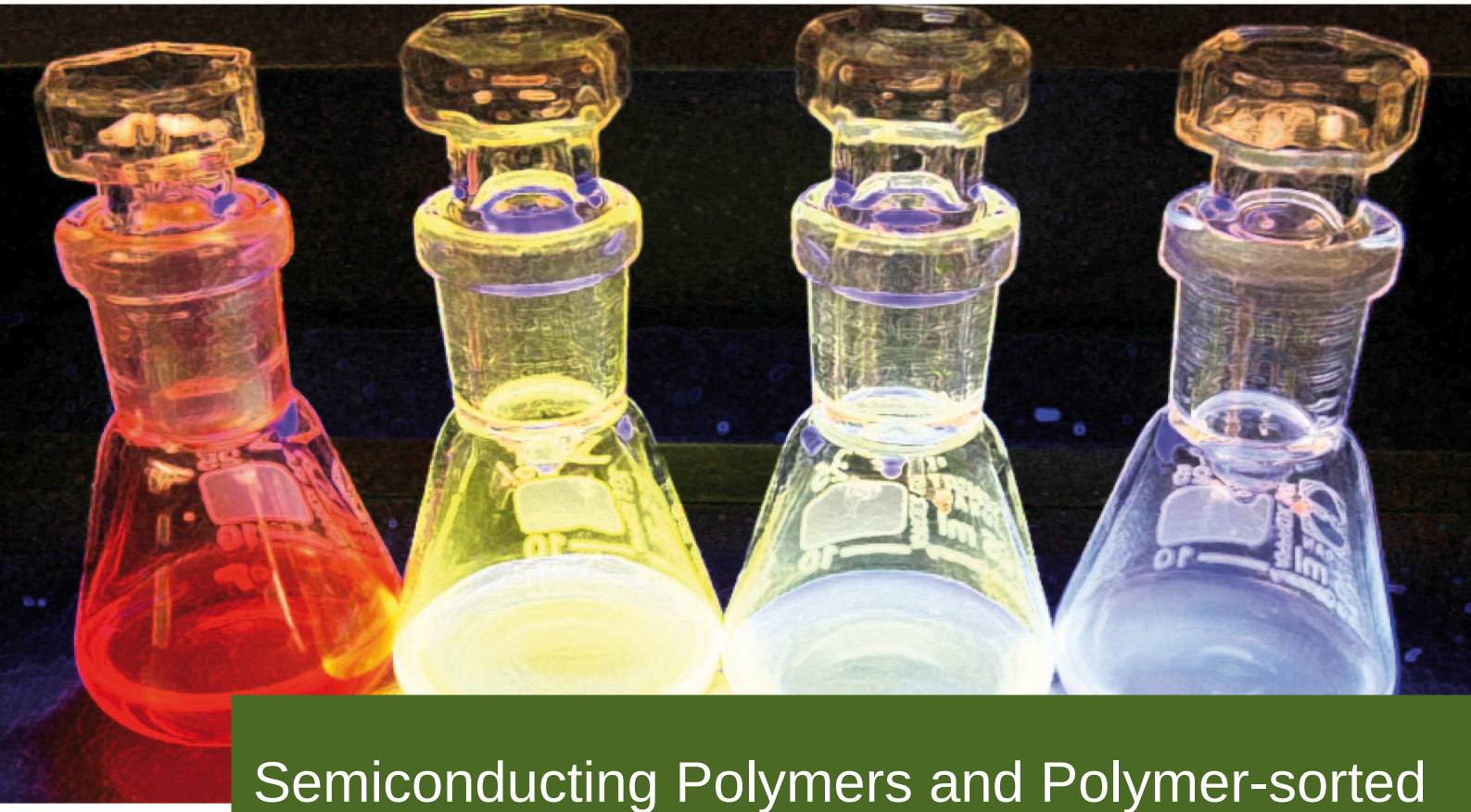
BERGISCHE UNIVERSITÄT WUPPERTAL

IfP
Institut für Polymertechnologie



Semiconducting Polymers and Polymer-sorted Carbon Nanotubes for Optoelectronic Devices

Prof. Dr.
Jana Zaumseil
Institute for Physical Chemistry
Universität Heidelberg
D-69120 Heidelberg

20. November 2015
14:00 Uhr
Campus Grifflenberg
Hörsaal 25

www.ifp.uni-wuppertal.de

The search for high-mobility, solution-processable semiconductors for printable field-effect transistors has led to a large variety of new materials. Among them are novel donor-acceptor polymers that reach carrier mobilities of a few cm2/Vs and random networks of purely semiconducting single-walled carbon nanotube (s-SWNT) with effective mobilities around 50 cm2/Vs that are obtained by highly selective dispersion with conjugated polymers. Both materials also emit light in the near-infrared and can be used to create ambipolar light-emitting field-effect transistors. Here I will show how electroluminescence from narrow bandgap semiconducting polymers can be coupled directly to plasmonic nanoantennas to enhance radiative decay and thus emission efficiency and how electroluminescence spectra can be used to investigate charge transport in mixed networks of polymer sorted s-SWNT.