## **DECLARATION**

I hereby declare that the research work embodied in this thesis has been carried out by me in the Department of Chemistry & Chemical Technology, Vidyasagar University, Midnapore-721 102, West Bengal, India, under the direct supervision of Professor Syed Sirajul Islam, Department of Chemistry & Chemical Technology, Vidyasagar University, Midnapore-721 102, West Bengal, India. I also affirm that this work is original and has not been submitted before for any other degree or diploma to this or any other University or Institution.

Manabendra Pattanayax

Date: 23 03 2019

(Manabendra Pattanayak)