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Interconnected and nano-perforated lamellar sheets of metal oxides produced using novel block copolymer templates PAUL ZAVALA-RIVERA, KEVIN CHANNON, VINCENT NYUGEN, EASAN SIVANIAH, NATARAJ SANNA KOTRAPPANAVAR, University of Cambridge, S.A. AL-MUHTASEB, Qatar Univeristy — Recently, our group has investigated the development of a novel bicontinuous nanostructure using block copolymers. This has lead to the creation of various bicontinuous, mesoporous, and interconnected metal oxides sheets. The high surface area produced by the 3D nanostructure has shown a considerable improvement in efficiency in the method of preparation. The main transformations from polymer scaffold to inorganic matrices produced by our group include the use of oxide of titanium, and a number of other sol-gel transformations. The application of these nanostructures is shown in the development of photovoltaic devices. We highlight future applications in electronic, memory, energy storage and production devices.

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