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P.S.A.25.

LAYERED CORE-SHELL MODEL FOR DELIVERING NANOBIOMATERIALS

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In this paper we will analyze application of nanomaterials in biomedicine, that is to say we will present the recent accomplishments in basic and clinical nanomedicine. Numerous novel nanomedicine-related applications are under development or are in the research phase, and the process of converting basic research in nanomedicine into commercially viable products will be long and difficult. Achieving full potential of nanomedicine may be years of even decades away, however, potential advances in drug delivery, diagnosis, and development of nanotechnology-related drugs start to change the landscape of medicine. Implants, especially in dentistry, due to new biomaterials and thin coatings with specific tasks, but are now widely used. Based on our research in ultrathin crystalline structures performed so far, superlattices, quantum wires and Q-dots, we will consider the core-shell multilayer materials that can act as carriers for medicines and tagged substances.

P.S.A.26.

ELECTROCHEMICAL PROPERTIES OF ANODICALLY GROWN TiO2

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Nanostructured amorphous and anatase TiO_2 are both considered as high rate Li-insertion/extraction electrode materials. Here we present the preparation of titania on titanium substrate by the anodic oxidation method. The anodization was conducted using a two-electrode configuration under a constant voltage. Highly viscous fluoride containing glycerol electrolyte was used to anodically grow amorphous TiO_2 on titanium substrate. The crystal structure was characterized by X-ray diffraction. After thermal treatment at 400 °C amorphous TiO_2 crystallizes to anatase phase. The surface morphology was observed by scanning electron microscopy. Electrochemical properties of the as-prepared substrates directly used as anode in lithium-ion cell were examined through galvanostatic discharge/charge tests.