

Materials System	Status	Development Needs	Approach
Organo-precursor	<ul style="list-style-type: none"> •Promising initial results 	<ul style="list-style-type: none"> •CTE Match •Chemical stability •Higher density 	<ul style="list-style-type: none"> •Broader compositional selection •Composite approach •Functionally graded
Brazes	Limited evaluation for SOFCs	<ul style="list-style-type: none"> •Process compatibility, i.e., brazing temperature and environment •Long-term chemical compatibility and stability •Low cost stable compositions 	<ul style="list-style-type: none"> •Literature review •Design for electrical insulation •Ni-Co alloys •Bulk amorphous metals

Materials System	Status	Development Needs	Approach
Glass-ceramic	<ul style="list-style-type: none"> • Good initial performance • Most mature knowledge base exists • Long-term, chemical and mechanical issues 	<ul style="list-style-type: none"> • CTE Match • Interface chemical compatibility 	<ul style="list-style-type: none"> • Broaden compositional selection (phosphates, non-oxides) • Composite approach • Functionally graded seals • Microcrack strain accommodation
Cements	<p>Currently inadequate for thermal cycling Limited experience</p>	<ul style="list-style-type: none"> • CTE Match • Interface chemical compatibility • Higher density • Processing/curing know-how • Environmental stability • Mechanical properties 	<ul style="list-style-type: none"> • Literature review • New compositions • Composite approach