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New hydrogen fuel catalyst

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A powerful new hydrogen fuel catalyst developed by Berkeley engineers relies on a surprising ingredient: gelatin, the same material that makes Jell-O desserts jiggle. Composed of nanometer-thin sheets of metal carbide, this catalyst works just as efficiently as platinum to generate hydrogen fuel from water, but at a much lower cost than the rare and expensive metal. To create the catalyst, the researchers, led by mechanical engineering professor **Liwei Lin,** simply mixed water, gelatin and a metal ion — either molybdenum, tungsten or cobalt — and then let the mixture dry. As the gelatin dried, it self-assembled into flat layers of the metal ion. When the mixture was heated to 600 degrees Celsius, the metal ion reacted with the carbon atoms in the gelatin, forming large sheets of metal carbide. The unreacted gelatin burned away. The researchers say this new catalyst is also a greener way of generating hydrogen than the widespread method of using water gas, which produces carbon dioxide as a byproduct. And because the process is relatively simple, it could be easily scaled up to produce large quantities of the catalyst, making this a potential game changer for hydrogen fuel generation in the future.

- **Read more:** Researchers use jiggly Jell-O to make powerful new hydrogen fuel catalyst

Topics: Mechanical engineering, Energy, Research