

**Dr Nitin Banker, Assistant Professor , Department of Mechanical Engineering receives the DST Grant under Fast Track Young Scientist Scheme**



Dr Nitin Banker, Assistant Professor, Department of Mechanical Engineering, School of Engineering has received DST grant for his project on Design and Development of Refrigerator using a Phase Change Material based Heat Exchanger. With fast growing population and industrialization, the consumption rate of electricity (energy) has grown steeply. There is a significant share of electricity consumption in residential sector for domestic appliances. One of the reports shows that in France, refrigerators consume about 26% of the residential electricity demand. Another study, shows that there are about 0.2 billion refrigerators in China and they consume 30 to 40% of the residential electricity demand approximately (2011). Worldwide it has been estimated that there is at least one household refrigerator for every six people on Earth, which corresponds to approximately 6% of the total electrical energy produced (2011).

Thus, the above scenario motivated to look for the options to reduce the energy consumption in refrigerator. To achieve the goal many researchers are working on to improve the performance of the household refrigerator. One of the methods is integration of a Phase change material (PCM) into the refrigerator and it is taken into consideration for the proposed work.

Talking about his research, Dr Banker says, “The objectives of the proposed research are to design a based heat exchanger and integrate the newly design heat exchanger into the refrigerator. This in turn will lead to conservation of electricity and also act as a check on the emission of greenhouse gases from domestic sources.”