Simulation of plastics gasification system combined with fuel cell

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The Wastes Integrated Gasification and Fuel Cell (W-IGFC) system is a promising technology for effective use of waste plastics. Simulations of the waste plastics gasification system combined with Solid Oxide Fuel Cell (SOFC) were carried out to investigate the effect of the operating conditions (steam to carbon ratio and reforming temperature) at the steam reformer on the system efficiency. The system efficiency decreased as the S/C ratio increased. Although the system efficiency increased as the reforming temperature increased due to the increase in the flow rate of H_2 and CO generated from the reformer, reforming temperature had little influence on the system efficiency at S/C ratio above 6.