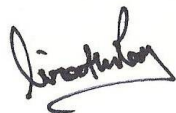


DECLARATION CERTIFICATE

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person or material which has been accepted for the award of any other degree or diploma of the University or another institute of higher learning, except where due acknowledgement has been made in the text.



Tirath Raj

Ph.D. Scholar

SAP ID (500027064)

University of Petroleum & Energy Studies

Village & P.O. -Bidholi

Via-Prem Nagar, Dehradun- 248007 &

DBT-IOC Centre for Advanced Bioenergy Research

Indian Oil Corporation Limited

Research & Development Centre

Sector 13, Faridabad 121007