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**Charge transport in single-crystals of pentacene studied with temperature dependent THz time-domain spectroscopy.** H.A. VAN LAARHOVEN, Eindhoven, University of technology., M. KOEBERG, E. HENDRY, M. BONN, AMOLF, Amsterdam, C.F.J. FLIPSE, Eindhoven, University of Technology — We study the charge dynamics and transport mechanisms in single crystals of pentacene by investigating the frequency dependent complex conductivity using THz time-domain spectroscopy. Such measurements on this material show generation of THz radiation from the sample as well as ultra-fast charge decay. Our measurements have been corrected for these effects, giving us the ability to see the true frequency dependent behaviour of the conductivity. Two different pump energies were used (266 and 400 nm) in the experiments. In the low temperature regime the mobile charges give a different response when being photo-excited at different wavelength. This disparity in charge transfer will be discussed and compared to theoretical models.

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