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| <b>(51) International Patent Classification <sup>7</sup> :</b><br><b>C09K 11/59, 11/08, 11/61, 11/88, 11/62, H01J 1/63</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 00/56837</b><br><b>(43) International Publication Date:</b> 28 September 2000 (28.09.00)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>(21) International Application Number:</b> PCT/US00/04919<br><b>(22) International Filing Date:</b> 25 February 2000 (25.02.00)<br><b>(30) Priority Data:</b><br>09/272,912 19 March 1999 (19.03.99) US<br><b>(71) Applicant:</b> RUTGERS, THE STATE UNIVERSITY [US/US];<br>Old Queens, Somerset Street, New Brunswick, NJ 08903 (US).<br><b>(72) Inventors:</b> RIMAN, Richard, E.; 10 Monroe Avenue, Belle Mead, NJ 08502 (US). BALLATO, John; 811 Issaquenna Trail, Apt. 1802, Central, SC 29630 (US).<br><b>(74) Agents:</b> BUTCH, Peter, J., III et al.; Synnestvedt & Lechner LLC, 2600 Aramark Tower, 1101 Market Street, Philadelphia, PA 19107-2950 (US). |           | <b>(81) Designated States:</b> AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).<br><br><b>Published</b><br><i>With international search report.</i><br><i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> |
| <b>(54) Title:</b> RARE EARTH DOPED HOST MATERIALS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>(57) Abstract</b><br><br>A rare earth element doped composition having a dopant concentration of up to about 60 mole percent of one or more rare earth elements selected from Tb, Dy, Ho, Er, Tm, Yb and Lu, wherein the composition is optically transparent to wavelengths at which excitation, fluorescence or luminescence of the rare earth elements occur. Method for making the compositions, composite materials having dispersed therein the compositions and luminescent devices containing optical or acoustical elements formed from the composite materials are also disclosed.                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |