

KEY SCIENTIFIC AND TECHNOLOGICAL CONTRIBUTIONS OF BHARATIYA DHATU SHASTRA

- ❖ The process of extracting copper from copper ores and subsequently shaping it in the form of beads and tools.
- ❖ The science of refining high-quality Zinc using the distillation technique.
- ❖ The science and technology of producing superior Cu alloys (brasses and bronzes) and making suitable objects with them.
- ❖ Fabrication of intricately shaped objects (e.g., dancing girl, Nataraja statues, Bells etc.) by lost wax or investment casting process.
- ❖ The ancient ant digging technology to extract gold from the muskie region of Karnataka.
- ❖ Preparation of ASHTADHATU, an alloy made from eight elements having equiatomic compositions akin to the modern-day high entropy alloys.
- ❖ The science of producing high strength and high toughness steel (also referred to as wootz steel) by controlled diffusion of carbon.
- ❖ The process of making crucible steel (having a high carbon weight percentage) that has high hardness and wear resistance.
- ❖ The science of the making of corrosion resistant iron.
- ❖ Fabrication of precision instruments for surgical applications.
- ❖ Manufacturing of long pillars using forge weld technology.
- ❖ Development of purification processes to render several heavy-metals non-toxic and use them in medicinal applications.

Indian Institute of Technology Indore

IIT Indore, situated in Madhya Pradesh, is an institution of national significance founded in 2009 by the Indian government. IIT Indore's campus is located near Simrol, 25 kilometers from Indore, with over 512 acres of land amid rural habitats. The institution has established state-of-the-art infrastructure, including well-equipped labs, advanced instrumentation facilities, computer centers, etc. IIT Indore is ranked among the top 50 universities in Asia.

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धारा शृंखला सम्मेलन: भारतीय धातु शास्त्र

DHARA is an initiative of Ministry of Culture. The 'DHARA': An ode to Indian Knowledge System, a series of programs powered by lecture demonstrations, celebrating and showcasing India's contribution and achievements across diverse fields. In this series, IIT Indore is organizing the event on "Bharatiya Dhatu Shastra", to bring back the ancient Indian metallurgy to limelight.

NATIONAL CONFERENCE ON DHARA BHARATIYA DHATU SHASTRA

ये धीर्वाणो रथकाराः कर्मारो ये मनीषिणः ।
उपुस्तीन् पर्णं महयं त्वं सर्वान् कृण्वन्तितो जनां॥६॥
[ATHARVAVEDA, 3.5.6]

March 20-21, 2023

Dept. of Metallurgy Engineering and Materials Science
Indian Institute of Technology Indore



The iron pillar of Delhi
(375 – 413).



Seamless celestial globe
(1627)



A 10th century Chola dynasty
bronze sculpture of Shiva



Coin of Samudragupta
(c. 350 – 375)



Damascus steel
(16-17 Century)



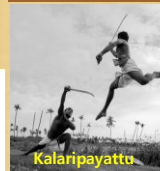
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RUNNING PROGRAM	
Day – 1 (March 20, 2023)	Venue: Gargi Seminar Hall
09:00 – 10:00	Registration
10:00 – 10:30	Inauguration
10:30 – 11:15	Plenary Talk by Prof. Indranil Manna Metallurgy: Past, Present and Future
11:15 – 11:30	Group Photo followed by High Tea
11:30 – 12:45	Panel Discussion 1: Non-ferrous metallurgy: Key learnings from ancestors and path forward
12:45 – 13:00	Open house
13:00 – 14:00	Lunch
14:00 – 14:50	Vimars: IIT Indore Public Lecture by Prof. Indranil Manna (Venue: Maitreyi Seminar Hall) Science-Engineering-Technology Synergy Needed for Technological Self Reliance
14:50 – 15:10	High Tea (Venue: Maitreyi Seminar Hall)
15:10 – 16:00	Keynote Talk by Prof. N. B. Ballal Insights into modern extractive metallurgists from the traditional iron making practices
16:00 – 16:15	Inauguration of Materials Advantage IIT Indore Chapter
16:15 – 17:45	Panel Discussion 2: Metallurgy of Iron and steel: Key learnings from ancestors and path forward
17:45 – 18:00	Open House
18:00 – 18:10	Tea
10:30 – 17:00	Demonstration of processing of metal tools and weapons used by the ancient Indian warriors/ Microstructure demonstration/ Aranmula kannadi making
18:10 – 20:00	Cultural Program (Kalaripayattu and Gangaur dance)
Day – 2 (March 21, 2023) Venue: Gargi Seminar Hall	
10:00 – 11:00	Panel Discussion 3: Metallurgy from pre-historic times – References in ancient Sanskrit texts, Findings of ASI
11:00 – 11:15	Open House
11:15 – 11:30	Tea break
11:30 – 12:20	Keynote Talk by Prof. Omkar Nath Mohanty On the Ferrous and Nonferrous metallurgy from the ancient times
12:20 – 13:00	Micrography contest
13:00 – 14:00	Lunch
14:00 – 15:15	Panel Discussion 4: Metallurgy in medicine, space, energy, and allied areas – Key learnings from ancestors and path forward
15:15 – 16:00	Thematic Competition and High Tea
10:30 – 17:00	Demonstration of processing of metal tools and weapons used by the ancient Indian warriors/ Microstructure demonstration/ Aranmula kannadi making
16:00 – 17:00	Cultural Program: कबीर संध्या -Shri Kaluram Baniya
17:00 – 18:00	Valedictory

CULTURAL PROGRAMS/ DEMONSTRATIONS



Kalaripayattu



Kaluram Baniya



Gangaur Dance



Aranmula Mirror