Elektrotechnisches Kolloquium

der Bergischen Universität Wuppertal

Die Fakultät für Elektrotechnik, Informationstechnik und Medientechnik lädt zur Teilnahme an folgender Vortragsveranstaltung mit anschließender Diskussion ein:

Es spricht

M. Sc. Tim Becker

Lehrstuhl für Elektronische Bauelemente
Prof. Dr.Thomas Riedl

über das Thema

Charge Extraction and Recombination Layers for Organic and Hybrid Multi-Junction Solar Cells

Inhalt:

Apart from materials innovation, the optimization of device architecture plays a crucial role in achieving high power conversion efficiencies (PCE) of Organic Solar Cells (OSCs). Interfaces between different organic layers, electrodes, and interfacial layers all influence the overall device performance. Moreover, device architecture has a crucial influence on device stability, tackling questions regarding the stringent lifetime requirements to be met for real-world applications.

In the field of organic photovoltaics (OPVs), multi-junction solar cells present a paradigm shift from single-junction devices by enabling the utilization of a broader portion of the solar spectrum. This design facilitates a drastic increase in device efficiency, but bares new challenges with regards to device architecture. The efficient extraction of photo-generated charges from multiple sub-cells is contingent on the establishment of balanced charge carrier generation, transport, and recombination. This is where recombination or interconnection layers (ICLs) play a pivotal role.

Within the talk, multiple approaches for efficient and widely applicable recombination layers will be presented. Utilizing combinations of robust deposition methods, novel approaches of ICLs combining only metal oxides will be demonstrated to facilitate multi-junction device architectures comprising either two organic sub-cells or even a highly efficient combination of organic and halide perovskite sub-cells.

T e r m i n : **15.11.2023, 14 Uhr**

O r t : https://uni-wuppertal.zoom.us/j/63459685928?pwd=THlrWjZRY0ViNU9tdkYxU1o5YmFvQT09
Meeting-ID: 634 5968 5928 **Passwort**: jUEgB9uF