

US-Made, Ultrahigh-Energy Cathodes will Enable Low-Cost Electric Vehicle Batteries for North American Market

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Forge Nano and TexPower are collaborating under a recently-awarded SBIR Phase I grant to further enhance TexPower's cobalt-free, nickel-based ultrahigh energy cathode powders with Forge Nano's low-cost materials modification nanotechnology. Results from initial trials show >230 mAh/g, which equates to a 25% increase in energy density and a 10% reduction in battery costs for electric vehicles over existing battery materials.

"The precision and versatility of Forge Nano's advanced coating technologies are enhancing TexPower's cobalt-free, ultrahigh energy cathode powders! We look forward to the improved performance and safety benefits atomic layer deposition will bring to our commercial materials. The TexPower-ForgeNano collaboration will help bring TexPower cathodes to the rapidly evolving EV market and beyond." – Dr. Evan Erickson, CEO TexPower.

"We're extremely impressed with TexPower's cathode materials. We have tested over 50 cathode materials from global Fortune 500 companies and startups over the past few years and TexPower's energy density is second to none. We're even more excited that our proprietary atomic layer deposition coatings will enable the required cycle life for these US-made materials to enter commercial adoption in the near future. This collaboration is yet another example of our relentless drive to enhance the best battery materials domestically and globally to enable lower cost electric vehicles, consumer products, and energy storage systems." – Dr. Paul Lichty- CEO [Forge Nano](#).

The SBIR award, entitled 'Taming Ultrahigh Energy Cathodes with Stabilizing Coatings: Harnessing Atomic Layer Deposition to Deploy High-Nickel, Cobalt-Free Cathodes in Electric Vehicles', grants the TexPower/ForgeNano team \$206,500 to advance current state-of-the-art battery chemistries. In this project, spearheaded by Dr. Ryan Pekarek, TexPower will enhance the stability of their cobalt-free, ultrahigh energy cathode materials using the coatings deposited by atomic layer deposition (ALD). TexPower is casting a wide net, exploring several ALD coating chemistries in order to learn how TexPower's new class of cathode materials

interacts with ALD-deposited coatings. Upon completion of this project, TexPower will identify a product line of ALD-coated cathode materials that they will scale and commercialize. Early results from the collaboration show that ALD improves TexPower's lifetime by 30% in full cells, while also reducing resistance by at least 5X over the lifetime of the cell.

From energy storage materials to pharmaceutical research, Forge Nano's ALD platform makes products better from the atoms up. Forge Nano's suite of ALD technologies can be found in various products from Li-ion batteries, high reliability electronics, vaccines, and more.

Read the [original article](#) on Forge Nano.