

**DEVELOPMENT OF NEW GENERATION CATALYST FOR THE  
ISOMERIZATION OF LIGHTER ALKANES**

By  
**AMIT KUMAR**

**COLLEGE OF ENGINEERING STUDIES  
(DEPARTMENT OF CHEMISTRY)**

Submitted

**IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF  
THE DEGREE OF DOCTOR OF PHILOSOPHY**

**TO**



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES  
DEHRADUN  
SEPTEMBER 2017**

Under the guidance of

**Dr. R. P. BADONI (SUPERVISOR)**

Professor

College of Engineering Studies,  
Department of Chemical Engineering  
University of Petroleum & Energy Studies, Dehradun, India

&

**Dr. SHAILEY SINGHAL (CO-SUPERVISOR)**

Senior Associate Professor & Head  
College of Engineering Studies,  
Department of Chemical Engineering  
University of Petroleum & Energy Studies, Dehradun, India