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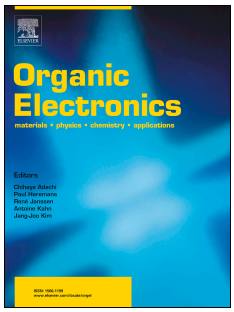

Effects of pore size of reverse opal structured PEDOT films on their electrochromic performances

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Effects of pore size of reverse opal structured PEDOT films on their electrochromic performances

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Four reverse opal structured PEDOT (R-PEDOT) films consist of ordered 3D face-centered cubic structure with different hemispherical pores are prepared by an electrochemical deposition using optical photonic film consisting of different sized PS microspheres as the template, and then removing the PS microspheres.The R-PEDOT films show deep blue structural colors and rainbow effect with improved electrochemical properties, chromatism values and contrast, but there is no linear relationship between electrochromic properties and their pore size. The results provide that introducing three-dimensional periodic nanostructures into PEDOT is a promising new method to improve its performance, and deserved to be further studied.