

Materials for Solar Energy Conversion

	Organiser	Institution	Contact
	Susan Schorr	Helmholtz Centre Berlin for Materials and Energy, Germany	susan.schorr@helmholtz-berlin.de
	Martin Schmücker	Deutsches Zentrum für Luft- und Raumfahrt (DLR) Institut für Werkstoff-Forschung, Keramische Struktur- und Funktionswerkstoffe, Germany	martin.schmuecker@dlr.de
	Sergui Levenco	Helmholtz Centre Berlin for Materials and Energy, Germany	sergiu.levenco@helmholtz-berlin.de
	Ivan Davoli	University Roma, Italy	ivan.davoli@roma2.infn.it
E1.II	<p>Summary</p> <p>Solar energy is a most important source for future electrical power supply. Worldwide electricity production by photovoltaic is more than 100 GW. Novel thin film technologies have a high potential reducing electricity production costs in future. Concentrated solar power is another promising approach to produce electricity or synthetic fuels by high-temperature processes. This symposium is devoted to materials for solar energy conversion in a broader sense.</p> <ul style="list-style-type: none"> ○ absorber materials (compound semiconductors like chalcopyrites, kesterites, CdTe; light absorbing performance, selective coatings, robustness against thermal cycling, interactions with environmental effects such as airborne mineral dust, vapor, salt) ○ crystalline silicon / nanocrystalline silicon ○ dyes and organic semiconductors ○ nano-composit materials ○ interfaces and interface design – a challenge in photovoltaic devices ○ concepts for 3rd generation solar cells (for instance tandem structures, quantum dot and plasmonic concepts, intermediate band gap materials) ○ mirrors and mirror coatings (reflectivity, stability against pitting and delamination, self-cleaning surfaces, life time prediction considering temperature swings, UV irradiation, rain, dust) ○ heat transfer media (oil, salt, particles) with improved stability and wider operating temperatures; reactions with heat transfer media conducting components ○ novel materials for thermal energy storage systems (phase change materials, materials for thermochemical storage systems) ○ materials for (solar)thermochemical processes to produce H₂, CO or synthetic fuels (Metal Oxide-Based Redox Materials, Sulfur-Based Cycles, Cu/CuCl Cycle etc.). ○ materials for highly concentrated Solar Photovoltaics (Optical elements, Ultra-high concentrator solar cells) <p>Researchers are encouraged to submit their reports also on advanced new developments in the field.</p> <p>Within the poster session 2 posters will be awarded with a prize of the Materials Science and Engineering Expert Committee (MatSEEC) of ESF.</p>		