Research Project Title:

Analysis of Bridge with Hollow Core Stiffened FRP Deck Under Dynamic Loading Considering Fluid-structure and Soil-structure Interaction

Funding Agency:

Ansys Software Private Limited

PI: Prof. Chaitali Ray
Department of Civil Engineering

Co-PI: Dr. Sujit Kumar Dalui
Department of Civil Engineering

Co-PI: Dr. Saptarshi Kundu
Department of Civil Engineering

Outline of the project:

The objective of the research project is to analyse the components of a river bridge structure with fibre reinforced polymer (FRP) composite deck under dynamic loads generated due to consideration of thermal degradation, IRC class B traffic load and wave load on bridge pier ranging from low to high frequency. The research would involve the modelling of a glass fibre reinforced polymer (resin) composite bridge deck with hollow core stiffened configuration, steel girder, piers and foundation of a river bridge structure numerically using Ansys software. Experimental study will also be performed on a small scale model to validate the results obtained numerically. The effect of soil-structure interaction on the dynamic response of the river bridge structure will also be investigated.

Duration: 3 Years

Funding Amount: INR 33,85,000