

# TEZPUR UNIVERSITY SCHOOL OF ENGNEERING DEPARTMENT OF ENERGY

### **Forwarding Certificate**

We hereby recommend that the thesis prepared under our supervision by Swrangsat Basumatary entitled "Design and Development of an in situ Temperature Controller for a solar water heating system" be accepted in partial fulfillment of the requirements for the degree of Master of Technology in Energy Technology.

P. K. Choudhury Assistant Professor Department of Energy Tezpur University

**Prof. D. Deka Head** Department of Energy Tezpur University

Prof. D. Bhattacharyya Dean School of Engineering Tezpur University

संकायाध्यक्ष, अभियांत्रिकी विद्यापीठ तेजबुर विश्वविद्यालय Dean, School of Engineering Tezpur University



## TEZPUR UNIVERSITY SCHOOL OF ENGNEERING DEPARTMENT OF ENERGY

### **Certificate of Approval**

The foregoing thesis by Swrangsat Basumatary (**Registration Number ENE13019**) is hereby approved as a creditable study carried out and presented in a manner satisfactory to warrant its acceptance as a pre-requisite to the degree for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve only for the purpose for which it is submitted.

Committee On Final Examination for Evaluation of thesis

.....



### DECLARATION

I, Swrangsat Basumatary, hereby declare that this thesis entitled "*Design and development of an in situ Temperature Controller for a solar water heating system*" is submitted to the Department of Energy, Tezpur University, Tezpur, Assam, India for acceptance to award the degree of the Master of Technology in Energy Technology is prepared by me and the same has not been submitted to any other institution.

Date: 02/06/15 Place: Tezpur

Surrangsat Basumatary)

Department of Energy Roll number: ENE13019

#### ACKNOWLEDGEMENT

Perseverance, inspiration and motivation have always played a key role in any venture. Irrespective of the amount of hard work and determination it is inevitable to come across hurdles to grasp the wide spectrum of topics and find a suitable tool to corelate all the subjects to yield a desired result. At this point the able guidance of a teacher provides the means to accomplish the inconceivable. Hence, I take this opportunity to express my deep and heartfelt sense of gratitude and thank my project supervisor Mr. Pradyumna Kumar Choudhury, Assistant Professor, Department of Energy, Tezpur University, Assam, for his invaluable guidance, innovative suggestions, encouragement and never ceasing faith and patience with which he handled through the whole project work.

I am also grateful to Prof. D. Deka, Mr. S. Mahapatra, Prof. D.C. Baruah, Dr. R. Kataki, Dr. P. Kalita, Dr. N Sarmah and Dr. B.K. Kakati, Department of Energy, Tezpur University, Assam, for their official initiatives and valuable suggestions during my project period. I would also like to thank Biswajit Gogoi for his encouragement during my project work.

I would also like to thank Mr Tapanjit Borah, Mr Troilokya Lahon and all the staff members of Department of Energy who helped me directly or indirectly in pursuit of my project work.

I would like to thank my friends Longchapkiri Phangcho, Arnab Jyoti Konwar, Sanjib Baishya, Avinash Singh Patel, Dudul Das and Sukanya Buragohain for the helping hand they have offered in various stages of my project work.

I would like to thank all of my batch mates, senior Phd scholars and juniors of Department of Energy, Tezpur University for their kind cooperation and help.

Last but not the least I place a deep sense of gratitude to my parents, all mighty and friends who have been constant source of inspiration throughout this period.