**Midterm questions on discipline «CHEMISTRY OF NANOMATERIALS»**

1. Strategies for the Scalable Synthesis of Quantum Dots and Related Nanodimensional Materials.
2. Moving Nanoparticles Around: Phase-Transfer Processes in Nanomaterials Synthesis.
3. Mesoscopic Assembly and Other Properties of Metal and Semiconductor Nanocrystals.
4. Oxide Nanoparticles.
5. Sonochemistry and Other Novel Methods Developed for the Synthesis of Nanoparticles.
6. Solvothermal Synthesis of Non-Oxide Nanomaterials.
7. Nanotubes and Nanowires.
8. Synthesis, Assembly and Reactivity of Metallic Nanorods.
9. Oxide-Assisted Growth of Silicon and Related Nanowires: Growth Mechanism, Structure and Properties.
10. Electronic Structure and Spectroscopy of Semiconductor Nanocrystals.
11. Core-shell Semiconductor Nanocrystals for Biological Labeling.
12. Large Semiconductor Molecules.
13. Oxomolybdates: From Structures to Functions in a New Era of Nanochemistry.
14. Nanostructural Polymers.
15. Recent Developments in the Chemistry and Chemical Applications of Porous Silicon.
16. Nanocatalysis.
17. Nanoporous Materials.
18. Photochemistry and Electrochemistry of Nanoassemblies.
19. Electrochemistry with Nanoparticles
20. Nanolithography and Nanomanipulation.

References

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2. Sol-gel synthesis: Sol-Gel Science: The Physics and Chemistry of Sol-gel Processing. Brinker, C.J.; G.W. Scherer, Academic Press, 1990.
3. Applied Electrochemistry. Thompson, Maurice de Kay, The MacMillan company (available on line at: http://www.archive.org/stream/appliedelectroch00thomrich#page/n5/mode/2up) Chapter III, IV, V. Online source at: http://www.tannerm.com/electrochem.htm
4. Virtual Chemistry Textbook: A reference text for General Chemistry by Stephen Lower. Available online at: http://www.chem1.com/acad/webtext/virtualtextbook.html