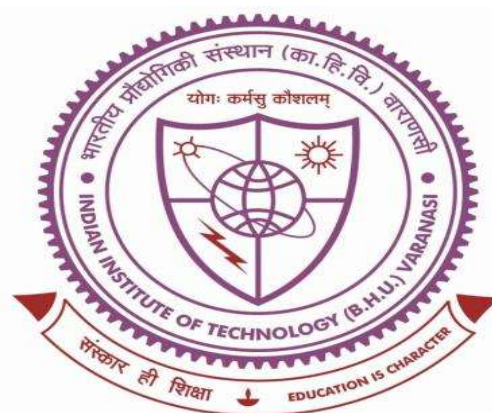


**Process Design and Optimization of Bioreactors
for the Treatment of Aromatic Hydrocarbon and
Dye using Isolated Bacterial Species**



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

DOCTOR OF PHILOSOPHY

By

RAVI KUMAR SONWANI

**DEPARTMENT OF CHEMICAL ENGINEERING &
TECHNOLOGY**

INDIAN INSTITUTE OF TECHNOLOGY

(BANARAS HINDU UNIVERSITY)

VARANASI-221005