

## R&D for low temperature solid oxide fuel cells

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A Swedish-Chinese research framework has been established targeting for low temperature solid oxide fuel cells (LTSOFCs, 300 - 650°C) based on new material developments on electrolyte and electrodes. These new materials have been developed based on ceria-based composites, where the composite electrolytes have excellent ionic conductivity of 0.01 to 1  $\text{Scm}^{-1}$  at temperatures 400 to 650°C. Corresponding to the electrolytes, various new compatible electrode materials have been investigated, especially nickel-free oxides and copper-based compounds. These new electrolytes and electrodes were used and demonstrated performances between 100 to 1000  $\text{mWcm}^{-2}$  in the temperature range between 400 and 650°C. Based on these results overall engineering work on the LTSOFC technology, construction and stack has been widely carried out. This paper reports recent progress and results on the overall LTSOFC R&D.