

Title (en)

Method for making solid composite material particularly metal matrix with ceramic dispersates.

Title (de)

Verfahren zur Herstellung von Verbundwerkstoff, insbesondere eine Metallmatrix mit dispergierten Keramikteilchen.

Title (fr)

Procédé d'obtention d'un matériau composite, particulièrement une matrice métallique avec une dispersion céramique.

Publication

EP 0346771 A1 19891220 (EN)

Application

EP 89110482 A 19890609

Priority

- US 20808488 A 19880617
- US 20808688 A 19880617

Abstract (en)

Composites of materials in which the matrix material does not spontaneously or readily wet the disperse phase and in which the volume fraction of the disperse phase is less than that formed in a packed bed of dispersate particles can be made effectively by an indirect method of infiltrating a packed bed of dispersate particles, using pressure or other mechanical force as needed to overcome poor wetting and form an intermediate concentrated composite. The concentrated composite is then mixed with additional matrix-forming material to produce the finally desired composite. The technique is particularly valuable for composites with ceramic dispersates and metal or alloy matrixes. When the matrix is predominantly aluminum and the dispersates are predominantly silicon carbide, a barrier coating of a material that retards reaction between silicon carbide and alumina is useful.

IPC 1-7

C22C 1/10

IPC 8 full level

C22C 1/10 (2006.01); **C22C 32/00** (2006.01)

CPC (source: EP KR)

C22C 1/04 (2013.01 - KR); **C22C 1/1021** (2023.01 - EP); **C22C 1/1036** (2013.01 - EP); **C22C 32/00** (2013.01 - EP); **C22C 32/0052** (2013.01 - EP); **C22C 32/0057** (2013.01 - EP); **C22C 32/0063** (2013.01 - EP)

Citation (search report)

- [X] EP 0104682 A1 19840404 - DOW CHEMICAL CO [US]
- [YD] EP 0256600 A2 19880224 - NUOVA SAMIN SPA [IT]
- [Y] EP 0150519 A1 19850807 - TNO [NL]
- [Y] US 4741973 A 19880503 - CONDIT DAVID A [US], et al
- [Y] US 2793949 A 19570528 - GEORGES IMICH
- [AD] JOURNAL OF METALS, February 1988, pages 12-19, New York, US; A. MORTENSEN et al.: "Solidification processing of metal-matrix composites"
- [AD] JOURNAL OF MATERIALS SCIENCE, vol. 13, no. 1, January 1978, pages 329-335, Chapman and Hall Ltd; B.C. PAI et al.: "Production of cast aluminium-graphite particle composites using a pellet method"

Cited by

US5441697A; EP0671478A3; US6635357B2; US5381850A; TR25639A; EP0577381A1; US5336291A; EP2954083A4; US9945012B2; WO9117276A3

Designated contracting state (EPC)

AT BE CH DE ES FR GB IT LI NL SE

DOCDB simple family (publication)

EP 0346771 A1 19891220; **EP 0346771 B1 19941026**; AT E113317 T1 19941115; AU 3648789 A 19891221; AU 616275 B2 19911024; BR 8902947 A 19900206; DE 68918990 D1 19941201; DE 68918990 T2 19950727; DK 297289 A 19891218; DK 297289 D0 19890615; KR 910001078 A 19910130; NO 174007 B 19931122; NO 174007 C 19940302; NO 892404 D0 19890612; NO 892404 L 19891218

DOCDB simple family (application)

EP 89110482 A 19890609; AT 89110482 T 19890609; AU 3648789 A 19890616; BR 8902947 A 19890619; DE 68918990 T 19890609; DK 297289 A 19890615; KR 890008413 A 19890616; NO 892404 A 19890612