

Press release**Universität Bayreuth****Christian Wißler**

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<http://idw-online.de/en/news806867>Cooperation agreements, Research projects
Chemistry, Energy, Materials sciences, Physics / astronomy
transregional, national**Printed organic solar cells: Research team from the University of Bayreuth involved in new DFG research group**

The German Research Foundation (DFG) will fund a research group on printed organic solar cells over the next four years. Scientists from a total of seven universities are participating in this group, which is led by the TU Chemnitz. Prof. Dr. Eva M. Herzig, Junior Professor for Dynamics and Structure Formation at the University of Bayreuth, and her team are investigating the active layers of organic solar cells. Their focus is on how the conversion of sunlight into free charge carriers is influenced by the arrangement of the molecules.

Organic solar cells dominantly consist of carbon based materials. They are light weight and flexible and can be produced with low energy consumption. Despite intensive research worldwide, it has not yet been possible to produce large-area organic solar cells that combine both properties: high stability, i.e. slow enough aging with high efficiency in converting sunlight into electrical energy. The new inter-university DFG research group has therefore set itself the goal of identifying and controlling those factors that are decisive for the efficiency and stability of printed organic solar cells. Together, all researchers involved will work towards the goal of printing high-performance and durable organic solar cells at low cost on an industrial scale.

Prof. Dr. Eva M. Herzig's team at the University of Bayreuth specializes in researching the active layer of organic solar cells. In this layer, sunlight is converted into free charge carriers – that is, electrons and holes. The spatial distribution of the molecules plays a central role in this process. "In Bayreuth, we want to investigate how the arrangement of the molecules in the active layer can be influenced when organic solar cells are printed. Another central question is how stable this targeted nanostructure will be in the final printed solar cell," Herzig explains. In order to be able to clarify these questions, her research group has a state-of-the-art X-ray instrument at its disposal. The latest technologies on campus also make it possible to observe and systematically influence the drying of very thin organic layers. In addition, experiments are planned at major research facilities in Germany and abroad, for example at the German Electron Synchrotron (DESY) in Hamburg or the Advanced Light Source (ALS) in Berkeley/USA. With its research results, the Herzig Group within the DFG research group will contribute to understanding and further developing organic solar cells from a fundamental point of view.

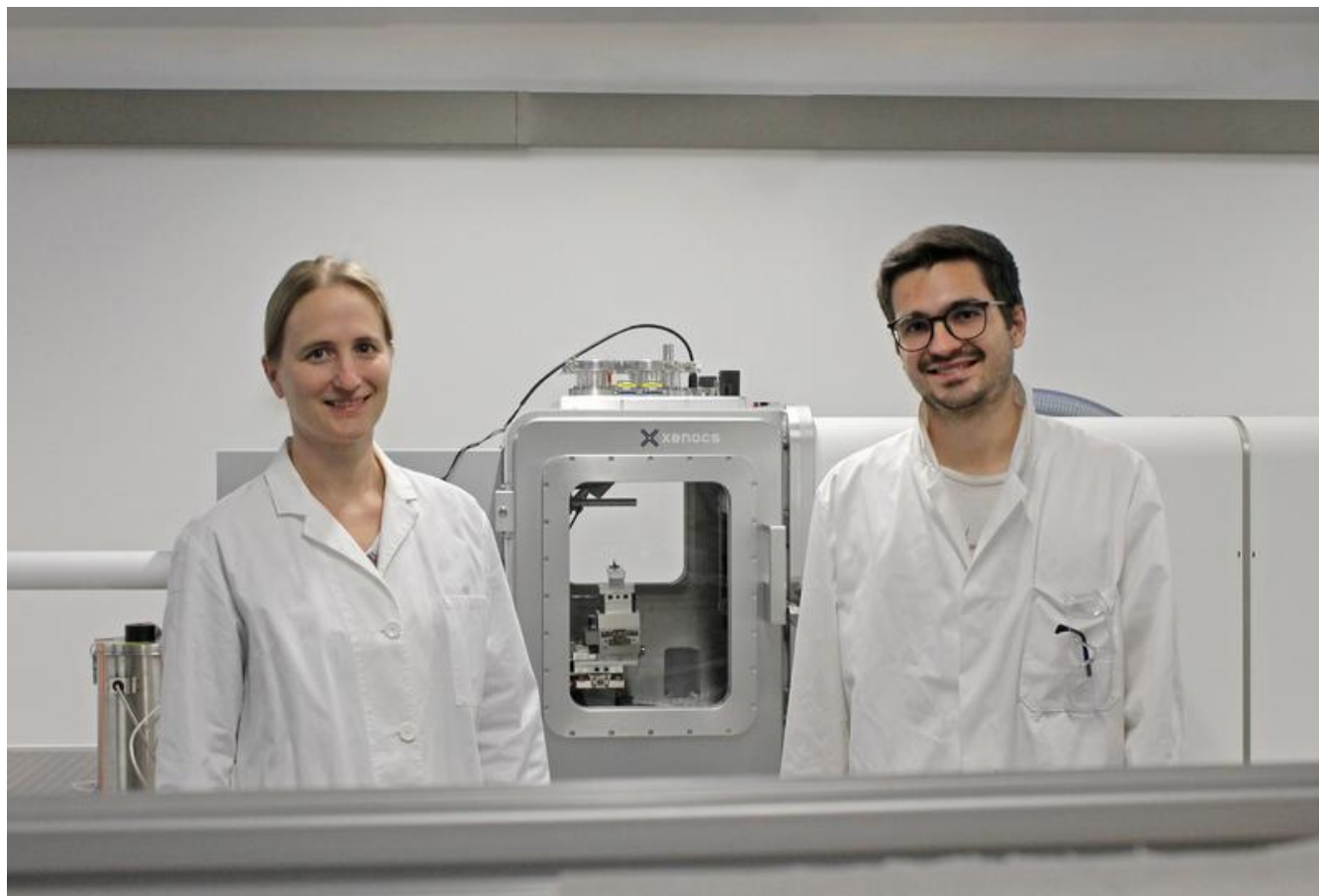
The new DFG research group entitled "Printed & Stable Organic Photovoltaics with Non-Fullerene Acceptors" is headed by Prof. Dr. Carsten Deibel at the TU Chemnitz, which is involved in the joint project with a total of four specialist groups. Other interdisciplinary research teams – in addition to Prof. Dr. Eva M. Herzig's group in Bayreuth – are located at TU Dresden, FAU Erlangen-Nuremberg, University of Heidelberg, University of Potsdam, and Durham University in the UK.

contact for scientific information:

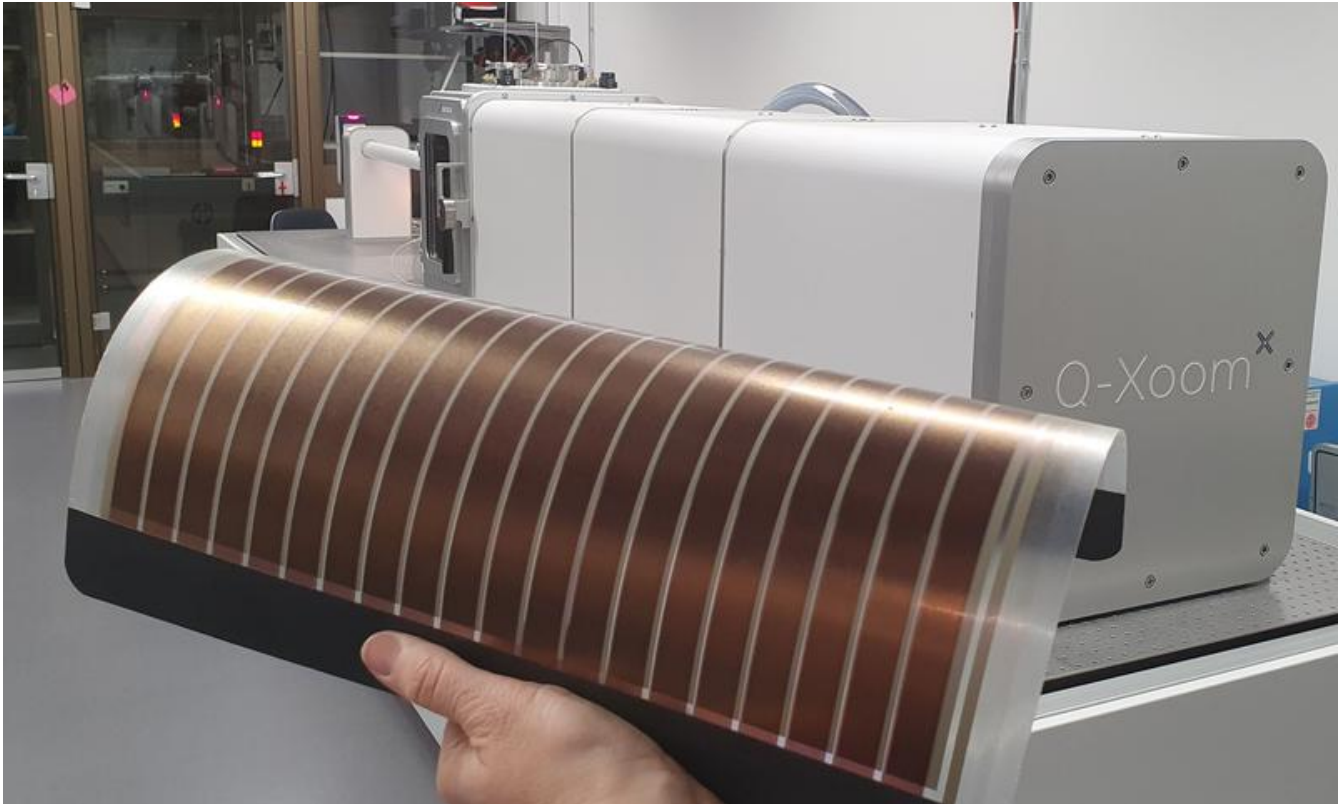
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Prof. Dr. Eva M. Herzig (left) and Fabian Eller (right) in the Herzig Group's X-ray laboratory at the University of Bayreuth.
Photo: UBT / Christian Wißler



Printed organic solar cells.
Photo: Eva M. Herzig.