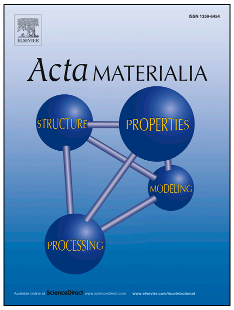

Measurement of Anisotropic Coefficients of Thermal Expansion of SAC305 Solder Using Surface Strains of Single Grain with Arbitrary Orientation

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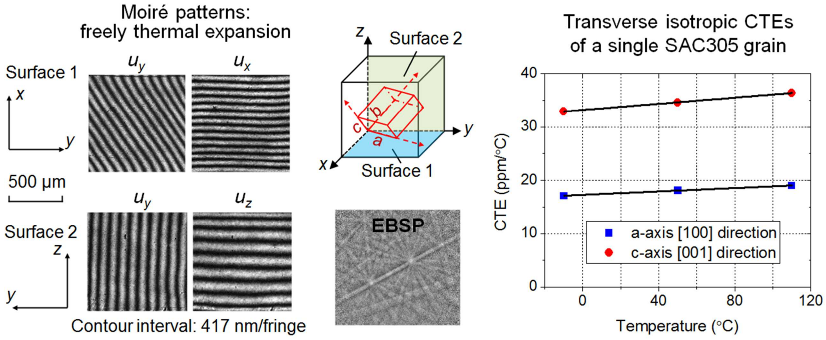
Moiré patterns:
freely thermal expansion
Surface 1
u_y
u_x
x
y
500 μm
Surface 2
u_y
u_z
z
y
Contour interval: 417 nm/fringe
z
Surface 2
y
x
c
b
a
Surface 1
EBSP
Transverse isotropic CTEs
of a single SAC305 grain
CTE (ppm/°C)
40
30
20
10
0
0
40
80
120
Temperature (°C)
a-axis [100] direction
c-axis [001] direction