From Lab to Market:

Story of a New Generation Particle Technology: MicNo®

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Nanomaterials play critical roles in today's world. Among them, nanoparticles are the most widely utilized group and they have been successfully utilized in many technological applications from electronics to medical industry. Fine size of nanoparticles (typically <100 nm) brings unique properties that can not be achieved at larger sizes (i.e., in submicron or micron form). Although nanoparticles posses unique properties, their fine size may cause processing difficulties such as uncontrolled agglomeration, health and environmental problems. Consequently, when scientists deal with nanoparticles, they should not only focus on advantages of them and produce more and more of those particles but also be aware of the potential problems associated with such fine particles and develop new solutions to overcome such potential problems while maintaining unique properties of nanoparticles. Accordingly, our research group with the sponsorship of Entekno Materials, Ltd. (www.enteknomaterials.com) developed innovative MicNo® Particle Technology, provides both safe and environmentally benign nanoparticle solutions. MicNo particles are designed, platelet shaped micron particles which are composed of nano primary particles. In this presentation, application of the MicNo particle technology to ZnO system and subsequently both optical and biological properties of MicNo®-ZnO particles will be discussed in detail. In addition, transition of MicNo®-ZnO particles to commercial applications will be presented.