New Electrolyte-Supported Planar SOFC Design with Via Interconnects

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A new planar SOFC design based on thin and mechanically flexible 3YSZ electrolyte with metal-filled via interconnects offers an unusual solution to thermal shock tolerance and cell electrical connection stability. Multiple cells on a thin (<20 μm) electrolyte support are connected in series using oxidation-resistant metal-filled vias. This architecture eliminates rigid interconnect joints – improving electrical connection stability and thermal cycling capability. Design considerations and recent stack results will be reviewed.