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**Conducting polymer-metal nanoparticle composites with controlled dimensionality** KYOUNGWOOK KIM, MOON JEONG PARK, Pohang Univ of Sci Tech — Conducting polymers have extensively been studied for diverse applications such as electronic devices and energy conversion systems owing to their high electrical conductivity and low-temperature processing conditions. Particularly, the composite materials composed of conducting polymers and metal nanoparticles have become increasingly important to increase their functionalities. In the present study, we synthesize the conducting polymer/metal nanoparticle composites and demonstrate the importance of controlling the dimensionality of resultant materials to enhance electrical conductivity. Two-dimensional conducting polymers prepared on ice surfaces showed the long-range ordered edge-on  $\pi$ - $\pi$  stackings that offer well-arranged molecular sites for nucleating nanocrystals with high density. This enabled us to achieve high redox catalytic activity, which marked a significant improvement from the literature.

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