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**Efficient adsorptive removal of dibenzothiophene from model fuel over heteroatom-doped porous carbons by carbonization of an organic salt**

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**Abstract**

A series of oxygen and nitrogen-doped porous carbons were synthesized by carbonization of tetrasodium ethylenediamine tetraacetic acid (EDTA-4Na) at various temperatures. Due to the high volume of pores smaller than 1nm, the resulting carbons were shown to be promising for adsorptive desulfurization with high maximum adsorption capacity of DBT from model oil (up to 49.1 mg·S/g). In the presence of aromatics, the adsorption of DBT was still significant. It was also found that not only content but also types of surface functionalities were important for the adsorption process, especially in the presence of aromatics. Regeneration experiments showed that more than 80% of the adsorption capacity could be recovered by solvent extraction.

**Keywords:** porous carbon; desulfurization; heteroatom; dibenzothiophene; aromatics

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