

## **Cobalt, Lithium, Vanadium, Whateverium**

In the world of electric vehicles, there is a constant search for materials that have high voltage, reversibility, and accessibility built into their fundamental atomic structure. Lithium has been a major buzzword for years but lately we have seen, in numerous business and technical journals, articles about cobalt and vanadium (other metals in the periodic table) as alternatives or as enhancers of electrical properties. Various companies and stock funds have focused on one or more of these, trying to figure out the challenges of supply (supplies of many of these materials are overseas, occasionally in unstable countries).

Let's put our TRIZ hats on for a few minutes. We know that FUNCTION is what is important in a system, process, or device. No one driving or purchasing a car cares one iota what the components of the electrical storage system are. It just needs to be safe, deliver the performance needed, and be part of a system that is replaceable. Someone who discovers a metal, alloy, or some other material that accomplishes what these materials do will quickly replace the companies who supply these existing materials. NEVER forget that what your customer needs is a function, delivered in the most ideal way. And don't let hype about any one material drive a technical or business decision in a vacuum.