

boron atoms."&gt;



Home About Us Contact Us View Cart My Account FAQ

username

LOGIN

New Account »  
Forgot Password?

boron



Advanced  
Search »

Ads by Google

### Stop Carbon Monoxide

Fix your home's performance problem The Home

Performance Retrofitters.

[www.sustainablespace.com](http://www.sustainablespace.com)

### In Floor Radiant Heat

95% Efficient; Greater SF Bay Area SF, Oakland, Marin, Sonoma, Napa

[www.bayhydronic.com](http://www.bayhydronic.com)

### Solar Hot Water Systems

Custom Solar Power Installation. Request Your Free Estimate Online!

[www.SuntrekSolar.com](http://www.SuntrekSolar.com)

### Temperature Sensors

Distributor of Temperature Sensors More Components. Ship Same Day.

[www.digikey.com](http://www.digikey.com)

Chemistry ▾ Inorganic Chemistry

## Promising Thermal Source of Boron Atoms

Authors: [J. Harper](#); [C. W. Larson](#); [AIR FORCE RESEARCH LAB EDWARDS AFB CA SPACE AND MISSILE PROPULSION DIV](#)

**Abstract:** A "cannon" design has been tested as a high flux thermal source of pure boron atoms. Boron is packed into a central channel of a 1/4 in graphite rod with the open end pointed towards the deposition substrate. A refractory metal sheath surrounds and heats the carbon as the applied current increases. Successful argon matrix isolation experiments indicate that the boron cannon will be an effective way to produce pure boron atoms. Products from previous thermal techniques that used carbon as a container in which to heat boron, have been heavily contaminated with carbon and boron/carbon compounds. The cannon design exploits the difference in vapor pressures of boron and carbon at a given temperature. The design, operating temperature, and procedure for heating the cannon are still being optimized. Because of the higher flux of boron, hard to detect species such as B<sub>2</sub>C, are more easily observed. Experiments also confirm that carbon monoxide (CO) is a thorough scavenger of boron atoms. When large amounts of CO are present, BCO and clusters of these molecules are the only products. This procedure could be developed into a diagnostic for the presence of B atoms.

**Limitations:** ✓ APPROVED FOR PUBLIC RELEASE  
**Description:** Technical paper  
**Pages:** 19  
**Report Date:** 02 JUN 1999  
**Report Number:** A895804

Keywords relating to this report:

- ✦ [ATOMS](#)
- ✦ [BORON](#)
- ✦ [BORON COMPOUNDS](#)
- ✦ [FLUX\(RATE\)](#)
- ✦ [HEATING](#)
- ✦ [MATERIAL FORMING](#)

Adobe PDF - \$8.95

Printed Format - \$23.95

ADD TO CART

Please check the box for the format you wish to order.

[Shipping Terms](#)  
[About Electronic Delivery](#)

[Email This Abstract](#)

[« Back to search](#)

[Home](#) | [About Us](#) | [Contact Us](#) | [View Cart](#) | [Customer Service](#) | [Shipping Terms](#) | [Advanced Search](#) | [Privacy Policy](#) | [Restrictions on PDF Usage](#)

© 2001-2008 Storming Media LLC. All rights reserved.