the sides agreed to identify more such topics of high relevance for planning joint courses in the future.