

IIT Bombay Team wins ONGC Solar Chulha Design Challenge



April 24, 2018: The team from IIT Bombay under the mentorship of Prof. Chetan Singh Solanki secured first position at the national level ONGC Solar Chulha Design Challenge. The team was awarded prize money of Rs. 10 Lacs along with proposed financial support for fabrication of 1000 units which will be initially procured for demonstration in different regions.

ONGC, under the Ministry of Petroleum and Natural gas, GOI held a challenge named "Sunlight based Chulha Design, Innovate and Create" to build up a moderate and adaptable sun-oriented controlled stove framework. The application process started in Dec 2017 and an overwhelming response was received with more than 1500 entries during this period. Based on the abstract submitted by the participants, and after two rounds of screening and discussion, 20 teams were shortlisted by the expert panel chaired by Dr. Anil

Kakodkar, former Chairman, Atomic Energy Commission and the participants were advised to proceed with the development of the prototype/model by the panel during their 1st meeting on 6th January 2018. These teams were then invited to present their proposals to the Expert Panel during its 2nd Meeting on 24 February 2018 at Mumbai. Subsequently, 6 finalists with proposals from both Solar Photovoltaic and Solar Thermal based systems were selected.

The 6 shortlisted teams were then invited to New Delhi to demonstrate live cooking on their solar chulhas. The teams demonstrated cooking twice: once during the day and then after sunset on 23rd April, 2018 to the expert committee members and ONGC officials, including CMD.

On Day 2, 24th April 2018, live cooking demonstration was given to Hon'ble Minister of Petroleum and Natural Gas, Shri Dharmendra Pradhan. After interacting with each team, the Minister witnessed live cooking and also tasted the food cooked on the solar chulhas. After thorough evaluation on the parameters such as technology used, readiness of solutions, ability to cook all types of Indian cuisine dishes, adaptability in kitchen, time required for cooking, etc. the team from IIT Bombay lead by Prof. Chetan S. Solanki secured the first position and was awarded with prize money of Rs. 10 Lacs.



The prize-winning solar chulha will be installed in ONGC premises for regular use. In order to promote these solar chulhas, ONGC will also procure 1000 units for demonstration in different regions. The financial support will be provided from the start up fund set up by ONGC.

The Solar Intelligent Cooking with Storage (SIX cook-stove) of IIT Bombay is designed to provide 3 units of electricity every day which is sufficient for cooking 3 meals daily for a 5 member family. The cook-stove has two induction cook-tops a back-up time of 1 day from batteries. It can be used for all cooking processes like boiling, steaming, frying, griddling, etc. Since the solar panel produces DC power and battery stores energy in DC form, the cook stove is designed to work on 48V DC, which is also safe limits to operate and does not have any operational hazards. The outer body design and control knobs are aesthetically designed similar to a conventional glass top stove, which makes it easily adaptable for users. Also, the induction heating-based design is energy efficient.

Speaking after the event, Prof. Solanki said, *“This will be the dawn of solar PV based cooking. The SIX cook-stove has the potential to provide modular, safe and clean cooking solution to both an urban as well as rural households and will change the scenario of solar based cooking.”*



