Anisotropic dynamic response of pentacene single crystals

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Abstract. We have investigated the polarization and momentum dependence of singlet excitons in pentacene molecular crystals using inelastic electron scattering. Our results demonstrate that both the direction as well as the absolute value of the momentum are decisive for the spectral intensity of these excitons. Possible implications of this observation for a microscopic understanding of excitons in organic molecular crystals are discussed.

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