High Power Metal-Supported SOFCs for Electric Vehicle Range Extenders

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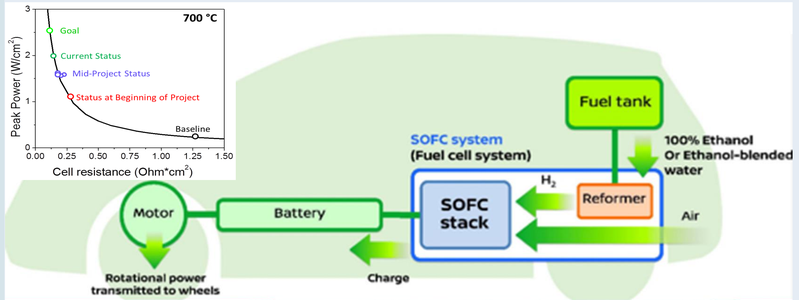
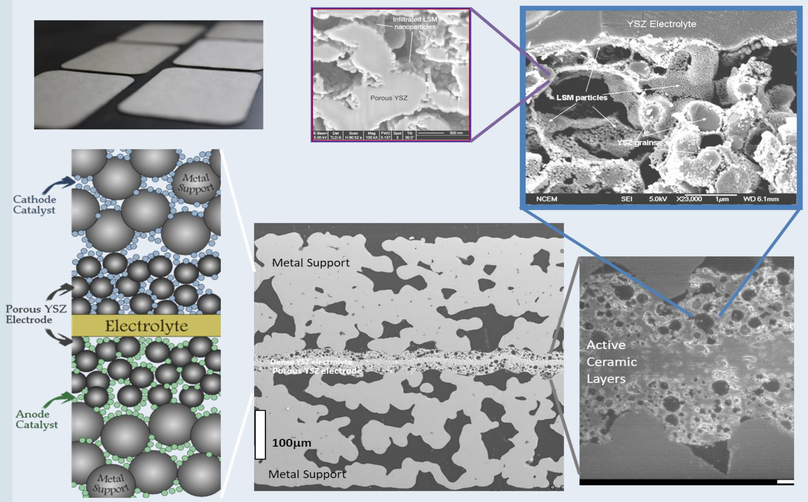
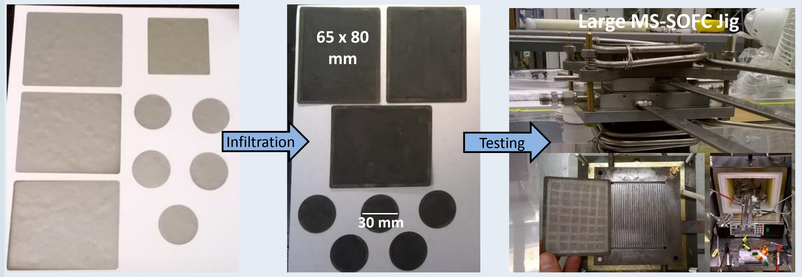
Nissan's SOFC-powered Vehicle



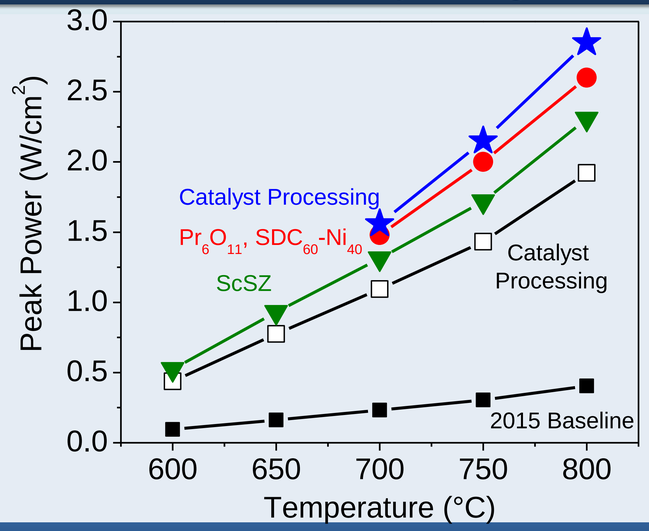
Symmetric MS-SOFC Architecture



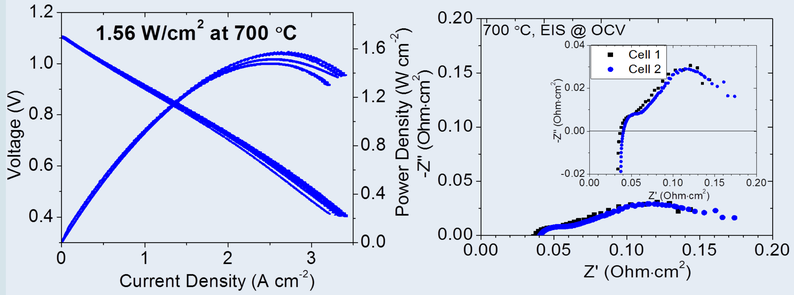
MS-SOFC Scalability



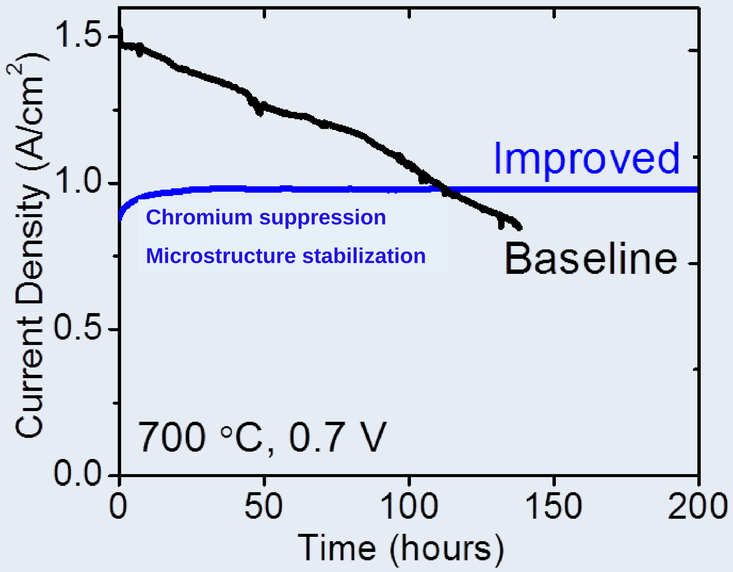
Power Density Progress



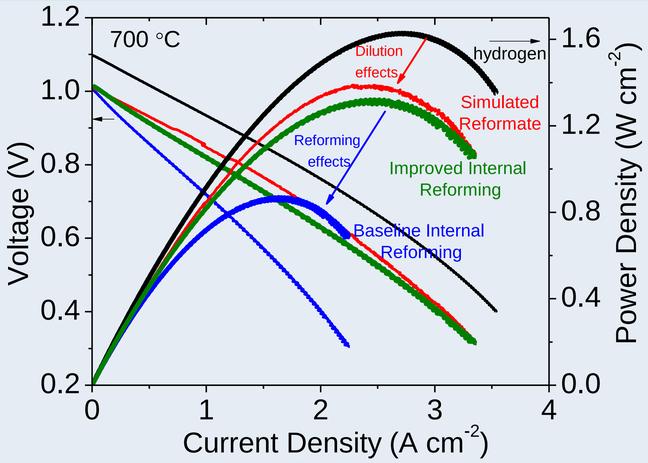
Performance Reproducibility



Durability



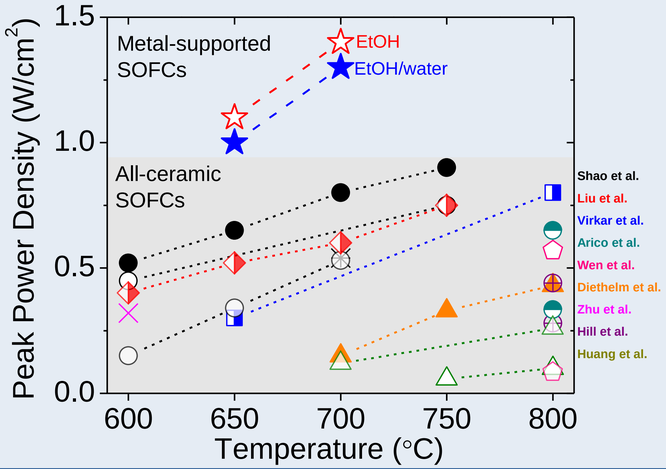
Internal Reforming of Ethanol



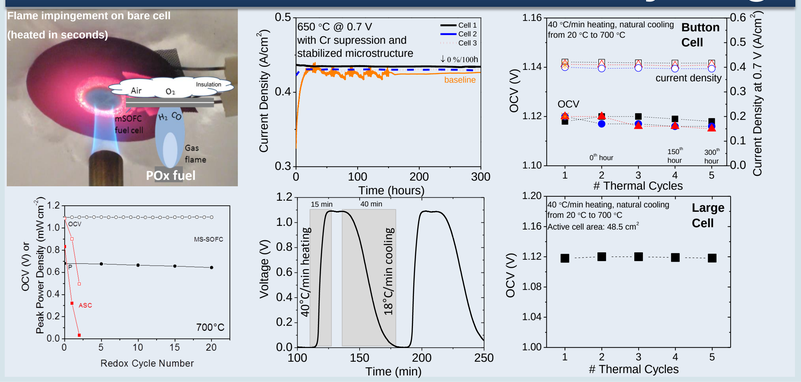
Simulated Reformate (externally reformed 45 vol.% EtOH/water)

Operation temperature	H2 mol %	CH4 mol %	CO mol %	CO2 mol %	H2O mol %
700 °C	52.3	1	11.8	9.9	25

Progress in Internal Reforming



Robust Thermal and Redox Cycling



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