

Distinguished Lectures at HZB

Prof. Thomas Krauss

York University, UK

**Photovoltaics & Photonic
nanostructures**

25.11.2015

HZB Wilhelm-Conrad-Röntgen-Campus -
Lecture Hall 14.51, Albert-Einstein-Straße
15, 12489 Berlin

11:00 o'clock

Photovoltaics & Photonic nanostructures

Solar power has the highest potential among all renewable energy sources, it is clean and practically inexhaustible. Despite the already very high performance of silicon solar cells with 25% efficiency and a low cost of around 0.5\$/Wp, a lot of research is yet required in order to realise the vision of a solar-powered society. Can we reduce module cost by integrating solar cells into buildings? Can we improve efficiency without increasing cost, by adding low-cost materials such as perovskites? What role can photonic nanostructures play to help control the flow of light? One of the main problems of photovoltaics is that the sun does not shine much in winter or at night. Can nanophotonics contribute to the storage problem? I will discuss these and related questions with the goal of informing future research into nanostructures for photovoltaics.

CV

TF Krauss is a full professor at the University of York, UK, where he leads the Photonics research group and the cleanroom facility in the



York Nanocentre. He has published 280 refereed journal articles, with 12000 lifetime citations and an “h” factor of 59, as well as 5 patents. His expertise is in the design and fabrication of photonic crystals and photonic nanostructures where he has made pivotal contributions that

turned photonic crystals from an academic curiosity into the ubiquitous concept in Photonics that they are today. Prof Krauss is a Fellow of the Institute of Physics, the Royal Society of Edinburgh and the Optical Society. In 2015, he was awarded a Royal Society Wolfson Merit Award. At York, he was recently appointed Strategy Champion “Technologies for the Future” with the remit to enhance technology research university-wide.