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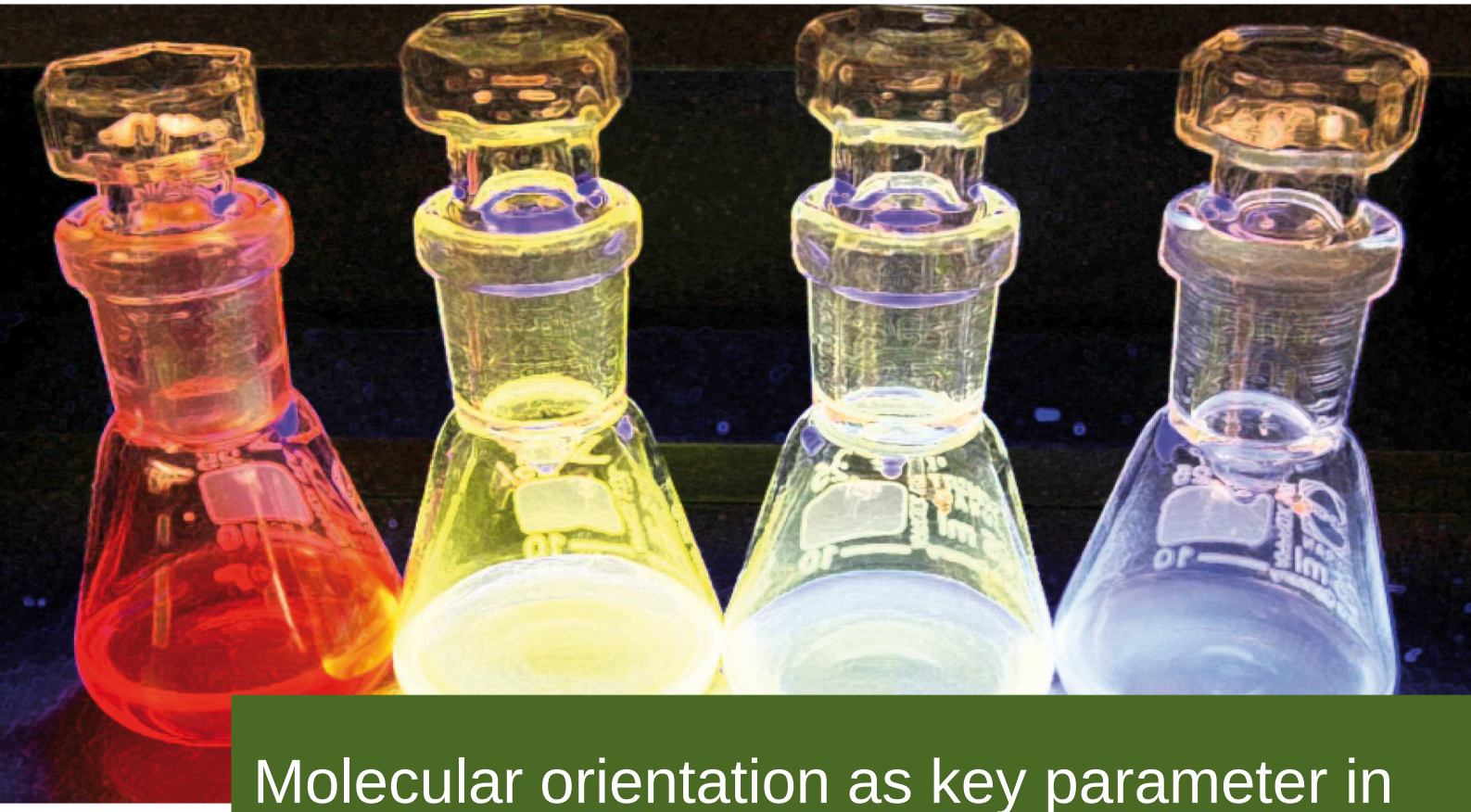

Molecular orientation as key parameter in organic optoelectronics

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Owing to weak intermolecular bonding forces and low dielectric constants, electron-hole pairs in organic semiconductors are usually strongly bound ("excitons") with important consequences for application in optoelectronics. In contrast to their inorganic counterparts, the majority of molecular materials exhibit an additional degree of freedom due their anisotropic shape. The microscopic orientation of molecules in thin film devices has a strong impact on macroscopic properties such as charge carrier transport and optical properties as well as on the efficiency of optoelectronic devices.
This talk will present different aspects of the influence of molecular orientation in different types of devices and discuss the consequences for their functioning.
Examples are

- the influence of emitter orientation on light-extraction efficiency in organic light-emitting diodes
- the interplay between molecular orientation and light-harvesting efficiency in organic photovoltaic cells
- the impact of partially oriented polar molecules at organic semiconductor hetero-interfaces

23. November 2015
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Campus Freudenberg
Hörsaal FZH3

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