

Sonochemical modification of graphite

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Sonochemistry at solid surfaces is poorly understood. Bubbles are created by high pressure gradients and large flow rates in liquids near a solid surface. The collapse creates locally extreme pressures and temperatures as well as shock waves and a liquid impinging on the surface. This efficient and “green” tool for the formation of new surfaces, nanoparticles, submicron and micron 3-D porous hierarchically ordered networks has very high potential but, on the other hand, has not been explored to the level it deserves. In this project we demonstrate the application of the sonochemical approach for the formation of advanced carbon structures from initial graphite micron particles to resulting grapheme-like arrays-nanoribbons, mesoporous monolith, nanotubes.