BLACK SILICON

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Introduction

irradiate with 100 fs 10 kJ/m² laser pulses
Introduction
Introduction

20 µm
Introduction
Conditions for formation
Conditions for formation

![Graph showing the relationship between average spike height (µm) and incident fluence (kJ/m²).]
Conditions for formation

pulse duration dependence

![Graph showing the dependence of average spike height on pulse duration. The x-axis represents pulse duration (ps) ranging from 0.01 to 100, and the y-axis represents average spike height (µm) ranging from 0 to 60. The graph shows a decreasing trend as pulse duration increases.]
Mechanism
Mechanism
Mechanism
Mechanism
Light absorption

Reflectivity vs. Wavelength (nm) for normal silicon.
Light absorption

Reflectivity vs. Wavelength (nm)

- Normal Silicon
- Black Silicon
Summary

- Novel technique for producing spikes
- Unity light absorption
- Luminescence?
- Field emission?
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For a copy of this talk and additional information, see:

http://mazur-www.harvard.edu
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