

Table S1: SER TGA cycle with regeneration in steam and no reduction between cycles
(43H₂O/3H₂)

Step	Flow	Gas composition	Temperature	Time/rate
Reforming S/C = 3	875 ml/min	14/43/43 vol% CH ₄ /H ₂ O/N ₂	650°C	35min
Heating to regeneration temperature	500 ml/min	43/54/3 vol% H ₂ O/N ₂ /H ₂	650 to 850° C	9°C/min
Regeneration	500 ml/min	43/54/3 vol% H ₂ O/N ₂ /H ₂	850°C	3min
Cooling to reforming temperature	500 ml/min	95/5 vol% N ₂ /H ₂	850 to 650°C	3.5°C/min