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Synthesis of MXene nanoribbons with Onion-like carbons for supercapacitors

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A new family of 2D materials called MXenes have recently been discovered, which can be synthesized from MAX phases via chemical etching of the A group elements. The properties of MXenes can be tuned by changing their terminal functional groups, and they further allow for the easy creation of thin films, increasing their versatility. Their 2D structure allows for fast redox reactions at their surface, which creates an excellent candidate for supercapacitor electrode material for high power density applications. We doped Ti₂C with onion-like carbons, a material known for excellent conductivity and highly accessible surface area, and studied its physical properties as a cathode for applications in supercapacitor storage. We will further comment on its applicability in conjunction with photovoltaic panels.

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