



### Abstract

Solar energy is intermittent as there is no sun at night. Thermal energy storage (TES) is a cost-efficient solution to store solar energy during day and reuse it after sunset. Several thousand tons of materials are required to store heat in concentrated solar power plants. Nitrate molten salts are the conventional TES materials but are limited to 600 C. To operate at higher temperature in the range of 700 to 1000 C and achieve higher sun-to-electricity efficiency, ceramics are one of the few options. However, conventional ceramic materials such as alumina or silicon carbide are too expensive and kill the viability of the system. Initiated in France, one approach consist of recycling industrial solid waste into value-added ceramic products. Ceramic Materials Limited is a startup company born out of the unique and innovative environment of the Masdar Institute. The objective of this startup company is to commercialized recycled ceramic products globally. Recently launched, ReThink Ceramic - Flora is the world's first commercial 100% recycled high-temperature TES ceramic material designed in Masdar City and manufactured in France.



### Speaker's Bio

Dr. Nicolas Calvet has been an Assistant Professor at Khalifa University of Science and Technology in Abu Dhabi, UAE since 2013. He is the founder and chair of the Masdar Institute Solar Platform, the first R&D platform in the UAE dedicated to concentrated solar power (CSP) and thermal energy storage (TES). Finally, he is representing the UAE at the SolarPAÇES Executive Committee, a technology collaborative program from the International Energy Agency (IEA).

