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(21) International Application Number: PCT/US99/07339 (22) International Filing Date: 2 April 1999 (02.04.99) (30) Priority Data: 09/093,406 8 June 1998 (08.06.98) US (71) Applicant: LOCKHEED MARTIN ENERGY RESEARCH CORPORATION [US/US]; Bethel Valley Road, P.O. Box 2008, Oak Ridge, TN 37831-6255 (US). (72) Inventors: KLETT, James, W.; 10073 Delle Meade Drive, Knoxville, TN 37931 (US). BURCHELL, Timothy, D.; 109 Greywood Place, Oak Ridge, TN 37830 (US). (74) Agents: NELSON, Gregory, A. et al.; Quarles & Brady LLP, 4th floor, 222 Lakeview Avenue, P.O. Box 3188, West Palm Beach, FL 33402-3188 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, 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). Published <i>With international search report.</i>
(54) Title: PITCH-BASED CARBON FOAM HEAT SINK WITH PHASE CHANGE MATERIAL		
(57) Abstract A process for producing a carbon foam heat sink is disclosed which obviates the need for conventional oxidative stabilization. The process employs mesophase or isotropic pitch and a simplified process using a single mold. The foam has a relatively uniform distribution of pore sizes and a highly aligned graphic structure in the struts. The foam material can be made into a composite which is useful in high temperature sandwich panels for both thermal and structural applications. The foam is encased and filled with a phase change material to provide a very efficient heat sink device.		