

**CERTIFICATE**

The thesis entitled “DEVELOPMENT OF NEW GENERATION CATALYST FOR THE ISOMERIZATION OF LIGHT ALKANES”, being submitted by **Amit Kumar SAP ID (500022224)** to the University of Petroleum & Energy Studies for the award of the degree of Doctor of Philosophy is a bonafide research work carried out by him. He has worked under our supervision, and has fulfilled the requirements for the submission of this thesis, which has attained the standard required for a Ph.D. degree of the University. The content of the thesis, in full or parts have not been submitted to any other Institute or University for the award of any other degree or diploma.

*R.P. Badoni*  
25/9/2017

**(Dr. R. P. Badoni)**  
Professor  
Department of Chemical Engineering  
College of Engineering Studies  
University of Petroleum & Energy  
Studies, Dehradun, Uttarakhand 248007,  
India

*Su*  
25/9/17

**(Dr. Shailey Singhal)**  
Senior Associate Professor & Head  
Department of Chemistry  
College of Engineering Studies  
University of Petroleum & Energy  
Studies, Dehradun, Uttarakhand 248007,  
India