India-based Neutrino Observatory (INO)

Tata Institute of Fundamental Research

Homi Bhabha Road, Colaba, Mumbai, INDIA, 400005

ASET Colloquium

Highlights of Indian heritage in ferrous metallurgy and the legendary wootz steel

The talk touches on the highlights of ferrous metallurgical developments from the Indian subcontinent which has a long legacy of the use of iron and steel. The fabled Delhi Iron Pillar stands testimony as to the earliest surviving massive forging in the world and was recently listed amongst the ASM international landmarks list, while forged iron beams were also used in the medieval Konarak temple. Southern India, in particular, was famed for legendary high-grade steel, known as ukku, or wootz, the Europeanised name, the manufacture of which was reported by late medieval European travellers by crucible processes and which was known to be widely traded to the Middle East to make the fabled Damascus blades. The talk points to how archaeometallurgical investigations of old slag heaps and production sites with materials characterization techniques, electron microscopy, and so on have helped to throw light on the manufacturing processes of ultra-high carbon steels that wootz represents and the metallurgical significance. The talk also touches on other significant vignettes of ferrous metallurgy such as the metal-cased rockets of the Tipu, forge-welded canon, and the intriguing swords of martial art forms such as Kalaripayattu.

Prof. Sharada Srinivasan (National Institute of Advanced Studies, Bengaluru)

Prof. Sharada Srinivasan National Institute of Advanced Studies (NIAS), Bengaluru works in the areas of archaeometallurgy, technical art history, archaeometry, and archaeological sciences. She is elected as International Honorary Member to the American Academy of Arts and Sciences in Archaeology and Anthropology in 2021. She received the Padhmashri, the fourth highest Indian civilian in Archaeology in 2019. Prof. Sharada Srinivasan is a Fellow of the Royal Asiatic Society of Great Britain and the World Academy of Art and Science. Her awards include the Dr. Kalpana Chawla Young Women Scientist Award for 2011, the UKIERI Standard Award (2009), the Indian Institute of Metals, Certificate of Excellence 2007 and Materials Research Society of India Medal 2006, the Malti B. Nagar Ethnoarchaeology Award (2005), the DST-SERC Young Scientist Fellowship (2001), the Forbes Fellowship, Smithsonian Institution (1998), the Homi Bhabha Fellowship (1996) the Flinders Petrie Medal 1989 from University of London, the Materials Research Society Graduate Student Award 1996, and the British Chevening Scholarship 1990. She earned her Ph.D. from the Institute of Archaeology, University College London (1996), and BTech in Engineering Physics from IIT Bombay (1987).

Date & Time: Monday, 6th August 2021, 4pm

YouTube live-stream link: https://youtu.be/wLRLWibK8GI