Startup launches first 3D-printed battery-powered rocket

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Rocket Lab is a Lockheed Martin-funded startup that dreams of taking small satellites to space for an affordable price -- but it wants to do so using technology quite different than usual. See, the company has revealed that its engine called the "Rutherford" is (1) composed mostly of 3D-printed parts, and (2) uses batteries instead of liquid fuel. It will paired up with the company's Electron launch system, and together they make up the first battery-powered rocket, or so the startup claims. By using lithium polymer batteries (and hence, electricity) to propel the rocket, the company can get rid of all the tubes and pumps needed for systems that use liquid power sources.

In addition, it takes merely three days to print the components of the Rutherford engine out of titanium and other alloys, using an advanced form of 3D printing called "electron beam melting." (If those components are manufactured via traditional means, it will take up to a month instead.) That means Rocket Labs', well, rockets, are lighter, can be manufactured faster and will cost clients less money per launch. In fact, the startup believes it will cost only around $4.9 million to send the 65 feet x 3 feet system to space, carrying a payload that weighs up to 220 pounds. It plans to start ferrying satellites and other payloads out there in 2016.

While intriguing, the Rutherford-Electron rocket is far from being the first one to use electric propulsion. The Dawn spacecraft that's on its way to proto-planet Ceres has an electric engine on board. Plus, NASA is developing a next-gen ion thruster (which, yes, uses electric propulsion) for its future asteroîd mission.

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