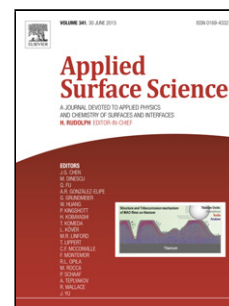


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Title: Spatially Resolved Nanostructural Transformation in Graphite under Femtosecond Laser Irradiation

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- Polycrystalline graphite was irradiated with a high power fs (IR) laser
- Presence of a diamond peak was detected by synchrotron XRD
- XPS and Raman showed in-depth sp^3 % increase at tens of nm below the surface
- sp^3 % is increasing with laser power density but it is independent of photon absorption rate
- Graphite crystallite size locally increase at tens of nanometers below the irradiated spots

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