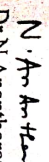



EN814 SOLAR THERMAL ENERGY STORAGE


Importance of Energy storage- Applications- Thermal Energy Storage- Mechanical Energy Storage- Electrical and Magnetic Energy Storage- Chemical Energy Storage.
Sensible Heat Storage (SHS) - Basics- SHS and Types of Load- Sensible Heat Storage Media- Well mixed liquid storage- Stratified Liquid storage- Packed bed storage system.
Latent Heat Storage- Basics- Phase Change Materials- Selection of PCM- Heat transfer in PCM- Practical aspects of PCM (Encapsulation of PCM, Compatibility and Heat Transfer problems in PCM systems).
Long term Energy storage- Solar Ponds (Classification, Creation & Maintenance, Performance Analysis, Applications)- Energy storage in Aquifers- Energy storage in the ground- Energy storage in large underground tank.
Energy storage for Passive solar architecture- Solar thermal energy storage for solar cookers- Solar cookers using Sensible heat thermal energy storage and Latent heat thermal energy storage- Standard procedures for testing of Thermal Energy storage systems.
Thermochemical Energy storage- Description of Basic cycles- Storage materials: Composite materials, working pairs for liquid absorption, solid adsorption and chemical reactions- Progress in liquid absorption cycles- Advanced concepts of adsorption reactors- Typical prototypes and projects


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- [4] N. Yu, R.Z. Wang, L.W. Wang, Sorption thermal storage for solar energy- Review, Progress in Energy and Combustion Science, Volume-39, Page 489-514, 2013.


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