Dr. Paul Bernatis

DuPont

Advanced Cleans and Slurry Technologies

Hayward California

Paul Bernatis holds a Ph. D. in Mechanistic Inorganic Chemistry. A common thread throughout his career has been research and development involving nanomaterials. In his first industry position, he developed nanoparticles that were used to deliver highly insoluble drugs into the bloodstream. Bioavailability could be increased from zero to greater than 75% by preparing amorphous drug nano-particle suspensions.

After gaining considerable experience with nanoparticles in the pharmaceutical industry, his next stop was at a leading startup in Silicon Valley commercializing bottom-up technologies to create nanomaterials used in manufacturing electronics. One project involved generating stabilized nanoparticles made of metals such as ruthenium, which were incorporated into dielectric materials to generate a floating gate structure for memory devices.

Since joining DuPont in 2007, Paul's work has focused on developing formulations for post-CMP cleaning and post etch residue removal. The background he has in nanoscience and inorganic chemistry has been a great advantage in his work at DuPont, which requires the development of selective chemistries to remove tenacious residues from delicate structures. In 2023, Paul was awarded the Pederson Medal by DuPont's Laureates for his technical acheivements in cleaning technology. Most recently, Paul's responsibilities have been broadened to include work on new innovations for slurries and high selectivity etchants.