

## Silver Nanoparticles May One Day Be Key to Devices that Keep Hearts Beating Strong and Steady

Source: The State University of New York at Buffalo

Author: n/a

2/11/2010

Researchers at the University of Buffalo (UB), United States, are investigating the use of silver nanoparticles to improve lithium/silver vanadium oxide batteries that are used in implantable cardiac defibrillators (ICDs), devices that use a shock to return the heart to a normal rhythm when it fibrillates. This team also developed the battery that, twenty years ago, made ICDs feasible. Now, by using silver nanoparticles generated in-situ, the batteries they are developing are 15,000 times more conductive upon initial battery use. This technology allows for the development of higher-power and longer-lasting batteries, which could expand their use to other biomedical applications, such as treating stroke and mental illness in the brain, or migraines and Alzheimer's disease in the vagal nerve system. Esther Takeuchi, a researcher at UB, says "[W]hat's really exciting about this concept is that we are tuning the material at the atomic level. So the change in its conductivity and performance is inherent to the material. We didn't add supplements to achieve that, we did it by changing the active material directly." Currently, tests are underway to explore how to boost the stability of these silver nanoparticles over time and at body temperature. The article can be viewed at the link below.

<http://www.buffalo.edu/news/10938>