

Organic Superconductors; Springer Science & Business Media, 2012; Takehiko Ishiguro, Kunihiko Yamaji, Gunzi Saito; 9783642582622; 522 pages; 2012

Organic Superconductors vs High T_c Oxides. Front Matter. Pages 5-5. PDF. This book contains papers presented at the International Conference on Organic Superconductivity which was held May 20-24, 1990, at the Stanford Sierra Conference Center, South Lake Tahoe, California. In the twenty years since the First Conference on Organic Superconductivity was held (Hawaii, 1969), there has been remarkable progress in the field. Berlin: Springer-Verlag. © 2008. 756 p. Our book welcomes a reader to a fascinating world of exotic condensed matter physics, low temperatures, and high and ultrahigh magnetic fields. It is written by leading experts in the area from USA, France, Japan, Russia, United Kingdom, Germany, Canada, South Korea, Croatia, Hungary, and Switzerland. The book consists of six parts, subdivided into 27 chapters, which contain both the experimental results and their theoretical explanations. An organic superconductor is a synthetic organic compound that exhibits superconductivity at low temperatures. As of 2007 the highest achieved critical temperature for an organic superconductor at standard pressure is 33 K (−240 °C; −400 °F), observed in the alkali-doped fullerene RbCs₂C₆₀. In 1979 Klaus Bechgaard synthesized the first organic superconductor (TMTSF)₂PF₆ (the corresponding material class was named after him later) with a transition temperature of T_C = 0.9 K, at an external pressure of Organic superconductivity refers to the regular phenomenon of superconductivity as it is observed in some metals and metallic inorganic compounds. However, what makes organic superconductivity so distinctive is that conduction in organic molecular conductors is linked to the transport of free charges (electrons or holes) between π -like molecular orbitals of neighbouring open shell molecules. In addition, these new materials reveal quasi one dimensional features of their electronic transport One aspect of organic superconductors such as the Bechgaard salts that makes them interesting topics of study are that they are strongly anisotropic in structure (for more information see the crystal structure section), so that their conductivity differs along the three axes by multiple orders of magnitude. Therefore, organic superconductors are good candidates for being very high critical