

Solid Oxide Fuel Cell (SOFC) Systems for Power Generation Applications - N. Minh (General Electric Power Systems)

General Electric Power Systems (GEPS) has been developing solid oxide fuel cell (SOFC) systems for a number of power generation applications. The SOFC under development at GEPS is based on a planar design that incorporates thin-electrolyte anode-supported cells fabricated by tape calendaring and thin-foil metallic interconnects. Other features of the systems include a compact pre-reformer for processing hydrocarbon fuels and advanced thermal management and control subsystems. For 5-kW systems, the projected cost for the system when fully developed is about \$388/kW. Current activities have been focused on system design and analysis, stack technology development including design, performance and life improvements, fuel processing assessment and evaluation, and thermal management and control subsystem development. This paper summarizes and discusses certain key results obtained to date in these areas.