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Nano Patterning on Graphite by Ion-Beam Sputtering

Sun Mi Yoon, J.-S. Kim

Department of Physics, Sookmyung Women's University, Korea

Ion beam sputtering (IBS) by collision of energetic ions at surfaces is one of the representative methods for physical self-assembly. It is in spotlight as an easy tool to make nano structures in various sizes and shapes by controlling physical variables. We investigate nano patterning on graphite. We found well-ordered nano ripple patterns after sputtering under the oblique angle and mean wavelengths of these ripples could be controlled as ion fluence increases from sub-10 nm to 80 nm. Each nano ripple is terminated by nano buds, which look like a cotton bud. We also examined the formation of various patterns on graphite by sputtering during swinging the sample at a constant angular velocity that have been never reported.

Keywords: HOPG, Graqphite, Sputtering, Nano patterning