

Design and Development of a Solar Cooling Demonstration Unit

The solar cooling demonstration unit will be based on an active type solar cooling system. Desiccant cooling system and advanced absorption system will be used in the design. High temperature liquid collector will also be used.

Absorption air conditioning: Heat from solar collector separates superheated refrigerant in a generator which receives the pressurized refrigerant from an absorber.

Desiccant system: Desiccant is a moisture absorbing material. It is normally located on a wheel that slowly rotates into the air stream that is supplied to the conditioned space. As the air passes through the desiccant, moisture is removed from the air, dropping the humidity level in the air stream to the point that an evaporative cooler can then cool the air. The desiccant is then dried by the heat generated by the solar collector as it rotates out of the air stream.