



Donnerstag, 04.07.2024, 15:30 Uhr

Ort: Reichenhainer Str. 90;
Zentrales Hörsaal- und Seminargebäude,
Raum C10.013

Jun.-Prof. Dr. Simon Kahmann

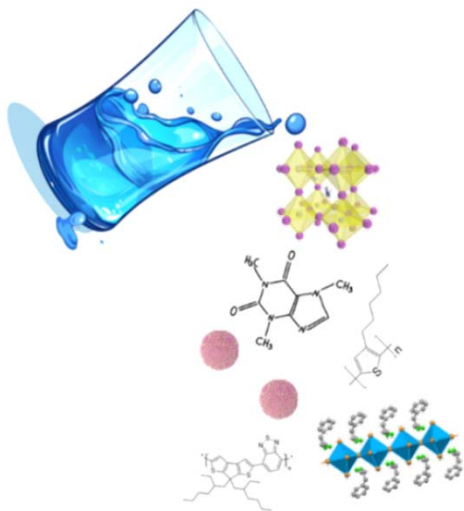
Juniorprofessur Experimentelle Halbleiterphysik
TU Chemnitz

‘Pour me another one!’ – solution-processed semiconductors under the spotlight

Semiconductors are all arounds. They are the hearts of our laptops and smartphones, they sense acceleration or temperature, they create electrical energy in solar cells, or they emit light in lasers and LEDs.

These applications share their being based on highly pure and highly regular inorganic materials, most prominently on silicon. To make silicon work, we must first purify it and usually have to cast it as perfectly ordered single crystal. This requires huge amounts of energy to first melt it and then to then cast it into a faultless crystal. Alternatives, such as GaAs or GaN equally play important roles, but rely on precise growth in ultrahigh vacuum to create highly crystalline materials.

In my talk, I shall talk about different semiconductors. My research addresses materials that can be processed from solution. They rarely require growth into single crystals, but nicely perform as thin films processed by drop, spin, or blade-casting.



Taking us on a tour from Zwickau through Europe to Chemnitz I shall highlight some of the main materials that I have worked on – how they are different and what they have in common – and I shall demonstrate their potential for applications in optoelectronics, chiefly solar cells and light-emitting diodes.

Focusing on optical spectroscopy techniques, I shall demonstrate the depth of knowledge we can acquire when shooting things with lasers and how we learn even more if we look very closely – for example with a microscope.

Nanosized matter and the interaction of organic and inorganic building blocks are key to enable new functionalities in novel semiconductors, and I shall present my vision for using these effects in my research as Juniorprofessor for Experimental Semiconductor Physics at TUC.

Alle Zuhörer sind ab 15:15 Uhr zum Kaffee vor dem Hörsaal eingeladen.

Informationen zum Vortrag erteilt:
Jun.-Prof. Dr. Simon Kahmann, Tel. 0371 531 32253

