



Indian Institute of Technology Kanpur

INSTITUTE LECTURE SERIES

September 10, 2025 (Wednesday) | 6.00 pm | L - 17

Talk Title

Chenab Bridge - Where Civil Engineering Meets the Clouds

Speaker: Prof. Madhavi Latha Gali

Indian Institute of Science, Bangalore



Madhavi Latha Gali is a Professor of Civil Engineering and the Chair of the Centre for Sustainable Technologies at the Indian Institute of Science, Bangalore. She is a fellow of the Indian National Academy of Engineering. She was born to a farming couple in a small village called Yedugundlapadu in Andhra Pradesh. She was the first engineer from her village. She did her BTech from JNTU College of Engineering Kakinada, MTech from NIT Warangal and Ph.D. from IIT Madras. She joined IISc in 2003 as the first female faculty member of its more than 50-year-old Department of Civil Engineering. She is the primary geotechnical consultant to the world's highest railway bridge constructed across river Chenab in Jammu. She worked for seventeen years in this iconic national project, for its entire period of construction from 2005 to 2022. She received several awards including the Best Woman Researcher in Geotechnical Engineering award, Prof. S. K. Chatterjee outstanding researcher award and IISc Yashokirti award. She is listed in the top 75 women in STEAM of India.

Abstract

Constructing a railway bridge at 359 m above the Chenab riverbed was one of the toughest phases in fulfilling India's 100-year dream of running a train between Jammu and Srinagar. The major challenges involved were the height and dimensions of the bridge, steepness of slopes, harshness of terrain, heterogeneity and anisotropy of the rock mass with closely spaced joints, presence of the river below the bridge, adverse climatic conditions, very high wind speeds and seismicity of the location. The design of such a bridge had continuously evolved, as per the rock mass conditions encountered during the excavation and the changing design parameters. The overall structure of the bridge, its type and location were probably the only constant parameters in the design and the dimensions of piers, and their location, type and dimensions of the foundations and all other elements of the bridge were kept flexible in the design to suit the geological and geotechnical conditions of the site. The speaker will share the deeper insights gained through her seventeen years of involvement in planning, design and construction of the world's highest railway bridge on river Chenab.

All are cordially invited to attend

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