

## **291u Electrochemical Preparation of Nanoparticles**

*Karthik Venkatachalam, Vasilis G. Gavalas, D. Bhattacharyya, and Leonidas G. Bachas*

An electrochemical method to produce zero-valent nanoparticles is reported. Zinc nanoparticles were prepared in situ in a conductive polymeric film (polypyrrole doped with poly-L-glutamic acid). The electrochemical approach provides facile regeneration of the particles and also prevents aggregation of nanoparticles in the conductive polymeric film. The correlation of the amount of zinc with the thickness of the film indicates that the zinc resides largely in the outer layer of the film. SEM and EDS data show that the nanoparticles formed are composed of zinc and are  $28 \pm 6$  nm in diameter. The nanoparticle/polymer composite was used to reduce halogenated organics.