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Timoshina Y.

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The basic concepts and definitions, the history of the development of nanotechnology, their potential and development prospects are considered. The classification of nanomaterials is presented, the structural features of nanomaterials, size effects, and properties of nano-objects are considered. The main approaches and technologies for producing nanomaterials, methods for studying nanoscale structures are presented, the diagnostic features and metrology problems in the field of nanotechnology are considered.

Designed for bachelors and masters studying for degrees in "Nanoengineering" and "Materials Science and Materials Technology".

Prepared at the Department of Plasma Chemistry and Nanotechnology of High Molecular Materials.

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