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intrinsically conducting polymer

Electrically conducting polymer composed of macromolecules having fully conjugated sequences of double bonds along the chains.

Notes:

1. The bulk electrical conductivity of an intrinsically conducting polymer is comparable to that of some metals and results from its macromolecules acquiring positive or negative charges through oxidation or reduction by an electron-acceptor or -donor (charge-transfer agent), termed a dopant.
2. Examples of intrinsically conducting polymers are polyacetylene, polythiophene, polypyrrole, or polyaniline. Unlike polymeric electrolytes, in which charge is transported by dissolved ions, charge in intrinsically conducting polymers is transported along and between polymer molecules via generated charge carriers (e.g., holes, electrons).
3. An intrinsically conducting polymer should be distinguished from a conducting polymer composite and from a solid polymer electrolyte.

Source:

PAC, 2006, *78*, 2067 *(Terminology of polymers containing ionizable or ionic groups and of polymers containing ions (IUPAC Recommendations 2006))* on page 2070

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