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# C2Po1D-05: Grand canonical monte carlo simulation of helium adsorption in MOF-5

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The specific heat of helium rises rapidly below 20 K, resulting in increased loss of the regenerator. The adsorption regenerator using the adsorbed helium as the regenerator material is the effective method to improve the performance of 4 K cryocoolers. In this paper, we use Grand Canonical Monte Carlo method to simulate the adsorption of helium on the MOF-5 below 20 K, and the effect of temperature, pressure and other parameters on the adsorption amount was analyzed. By comparing the adsorption characteristics of activated carbon to helium, the application potential of activated carbon and MOF-5 in regenerator was studied.

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