



## News, September 2015

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### Joint project "Next generation photovoltaics" Prof. Christophe Ballif

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#### Events

Oral presentation of P. Loeper, J. Werner, S.-J. Moon, S. Martin de Nicolas, J. Bailat, S. Nicolay, J.-H. Yum, S. De Wolf, B. Niesen, and C. Ballif: "Integration of Organic-Inorganic Perovskite Solar Cells in Si-Based Tandem Solar Cells", MRS Spring Meeting 2015, San Francisco, April 2015

Poster presentation of B. Bissig: "Potassium Fluoride Post-Deposition Treatment as a Possible Route to Improve the Performance of Cu(In,Ga)Se<sub>2</sub> Solar Cells with Increased Cu Content", MRS Spring Meeting & Exhibit, San Francisco, April 2015

Lecture by E. Avancini: "CIGS thin film solar cells: material challenges for record efficiencies and industrial scale-up", Frontiers of Energy Research, ETH Zurich, May 12, 2015

Plenary presentation of C. Ballif, J. Werner, P. Löper, A. Walter, M. Filipic, S.-J. Moon, C.-H. Weng, J.-H. Yum, S. Nicolay, J. Bailat, M. Topic, M. Morales Masis, R. Peibst, R. Brendel, S. De Wolf, and B. Niesen: "Towards Ultra-High Efficient Photovoltaics with Perovskite/crystalline Silicon Tandem Devices, EU PVSEC, Hamburg, Germany, September 2015

Presentation of S.-J. Moon, L. Löfgren, D. Sacchetto, M. Benkhaira, J. Bailat, S. Nicolay, C. Ballif "Organometallic Halide Perovskite Solar Modules by Laser Patterning Technology", EUPVSEC 2015, Hamburg, September 2015.

Oral presentation of Th. Feurer: "Low Bandgap Cu(In,Ga)Se<sub>2</sub> Solar Cells Applied in Tandem Devices with Perovskite Top Cells", EUPVSEC 2015, Hamburg, September 16, 2015

Poster presentation of J. Werner, C.-H. Weng, A. Walter, L. Fesquet, P. Löper, S. De Wolf, B. Niesen, and C. Ballif: "Perovskite/crystalline silicon tandem solar cells: How to upgrade a silicon solar cell!", PSCO-2015, Lausanne, Switzerland, September 2015

Various talks and presentations of Prof. M. Graetzel in Switzerland and abroad.

#### Publications

Kranz L., Abate A., Feurer T., Fu F., Avancini E., Löckinger J., Reinhard P., Zakeeruddin S.M., Graetzel M., Buecheler S., and Tiwari A. N.: J. High-Efficiency Polycrystalline Thin Film Tandem Solar Cells. *Phys. Chem. Lett.* 2015, 6, 2676–2681

Prochowicz D., Franckevičius M., Cieślak A. M., Zakeeruddin S. M., Graetzel M. and Lewiński J.: Mechanosynthesis of the Hybrid Perovskite CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub>: Characterization and the Corresponding Solar Cell Efficiency. *Journal of Materials Chemistry A*, 2015 accepted, (DOI: 10.1039/C5TA04904K)

Correa Baena J. P., Steier L., Tress W., Saliba M., Neutzner S., Matsui T., Giordano F., Jacobsson T. J., Srimath Kandada A. J., Zakeeruddin S. M., Petrozza A., Abate A., Nazeeruddin M. N., Graetzel M. and Hagfeldt A.: Highly efficient planar perovskite solar cells through band alignment Q2 engineering. *Energy Environ. Sci.*, 2015, accepted, (DOI: 10.1039/c5ee02608c)

Giordano F., Abate A., Correa Baena J. P., Saliba M., Matsui T., Zakeeruddin S. M., Nazeeruddin M. K., Hagfeldt A. and Graetzel M.: Enhanced Electronic Properties in Mesoporous TiO<sub>2</sub> via Lithium Doping for High Efficiency Perovskite Solar Cells. *Nature communication*, 2015, submitted

## **Varia**

Master Thesis, recently defended at the ETH Zurich, by Master Student Alex Claville, titled “Surface Passivation for CIGS”. This master work includes a screening of the possible materials for passivation strategies and their investigation by advanced characterization methods such as Time-Resolved Photoluminescence (TRPL).

Co-organization of scientific conference: Lifetime and Reliability Issues in PV, Manno, September 11 – 12, 2015.