

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number
WO 2004/054047 A2

(51) International Patent Classification⁷: **H01S**

(21) International Application Number:
PCT/US2003/022629

(22) International Filing Date: 17 July 2003 (17.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/431,273 6 December 2002 (06.12.2002) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 60/431,273 (CIP)
Filed on 6 December 2002 (06.12.2002)

(71) Applicant (for all designated States except US):
CHEVRON U.S.A. INC. [US/US]; 6001 Bollinger Canyon Road, Building T, 3rd Floor, San Ramon, CA 95583-4289 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DAHL, Jeremy, E.**

[US/US]; 977 Cottrell Way, Palo Alto, CA 94305 (US).
CARLSON, Robert, M. [US/US]; 3775 Roblar Road, Petaluma, CA 94952 (US). **LIU, Shenggao** [CN/US]; 536 Rosewood Lane, Hercules, CA 94547 (US).

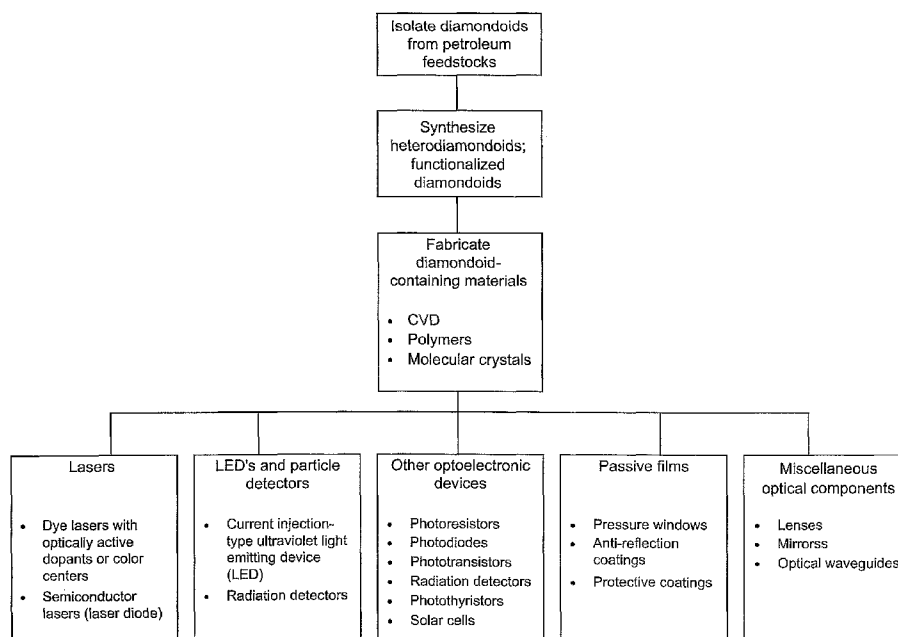
(74) Agents: **BENZ, William, H.** et al.; Burns, Doane, Swecker and Mathis LLP, P.O. Box 1404, Alexandria, VA 22321-1404 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, NI, TD, TG).

[Continued on next page]

(54) Title: OPTICAL USES OF DIAMONDROID-CONTAINING MATERIALS



(57) Abstract: Novel optical devices based on diamondoid-containing materials are disclosed. Materials that may be fabricated from diamondoids included diamondoid nucleated CVD films, diamondoid-containing CVD films, molecular crystals, and polymerized materials. Devices that may be fabricated from the diamondoid-containing materials disclosed herein include solid state dye lasers, semiconductor lasers, light emitting diodes, photodetectors, photoresistors, phototransistors, photovoltaic cells, solar cells, anti-reflection coatings, lenses, mirrors, pressure windows, optical waveguides, and particle and radiation detectors.

WO 2004/054047 A2



Published:

— without international search report and to be republished
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.