# 연료전지-가스터빈 하이브리드 시스템 개발

연료전지 하이브리드 시스템 분류(8)

2014. 하반기 IP (8)



### 연료전지 하이브리드 시스템

### Fuel Cell Hybrid System

#### · Direct thermal coupling scheme

- Pressurized SOFC + Brayton cycle (GT)
- Pressurized SOFC + Brayton cycle (GT)
  - + Cheng cycle
- Non-Pressurized SOFC + Brayton cycle (GT)
- SOFC + PEMFC

#### · Indirect thermal coupling scheme

- SOFC + Brayton (or Rankine) cycle
- SOFC + Thermophotovoltaic(TPV) unit
- SOFC + Absorption refrigeration machine
  SOFC + CHP

- Advanced integration scheme
  - SOFC + MHR + Helium turbine + GT
  - SOFC + coal gasification + GT + ST
  - SOFC + HAT(humid air turbine)

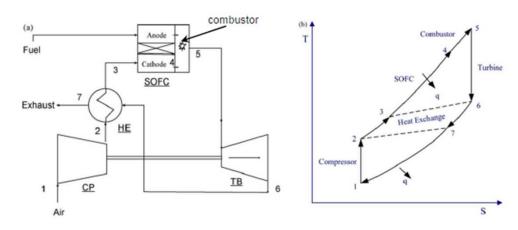
#### Fuel coupling scheme

- SOFC + hydrocarbon fuel ATR
- Biomass gasification + SOFC
- Reversible SOFC + PV

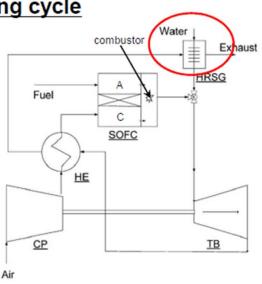


## 연료전지 하이브리드 시스템 : Direct thermal coupling

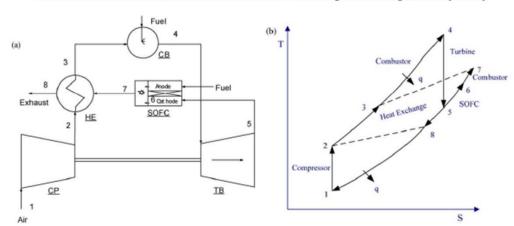
Pressurized SOFC + Brayton cycle (GT)



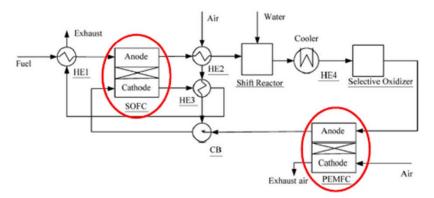
Pressurized SOFC + Brayton cycle
 + Cheng cycle



Non-Pressurized SOFC + Brayton cycle (GT)

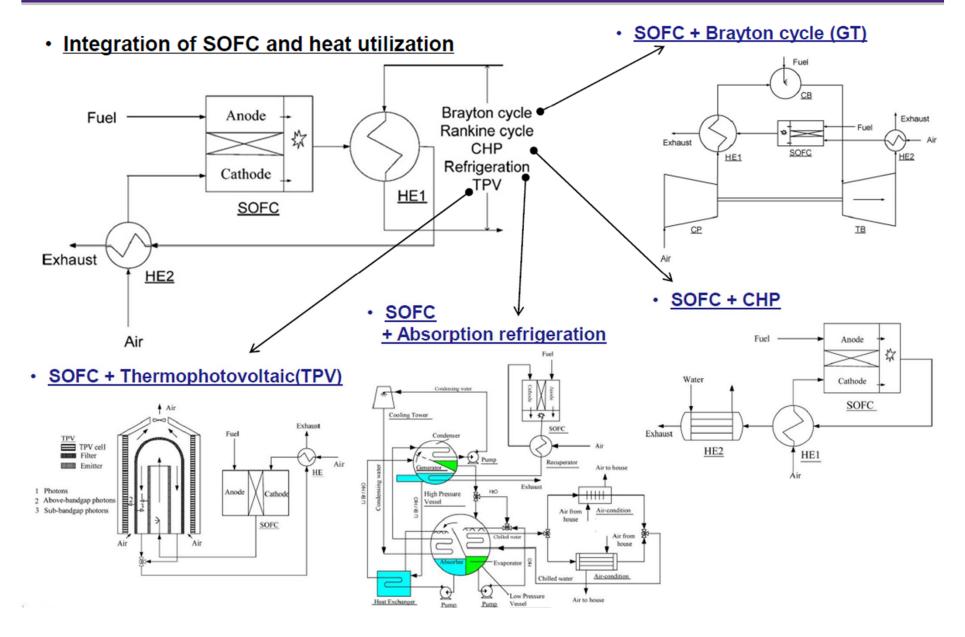


SOFC + PEM fuel cell





### 연료전지 하이브리드 시스템: Indirect thermal coupling





# 연료전지 아이브리드 시스템 : Advanced concept

• SOFC + Coal gasification + GT + ST

