

# On-line SPICE-SPIN+X Seminars



**Wednesday, 17th March 2021, 15:00 (German Time)**

The seminar will be via Zoom ([Meeting ID: 886 3885 2232](#)) and live streamed in the SPICE YouTube Channel.



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## **CHARGE AND SPIN TRANSPORT PHYSICS OF ORGANIC SEMICONDUCTORS**

Organic semiconductors are characterised by weak intermolecular van der Waals bonding. Many vibrational modes are soft and strongly anharmonic and any electronic processes occur in a strongly fluctuating structural landscape. This gives rise to a unique and interesting transport regime not found in inorganic semiconductors in which electronic excitations are effectively able to surf on the waves of molecular lattice distortion. A key requirement is that the energetic site disorder is sufficiently small that it becomes possible for vibrational modes to couple localized states near the band edges to highly delocalised states within the bands that can then transport excitations over long length scales. In this talk we will provide an overview over how we currently understand the charge and spin transport physics of organic semiconductors in this regime.