



### 3.1 기술개발동향 :비교



Company	JAEA	GA	PBMR/ Westinghouse	AREVA
Country	Japan	USA	SA/USA	France
Reactor	GTHT300	MHR-GT	PBMR	ANTARES
Power	600	550-600	500	600
In/Out He Temp (°C)	589/850	490/950	350/950	400/850
Cycle Configuration	Direct PCS, series indirect HPP	Direct PCS, parallel indirect HPP	Indirect, series HPP and PCS	Indirect, parallel HPP and PCS
PCS	Brayton	Brayton	Brayton	Rankine
HPP	SI	HTE/SI	HyS/HTE	HTE/SI
IHX	Helical coil Shell & Tube	Single stage PCHE	Two stage PCHE	PCS: Helical coil S&T Process: PCHE or fin plate

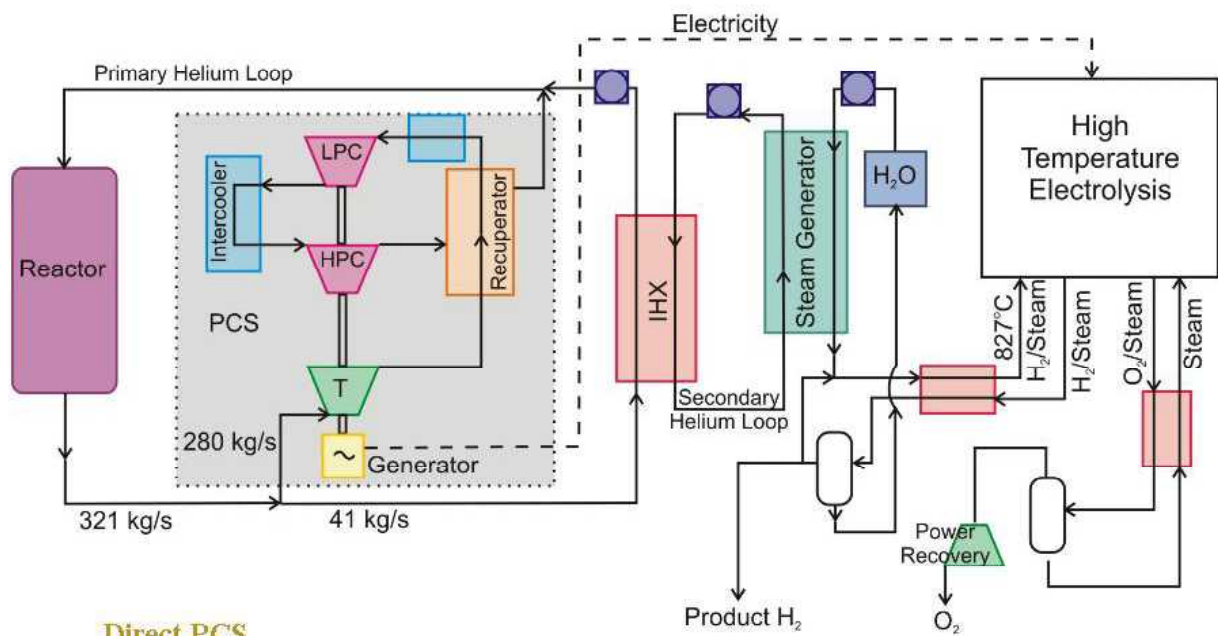
출처 : Nuclear heat for hydrogen production: Coupling a very high/high temperature reactor to a hydrogen production plant 2008, Rachael Elder, Ray Allen



## 3.1 기술개발동향 :MHR



### HTE-based H<sub>2</sub>-MHR

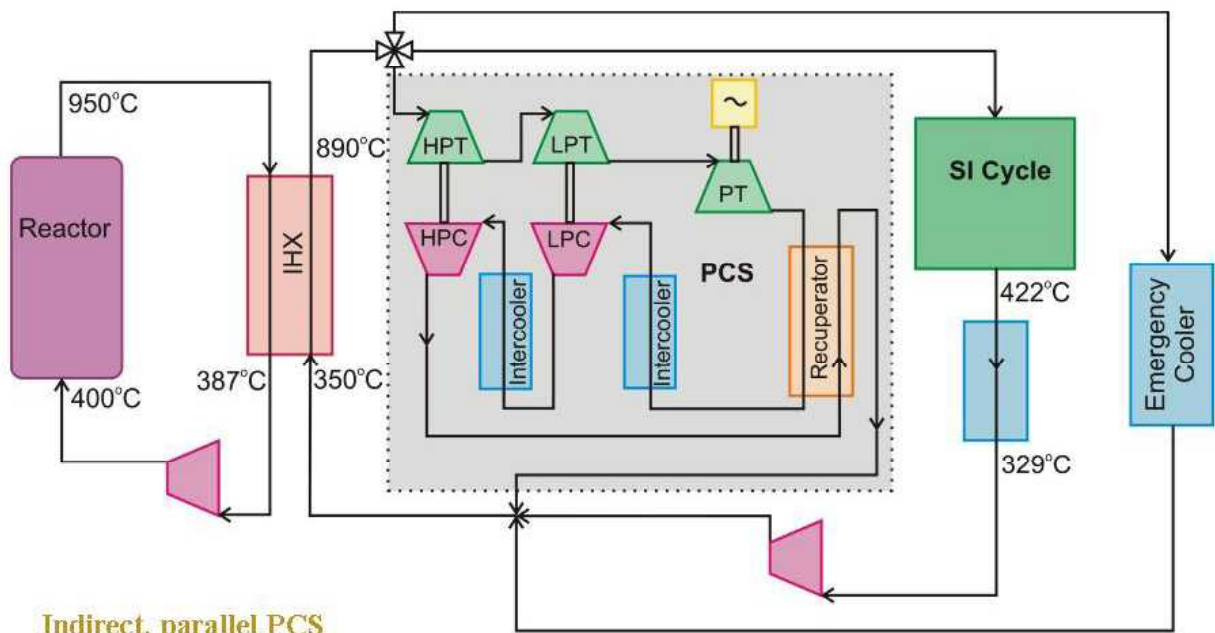


Direct PCS  
Parallel, Indirect HPP

Richards *et al.* 2006



# 유럽 : SI



Indirect, parallel PCS  
and IIP

De Lorenzo *et al.* 2006





## 3.1 기술개발동향 :SOFC



### 고체산화물연료전지 제조

- ❖ 한국에너지기술연구원 [평관형]
  - 0.1kw급 (30L/hr) Stack : 4cm(W)x25cm(L), 10EA
- ❖ 세라파워[평판형, 사각형 or 원형]
  - 10cmx10cm, 120w(5cell) ; 40만원/cell
  - 5cmx5cm, 30w(5cell) ; 20만원/cell
- ❖ 한전 전력연구원
  - 5cmx5cm, 10cmx10cm
  - 1kw SOFC stack : 10cmx10cm, 48EA



[관형(tubular)]



[평관형]



[평판형]