Abstract

An SOEC module and an SOEC hydrogen generation device based on a multi-stack-core module are provided. Said device comprises a steam generator, a mixer, an air heater and a plurality of SOEC modules; each SOEC module comprises a heat preservation shell provided with a hot air module inlet, a hydrogen-containing mixed steam module inlet, an oxygen-rich air module outlet and a crude hydrogen module outlet, and a plurality of electrolysis cell stack cores arranged in the heat preservation shell; and each electrolysis cell stack core comprises a hot air single-stack inlet, a hydrogen-containing mixed steam single-stack inlet, an oxygen-rich air single-stack outlet and a crude hydrogen single-stack outlet.