

ABSTRACT OF THE DISCLOSURE

[Task] To avoid use of direct fire and suppress CO₂ emission when heating a heat medium used to input heat to dehydrogenation reaction of hydrogenated aromatics.

- 5 [Solution] A hydrogen station 1 includes: a dehydrogenation reactor 23 that produces hydrogen by dehydrogenation reaction of a hydrogenated aromatic in presence of a dehydrogenation catalyst; a heat supply device 26 that supplies heat to the dehydrogenation reactor via a heat medium heated by using fuel; and a PSA device 33 that purifies a reaction product gas in the dehydrogenation reactor by using an adsorbent
- 10 according to a pressure swing adsorption method, wherein the PSA device is supplied with a purge gas containing hydrogen used in regeneration of the adsorbent, the heat supply device includes a storage tank 27 storing the heat medium and a catalytic combustion tube 28 disposed in the storage tank to catalytically combust the fuel in presence of a combustion catalyst, and the catalytic combustion tube is supplied with
- 15 the purge gas discharged from the PSA device as the fuel together with air.