

Innovation: A New Kind of Metal  
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PHOTOGRAPH BY JAMIE CHUNG

Imagine a metal that's stronger, lighter, and more energy absorbent than steel -- yet is cheaper to make. That's the dream of Christina Lomasney, CEO of Seattle-based Modumetal. The company, which Lomasney founded in 2006 with chemical engineer John Whitaker, grows its product (also called Modumetal) in a tank full of acid. Scraps of nickel, iron, and other metals are dissolved in the acid and then reborn, with a series of electric charges that alter the metals' atomic structure. More electric jolts are used to shape the metal as it grows, so it conforms to a mold placed inside the tank. Modumetal, Lomasney says, will eventually be used to create lightweight bulletproof vests, heat-resistant aircraft turbines, and vehicle suspension systems that can absorb some of the energy from a bomb blast. The company has 13 employees and an \$850,000 research and development contract with the U.S. Defense Logistics Agency. By next year, Lomasney hopes to have prototypes of turbine blades and vehicle suspensions ready for testing.

"We grow the materials from the ground up, very much like nature grows shell and bone." --  
CEO Christina Lomasney