

Abstract Submitted  
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**High Pressure Processing of Hyper-doped Silicon**<sup>1</sup> JOHN TESTERMAN, DANIEL WEISZ, KIMBERLY DE LA HARPE, RAJANI AYACHITULA, United States Air Force Academy, UNITED STATES AIR FORCE ACADEMY TEAM — We demonstrate the successful processing of sulfur-hyperdoped silicon using a nanosecond-pulsed laser in the presence of sulfur hexafluoride at pressures greater than one atmosphere. Processing at these pressures resulted in surface microstructures with sulfur content comparable to samples processed traditionally at atmospheric pressure. These structures were verified to have enhanced absorption into the infrared spectrum, characteristic of black silicon and of interest for solar and infrared detection technologies.

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