



US007786455B2

(12) **United States Patent**  
**Smith**

(10) **Patent No.:** **US 7,786,455 B2**  
(45) **Date of Patent:** **Aug. 31, 2010**

- (54) **LASER-DRIVEN LIGHT SOURCE**
- (75) **Inventor:** Donald K. Smith, Belmont, MA (US)
- (73) **Assignee:** Energetiq Technology, Inc., Woburn, MA (US)
- (\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 820 days.
- (21) **Appl. No.:** 11/695,348
- (22) **Filed:** Apr. 2, 2007

(65) **Prior Publication Data**  
US 2007/0228300 A1 Oct. 4, 2007

**Related U.S. Application Data**  
(63) Continuation-in-part of application No. 11/395,523, filed on Mar. 31, 2006, now Pat. No. 7,435,982.

(51) **Int. Cl.**  
*H05B 31/26* (2006.01)  
*G01J 3/10* (2006.01)  
*G21G 4/00* (2006.01)  
*H01J 61/28* (2006.01)

(52) **U.S. Cl.** ..... 250/493.1; 250/504 R; 315/111.21; 315/111.71; 315/111.91; 313/231.31; 313/231.41; 313/231.71

(58) **Field of Classification Search** ..... 250/423 R, 250/423 P, 424, 426, 494.1, 493.1, 504 R, 250/504 H; 315/111.21, 111.71, 111.91; 313/231.31, 231.41, 231.61, 231.71, 631, 313/632, 633

See application file for complete search history.

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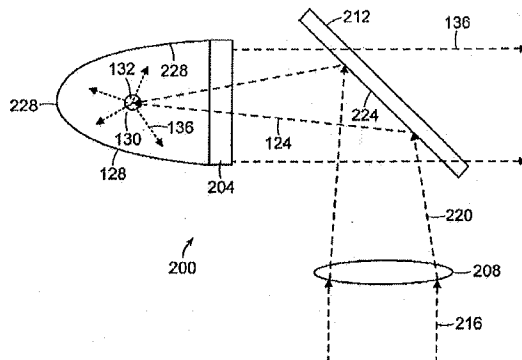
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(57) **ABSTRACT**

An apparatus for producing light includes a chamber and an ignition source that ionizes a gas within the chamber. The apparatus also includes at least one laser that provides energy to the ionized gas within the chamber to produce a high brightness light. The laser can provide a substantially continuous amount of energy to the ionized gas to generate a substantially continuous high brightness light.

**43 Claims, 8 Drawing Sheets**



ASML 1316

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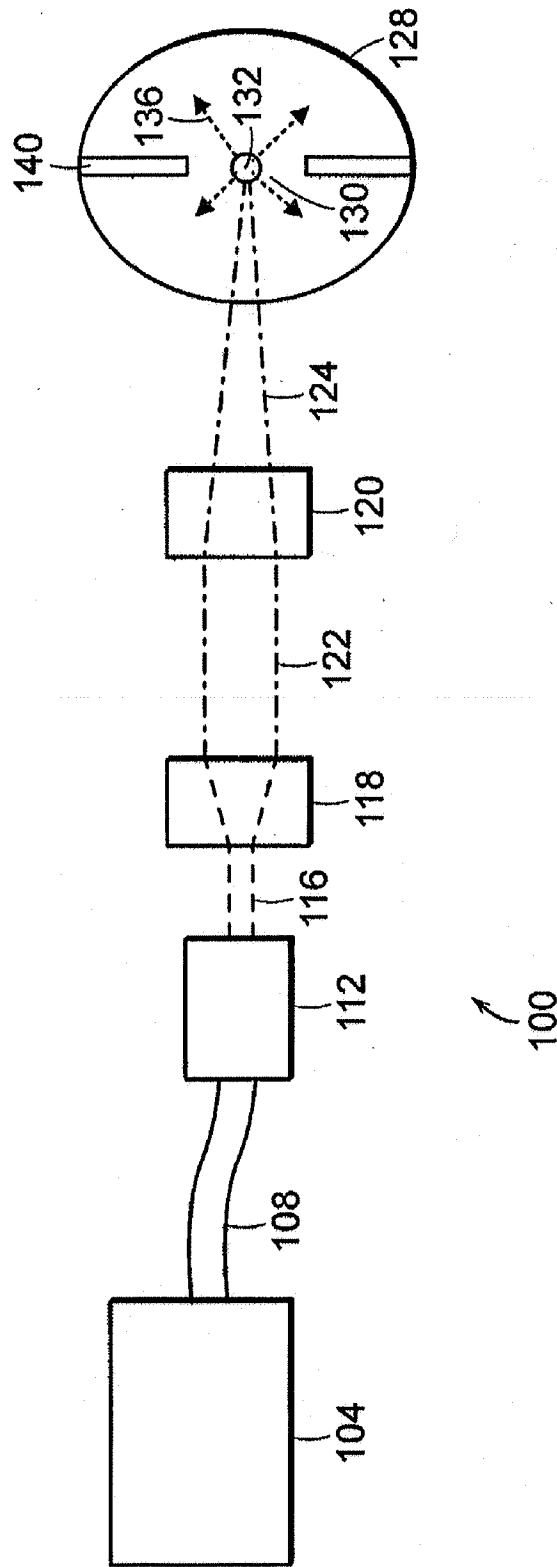


FIG. 1

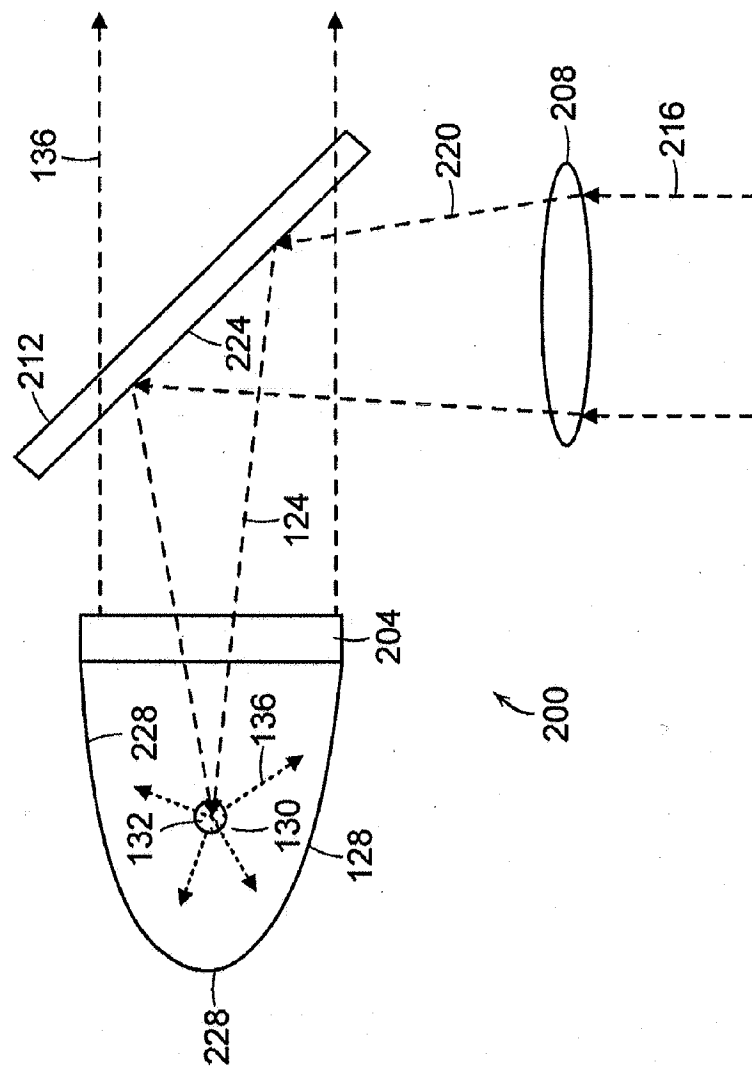


FIG. 2

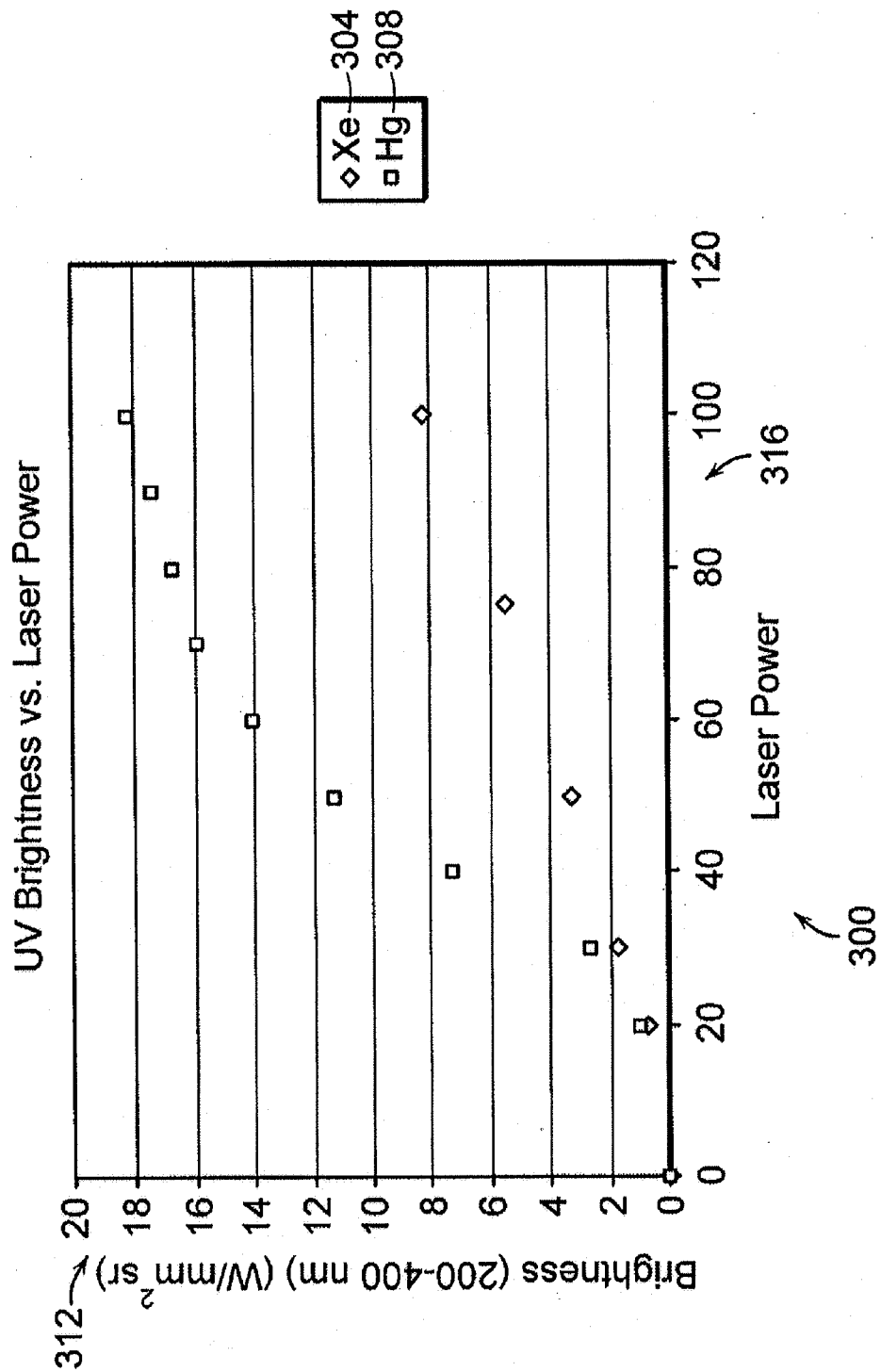


FIG. 3

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