

Abstract Submitted
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Production of Hyper-Doped Silicon at Greater than One Atmosphere of Sulfur Hexafluoride DANIEL WEISZ, JOHN TESTERMAN, RENI AYACHITULA, KIMBERLY DE LA HARPE, United States Air Force Academy, LASER AND OPTICS RESEARCH CENTER TEAM — We demonstrate the successful processing of sulfur-hyper-doped silicon using a nanosecond-pulsed laser in the presence of sulfur hexafluoride at pressures greater than one atmosphere. At these pressures, microstructures that form on the surface contain comparable sulfur content as samples processed traditionally at pressures less than 1 atm but require less energy to form. Samples with these structures were verified to have enhanced absorption into the infrared spectrum making them of interest for solar cell and infrared detection technologies.

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