



Certificate

I hereby certify that the thesis entitled **“A study on effects of land use, land cover and spatial pattern of urban heat surface temperature in and around Udupi, Karnataka State using Remote Sensing and GIS Technology”** is an authentic record of the research work carried out by **Usha** for the award of the degree of Doctor of Philosophy in the Department of Physics, Manipal Institute of Technology, Manipal University. No part of the work reported here has been presented elsewhere for a degree or diploma. I also certify that she has fulfilled all the course requirements for the Ph D degree of Manipal University.

Dr. Vyasa Upadhyaya
Professor and Head
Department of Physics
Manipal Institute of Technology
Manipal University

Date: 26/08/2016
Place: Manipal



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We hereby certify that the thesis entitled “**A study on effects of land use, land cover and spatial pattern of urban heat surface temperature in and around Udupi, Karnataka State using Remote Sensing and GIS Technology**” is an authentic record of the research work carried out by **Ms. Usha** under my supervision for the award of the degree of Doctor of Philosophy in the Department of Physics, Manipal Institute of Technology, Manipal University. No part of the work reported here has been presented elsewhere for a degree or diploma. We also certify that she has fulfilled all the course requirements for the Ph D degree of Manipal University.

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