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(21) International Application Number: PCT/US96/09434 (22) International Filing Date: 6 June 1996 (06.06.96) (30) Priority Data: 477,797 7 June 1995 (07.06.95) US (71) Applicant: ADVANCED TECHNOLOGY MATERIALS, INC. [US/US]; 7 Commerce Drive, Danbury, CT 06810- 4169 (US). (72) Inventors: KIRLIN, Peter, S.; 11 Kingswood Drive #72, Bethel, CT 06801 (US). BROWN, Duncan, W.; 60 Teapot Hill Road, Wilton, CT 06897 (US). BAUM, Thomas, W.; 2 Handol Lane, New Fairfield, CT 06812 (US). VAARTSTRA, Brian, A.; 3417 Braden Lane, Nampa, ID 83653 (US). GARDINER, Robin, A.; 23 Knollwood Drive, Bethel, CT 06801 (US). (74) Agent: HULTQUIST, Steven, J.; P.O. Box 14329, Research Triangle Park, NC 27709 (US).		(81) Designated States: CA, JP, KR, <u>SC</u> , European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>
(54) Title: METAL COMPLEX SOURCE REAGENTS FOR CHEMICAL VAPOR DEPOSITION (57) Abstract A metalorganic complex of the formula MA_yX, wherein M is a y-valent metal; A is a monodentate or multidentate organic ligand coordinated to M which allows complexing of MA_y with X; y is an integer having a value of 2, 3 or 4; each of the A ligands may be the same or different; and X is a monodentate or multidentate ligand coordinated to M and containing one or more atoms independently selected from the group consisting of atoms of the elements C, N, H, S, O and F. The metal M may be selected from the group consisting of Cu, Ba, Sr, La, Nd, Ce, Pr, Sm, Eu, Th, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Bi, Ti, Y, Pb, Ni, Pd, Pt, Al, Ga, In, Ag, Au, Co, Rh, Ir, Fe, Ru, Sn, Li, Na, K, Rb, Cs, Ca, Mg, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, and W. A may be selected from the group consisting of β-diketonates and their sulfur and nitrogen analogs, β-ketoesters and their sulfur and nitrogen analogs, cyclopentadienyls, alkyls, perfluoroalkyls, alkoxides, perfluoroalkoxides, and Schiff bases. X may for example comprise a ligand such as tetraglyme, tetrahydrofuran, bipyridine, crown ether, or thioether.		