Au Nanostructured glasses fabricated simultaneously by PLD and Sol-Gel techniques.

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In this work we report the synthesis of a silicate glass containing Au nanoparticles by pulsed laser ablation and Sol-Gel technique [1]. Au nanoparticles (Np's) are generated by laser ablation from a gold target. The Au target is immersed in a transparent solution made with tetraetilorthosilicate (TEOS) and water adding chloridric acid as a catalyzer. The solution is prepared prior to the ablation process. The ablation was performed using a Nd:YAG laser emitting at 532 nm, with an energy of 100 mJ focussed in a 2mm diameter laser spot. The ablation time was varied from 1 min to 10 min to vary the concentration of Au nanoparticles. We have observed that Np's were uniformly dispersed in the solution before the gelation regime. After the ablation process the gels were sealed and stored at room temperature for 24 hours. The drying conditions are determinant to obtain bulk stable glasses. The samples were characterized by HRTEM, UV-Vis.

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