A novel heat-resistant resin-based adhesive for high-temperature alloy connection and repair

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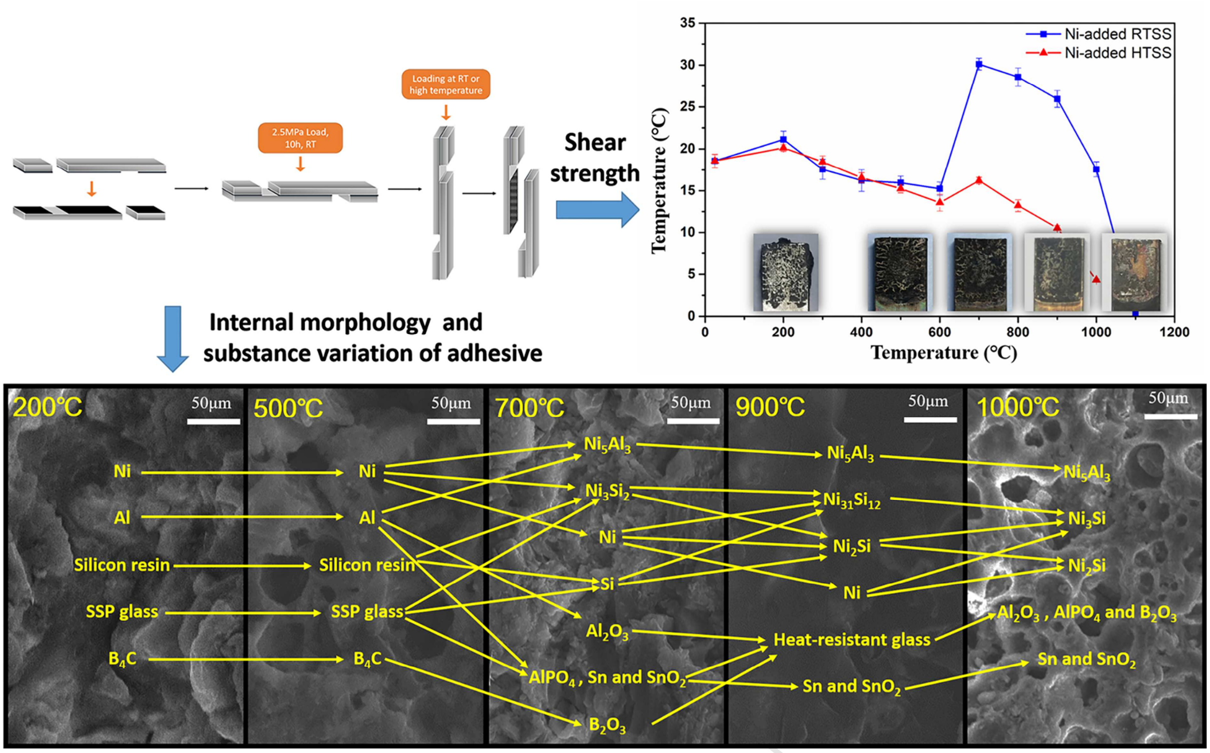
2.5MPa Load, 10h, RT
Loading at RT or high temperature
Shear strength
Internal morphology and substance variation of adhesive
Ni-added RTSS
Ni-added HTSS
Temperature (℃)
0
5
10
15
20
25
30
35
0
200
400
600
800
1000
1200
Temperature (℃)
200℃
500℃
700℃
900℃
1000℃
50μm
Ni
Al
Silicon resin
SSP glass
B_4C
Ni_5Al_3
Ni_3Si_2
Si
Al_2O_3
$AlPO_4$, Sn and SnO_2
B_2O_3
$Ni_{31}Si_{12}$
Ni_2Si
Heat-resistant glass
Sn and SnO_2
Ni_3Si
Al_2O_3, $AlPO_4$ and B_2O_3