

Incorporation of Hydrogen in Graphite by Mechanical Milling

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The incorporation of hydrogen in graphite by mechanical milling has been studied using a custom milling vessel designed for a Fritsch planetary mill. Incorporation was quantified by hydrogen pressure reduction, measured after milling, and by elemental analysis. The form of the incorporated hydrogen was studied using ir spectroscopy. The reversibility of the hydrogen incorporation was studied using thermogravimetric analysis and mass spectrometry of the gaseous products desorbed by heating milled samples. The design and capabilities of our custom milling vessel will also be described.