Title (en)

PROCESS FOR ADDITIVE MANUFACTURING OF PARTS BY MELTING OR SINTERING PARTICLES OF POWDER(S) USING A HIGH-ENERGY BEAM WITH POWDERS ADAPTED TO THE TARGETED PROCESS/MATERIAL PAIR

Title (de)

VERFAHREN ZUR HERSTELLUNG VON ZUSATZSTOFFEN FÜR TEILE DURCH SCHMELZEN ODER SINTERN VON PARTIKELN AUS PULVER(N) MIT EINEM HOCHENERGIESTRAHL MIT AN DAS ANGEZIELTE PROZESS-/MATERIALPAAR ANGEPASSTEN PULVERN

Title (fr)

PROCEDE DE FABRICATION ADDITIVE DE PIECES PAR FUSION OU FRITTAGE DE PARTICULES DE POUDRE(S) AU MOYEN D'UN FAISCEAU DE HAUTE ENERGIE AVEC DES POUDRES ADAPTEES AU COUPLE PROCEDE/MATERIAU VISE

Publication

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Application

EP 14790118 A 20140630

Priority

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- FR 2014051675 W 20140630

Abstract (en)

[origin: WO2015001241A2] The invention relates to a process for rapid manufacturing of parts made of a metallic, intermetallic or ceramic material, made of a ceramic matrix composite or made of a metal matrix composite with discontinuous reinforcement, especially with ceramic or intermetallic reinforcement, by melting or sintering particles of powder(s) using a high-energy beam. Characteristically, the powder used is a single powder, the particles of which have a sphericity of between 0.8 and 1.0 and a shape factor of between 1 and √2, each powder particle having a substantially identical mean composition and the particle size distribution of the particles of said powder is narrowed about the mean diameter d50% value so that: (d90% - d50%) / d50% ≤ 0.66 and (d50% - d10%) / d50% ≤ 0.33 with a "span" (d90% - d10%) / d50 % < 1.00. Application to the rapid manufacturing of parts by selective laser melting (SLM) or by selective laser sintering (SLS) or else by direct metal deposition (DMD). Such powders are adapted to the targeted process/material pair.

IPC 8 full level

B22F 1/052 (2022.01); **B22F 1/065** (2022.01); **B22F 3/105** (2006.01); **B22F 9/04** (2006.01); **B22F 9/08** (2006.01); **B29C 67/00** (2006.01); **B33Y 70/00** (2020.01); **C22C 1/04** (2006.01); **C22C 33/02** (2006.01); B22F 1/148 (2022.01)

CPC (source: EP RU US)

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