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PEDOT and PEDOT:PSS conducting polymeric hydrogels: A report on their emerging applications

Mushtaq A. Bhat, Reyaz A. Rather, Aabid H. Shalla

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Abstract

Conducting polymers (CP's) are currently being explored in areas like bio-interfaces, bioelectronics and medical purposes. Inclusion of moieties of CP's into hydrogels has received substantial traction in recent years due to their high conduction (both electrical and electrolyte phases), adjustable mechanical properties, swelling disposition and their tunable three dimensional (3D) matrix. As such conducting polymeric hydrogels (CPH's) have successfully emerged as potential candidates for medical therapies, medical and bioelectronics, environmental pollution treatments, energy storage and sensors. CPH's provide a better platform for envisaging innovative technologies including flexible electronic devices like supercapacitors due to the flexible nature of CPH's. Among large class of CP's poly (3,4-ethylenedioxythiophene) (PEDOT) has attracted huge interest in