



Semiconducting and Metallic Polymers (Hardback)

By Alan J. Heeger, Niyazi Serdar Sariciftci, Ebinazar B. Namdas

Oxford University Press, United Kingdom, 2010. Hardback. Condition: New. Language: English. Brand new Book. Conducting and semiconducting (conjugated) polymers have a unique set of properties, combining the electronic properties of metals and semiconductors with the processing advantages and mechanical properties of polymers. Now, thirty-five years after their discovery, metallic conducting polymers have been demonstrated in the laboratory to have electrical conductivities approaching that of copper, and mechanical strengths exceeding that of steel, a remarkable achievement. A wide variety of electrical and optical devices have been demonstrated using semiconducting polymers. Light-emitting devices have been made which are as bright as fluorescent lamps at applied voltages of only a few volts; photovoltaic solar energy conversion using conjugated polymer composites is in industrial production; conjugated polymer transistors, circuits and chips have been demonstrated. Indeed, semiconducting and metallic polymers can be thought of as electronic 'inks'. The advances in printing technology (ink-jet printing, off-set printing, etc) combined with the science and technology of conducting polymers will revolutionize the way in which electronic devices are manufactured. In addition, semiconducting and metallic polymers can be used in applications which require special mechanical properties such as flexibility. The field of semiconducting and conducting polymers has become one of the most...



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