

Photo-induced High Temperature Superconductivity in Organic Compounds

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Abstract

I will discuss how coherent optical pulses at mid infrared frequencies can be used to excite targeted molecular vibrations in organic materials with strongly correlated electrons and manipulate their electronic properties. I will discuss especially the case of charge transfer salts and of doped fullerites. Both materials exhibit colossal increase in carrier mobility for certain vibrational excitations and key signatures of photo-induced high temperature superconductivity.