Development of functionally graded materials for space applications

NOTATIONS

Al - Alulminum
Al₂O₃ – Alumina
Al (OH)₃ – Aluminium Hydroxide
ASTM – American Society for Testing of Materials
C C – Centrifugal Casting
C T E – Coefficient of Thermal Expansion
C V D – Chemical Vapour Deposition
D – Particle diameter
Δt – Relative time
dx/dt - velocity m/s
ρ - Density gm/cc
Δw – Weight loss, mg
EC120 – Eurocopter
E D M – Electrical Discharge Cutting Machine
FGM – Functionally Graded Materials
G – A number
I G B T – Insulated gate bipolar transistor
I C E – Intercity express
MMC – Metal matrix composites
MPY – Morphology
1N, 1 5N, 2N – Normality in HCl Solution
η - Viscosity, stokes
P/M – Powder metallurgy
PCB – Printed circuit board
Q – Wear rate mm³/km
Q/I – Quasi- isotropic
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RKR – Ritchie – Knott – Rice
SiC – Silicon carbide
Si – Silicon
SEM – Scanning electron microscope
Ti – Titanium
TiB – Titanium boride
TiC – Titanium chloride
UTM – Universal testing machine
UTS – Ultimate tensile strength
Vf – volume fraction