Dynamic Performance of Carbon Monolith for Methane Gas Storage

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The monoliths were consisted of carbon powder, PVP(Poly Vinyl Pyrrolidine) and PVA(Poly Vinyl Alcohol). The samples were characterized by nitrogen adsorption, SEM, FT-IR and Tem. A delivered methane amount was studied while 50cc methane reservoir was dynamically charged and discharged 10 times at a temperature(303.15K) and 40MPa by a gravimetrical apparatus. The fluctuating temperature and pressure of the reservoir were measured during cyclic operation. We found that delivery capacity was decreased 15% after cyclic operations from this work and the model was verified with experimental results.