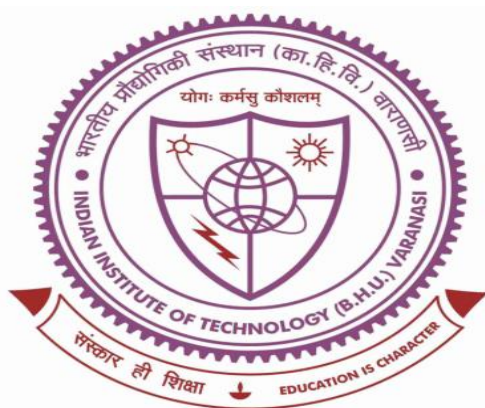


Green Synthesis of Copper-Based Biominerals and Rare-Earth Doped Luminescent Nanomaterial for Multifunctional Applications



**Thesis submitted in partial fulfillment
for the Award of Degree**

DOCTOR OF PHILOSOPHY

By

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