

## 표면특성이 제어된 기능성 나노 입자의 전자 및 의공학적 응용

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The fabrication, characterization and manipulation of nanoparticle system brings together physics, chemistry, materials science and biology in an unprecedented way. Phenomena occurring in such systems are fundamental to the workings of electronic devices, but also to living organisms. The ability to fabricate the surface of nanoparticles is essential in the further development of functional devices that incorporate nanoscale features. Even more essential is the ability to introduce a wide range of chemical and materials flexibility into these structures to build up more complex nanostructures that can ultimately rival biological nanosystems. In this respect, polymers are potentially ideal nanoscale building blocks because of their length scale, well-defined architecture, controlled synthesis, ease of processing and wide range of chemical functionality that can be incorporated. In this presentation, we will look at a number of promising polymer-based nanoparticle fabrication strategies that have been developed recently, with an emphasis on those techniques that incorporate nanostructured polymeric particles into electronic devices or biomedical applications. And functional nanoparticles deliberately designed using several powerful process methods and their application will be discussed. Nanostructured nanoparticles, what we called, implies dispersed colloids with the size ranged from several nanometers to hundreds of nanometer. They have extremely large surface area, thus it is very important to control the morphology or surface functionality fitted for adequate objectives and properties. Their properties should be controlled for various kind of bio-related technologies, such as immunomagnetic cell separation, drug delivery systems, labeling and identification of lymphocyte populations, extracorporeal and hemoperfusion systems, etc. Well-defined polymeric nanoparticles can be considered as smart bomb or MEMS.

### 참고문헌

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