

Zeitschriftenbeitrag



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Zeitschrift	The European Physical Journal B - Condensed Matter and Complex Systems
Verlag	Springer Berlin / Heidelberg
ISSN	1434-6028 (Print) 1434-6036 (Online)
Heft	Volume 59, Number 1 / September 2007
Kategorie	Solids and Liquids
DOI	10.1140/epjb/e2007-00256-6
Seiten	25-28
Subject	
Collection	Physik und Astronomie
SpringerLink	
Date	Freitag, 28. September 2007

Solids and Liquids

Anisotropic dynamic response of pentacene single crystals

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Received: 14 June 2007 **Published online:** 28 September 2007

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.

PACS. 78.20.-e Optical properties of bulk materials and thin films - 71.35.-y Excitons and related phenomena - 78.30.Jw Organic compounds, polymers