



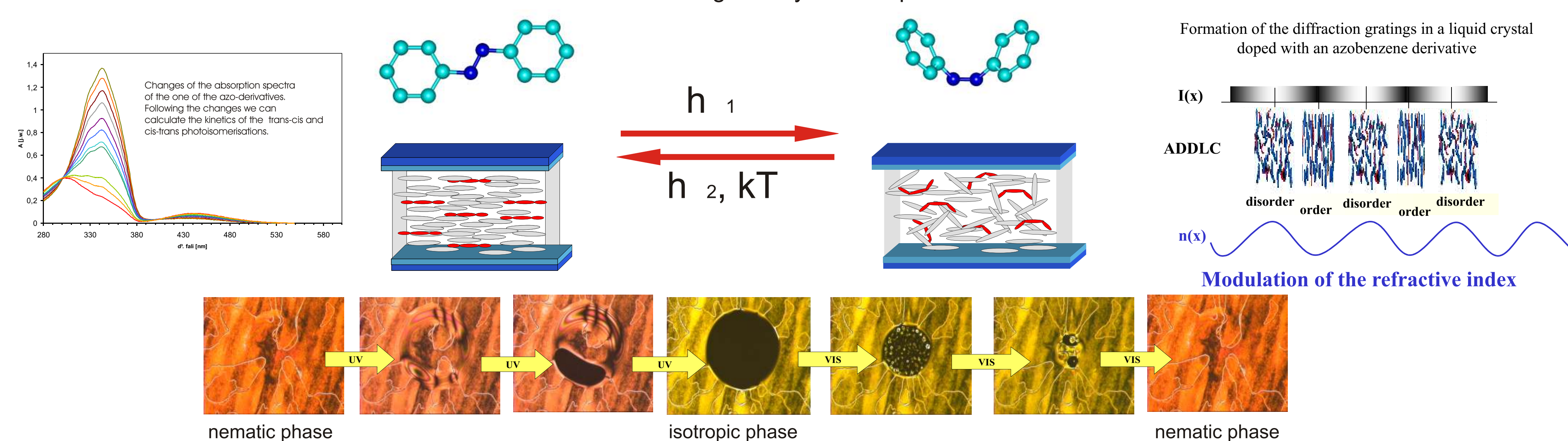
Molecular Photoactive and Electronic Materials

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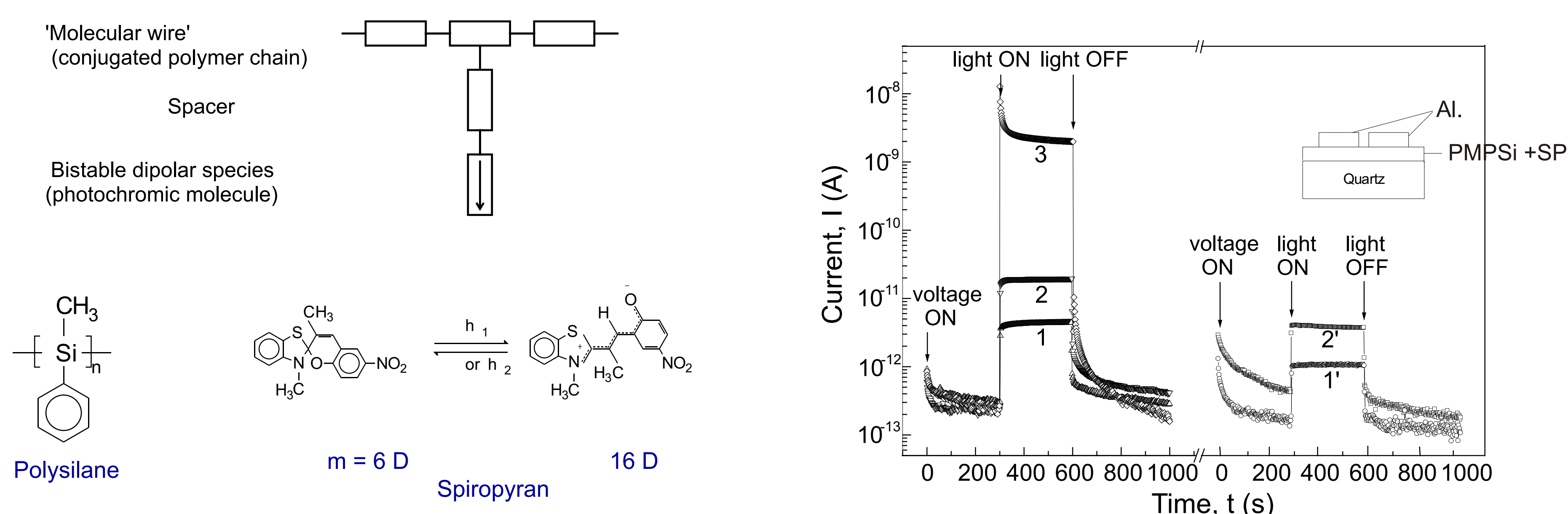
PHOTOINDUCED PHASE TRANSITIONS IN DYE-DOPED LIQUID CRYSTALS

The photoisomerisation of photochromic azobenzene derivative can destabilize the LC ordered phase because of the change of the shape of the azobenzene molecule from the rod-like *trans* form to the bent *cis* form. The isotropic phase may appear upon UV irradiation at temperature substantially lower than the thermodynamical temperature of the N-I phase transition. The nematic phase may occur under the irradiation with the VIS light or by thermal process.



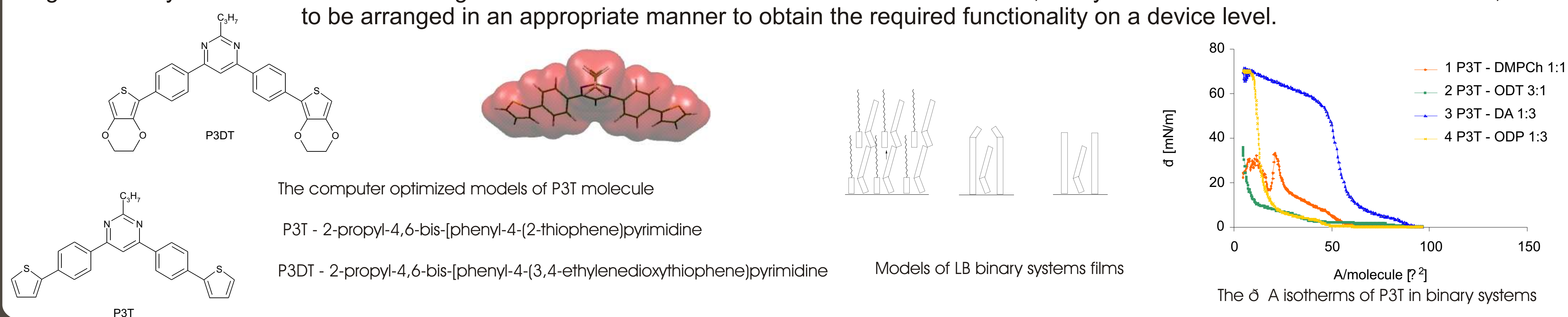
MOLECULAR SWITCH

Transport of charge carriers on a polymer chain may be influenced by dipoles situated in its vicinity. If the dipoles are reversibly switched, then traps for charge carriers are created and annihilated in a controlled way. Here the photochromic spiropyran, which may be switched between high- and low dipole moment forms, is dissolved in photoconducting pMPSi matrix.



STRUCTURES OF LB FILMS CONTAINING FUNCTIONALISED MOLECULES

The LB technique offers a unique method of preparing highly ordered organic systems with molecular architectures and thicknesses, which are controllable at the molecular level. At the same level the LB technique offers a degree of order which results in an increased degree of crystallinity and conjugation. Derivatives of chalcones seem to be a very attractive starting materials in polymer chemistry, because they are easy to prepare with large variability at the level of aromatic rings. Once we have molecules with the desired attributes, many of them with different functional units, have to be arranged in an appropriate manner to obtain the required functionality on a device level.



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