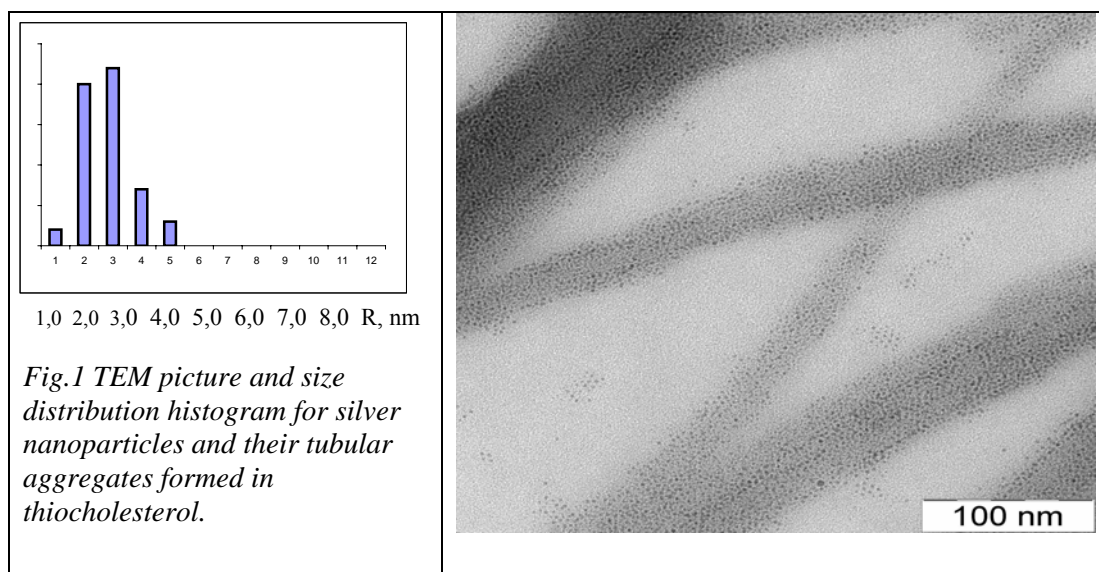


Silver/thiocholesterol nanosized aggregates formation in LC mesophase

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Hybrid nanosystems including nanosized metal particles stabilized by different organic ligands or incorporated into polymer or organic/inorganic solid matrices are of great interest due to their unique quantum-sized physical and chemical properties [1-3]. Using liquid crystals (LC) as stabilizing agents and self-organizing matrix opens new possibilities for production of highly ordered nanostructured systems. New nanosized silver/thiocholesterol aggregates including metal particles of $d=2,5\pm 0,5$ nm in size have been obtained by two phase (water/toluene) reduction of silver salt in presence of thiocholesterol. Ordered silver nanoparticles structures were formed by removing of solvent and cooling from isotropic state to ligand mesophase. The microstructure and composition of the system was characterized by FTIR, UV-Vis spectroscopy and high resolution transmission electron microscopy (TEM). The TEM picture of the silver/thiocholesterol samples stored at ambient temperature during 24 hours and also the histogram for size distribution of the individual silver nanoparticles formed in the system are presented in Figure 1.



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