

Kick-Off Meeting

of the ECMI Special Interest Group
SUSTAINABLE ENERGY

Nanostructures for Photovoltaics and Energy Storage

December 8-9, 2014

Technical University Berlin
Institute of Mathematics
Room: MA 415 (Mathematics Building, 4th Floor)
Strasse des 17. Juni 136
10623 Berlin

Organizers:

Annegret Glitzky (WIAS)
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Andreas Münch (University of Oxford)
Barbara Wagner (Technical University Berlin/WIAS)

Supported by

ECMath PVcomB EPSRC ECMI TU Berlin WIAS

Programme

Monday 8.12.	11.00	Reception with Coffee & Snack
	11.50	Welcome
	12.00-12.30	Nanoarchitectures for solar energy conversion , Silke Christiansen (HZB)
	12.30-13.00	Liquid phase crystallised silicon on glass: Perspectives and challenges , Bernd Rech(HZB)
	13.00-13.30	Structure property relationships in thin film solar cells studied by electron microscopy , Daniel Abou-Ras(HZB)
	13.30-14.00	Silicon nanowires etched into crystalline Si thin films for solar cells and Li ion batteries , Fritz Falk (IPHT-Jena)
	14.00-15.00	Lunch
	15.00-15.30	Silicon for lithium-ion batteries: Probing anodic nanostructures through mathematical modelling , Jeevan Chakraborty (Univ. Oxford), Colin Please (Univ. Oxford)
	15.30-15.45	Efficient optical simulation of complex nanostructured solar cells with a reduced basis method , Martin Hammerschmidt (ZIB)
	15.45-16.00	Plasmonic nanoantennas for tailoring electromagnetic field properties , Sven Burger (ZIB)
	16.00-16.30	Direct hydrogen generation by thin film silicon solar cells: Opportunities and challenges , Bernd Stannowski (PVcomB)
	16.30-17.00	Nanostructured thermoelectric materials for energy harvesting , Iris Nandhakumar (U. Southampton)
	17.00-17.30	Coffee
	17.30-18.00	Charge transfer states in molecular blends: The physics behind the open circuit voltage of organic photovoltaic devices , Reinhard Scholz (IAAP-Dresden)
	18.00-18.30	Electrothermal modeling of large-area OLEDs , Axel Fischer (IAAP-Dresden), Matthias Liero (WIAS)
	18.30-18.45	On modifications of the Scharfetter-Gummel scheme for drift-diffusion equations with Fermi-like distribution functions , Duy Hai Doan (WIAS)
19.00	Dinner	
Tuesday, 9.12.	09.00	Coffee
	09:30-10.00	Growth of chalcogenide semiconductor thin films studied by real-time x-ray diffraction , Humberto Rodrigues Alvares, Rutger Schlatmann (PVcomB)
	10.00-10.30	Investigating micro and nano-structures in polymer and perovskite organic solar cells , Alan Dunbar (Univ. Sheffield)
	10.30-11.00	Kinetics of free charges, excitons and sub-gap states in the organic-inorganic perovskites , Victor Burlakov (Univ. Oxford)
	11.00-11.30	Coffee
	11.30-12.00	On a simplified Poisson-Boltzmann model for batteries: asymptotic expansion and homogenisation , Klemens Fellner (Univ. Graz)
	12.00-12.30	Physics-based lithium-ion battery modelling using orthogonal collocation for advanced battery management systems , Adrien Bizeray (Univ. Oxford)
	12.30-13.00	Diffusion in porous media , Maria Bruna (Univ. Oxford)
	13.00-13.30	A numerical approach to multicomponent transport and diffusion derived from semiconductor device simulation methods , Jürgen Fuhrmann (WIAS)
	13.30-14.30	Lunch
	14.30-16.00	Open Discussion with Coffee & Snack
	16.00	Closing remarks.