National Institute of Technology Rourkela

Registration Seminar

Seminar Title	: Exploring the controlling factors towards decarbonisation of Indian cities
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Venue	: Seminar Room, Department of Planning and Architecture
Date and Time	: 06 Nov 2023 (10AM)
Abstract	: Urban areas associated with 71-76% of greenhouse gas (GHG) emissions causing climate change. Past studies have established correlations between the level of emission and the economic class of the household, population distribution and city level land use distribution patterns. Until now, strategies toward reducing GHG emissions highly relied on industry optimization, fuel switching, and alternative clean technologies. Carbon emission measurement is a challenge faced by the governments internationally. For addressing this, first we need to prepare a city-level carbon emission inventory as an essential step to develop and evaluate low-carbon strategies. The government of India has conducted district-level surveys on various socio-economical-infrastructural attributes, but there is no baseline dataset for direct energy use for all urban areas. Our study aims at estimating the city level Household Carbon Emissions (HCEs) from direct energy use in India and explore its variation among different population sizes and economic classes additionally, also investigating the determinants that are probably causes of variability in HCEs from direct energy use at city-level. Against the backdrop of intertwined interplay between urbanization and climate change, the study attempts to answer two pertinent research questions- First, whether urbanization is conducive for achieving carbon emission efficiency pertaining to population size and density? Second, what are the necessary and sufficient pre-conditions required to make urbanization conducive for achieving carbon emission efficiency by controlling population size and density? To answer these research questions, we need to test whether larger or denser cities are carbon emission efficient. The findings of this study shall provide new insight for policy towards accomplishment of Panchamrit Commitment at COP26 in 2030.