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C3Po1A-03 [22]: Cryogenic adsorption system for noble gas separation

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Helium widely used as cover gas and purge gas in reactor. During the nuclear fission reaction, a large amount of radioactive krypton and xenon will be produced and diffused to helium continuously, which are need to remove respectively. In this study we designed a cryogenic adsorption separation system based GM refrigerator. According to different requirements for adsorption separation, we designed different sample chambers. Firstly, we can adopt cryogenic activated carbon bed to separate krypton and xenon from helium. Further, krypton and xenon mixture gas can separate by cryogenic MOFs adsorbent bed. In addition, this system can also realize dynamic adsorption test and static adsorption test of different gases on adsorbent at very low temperature.

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