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Review

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# A Review on Modification Methods of Adsorbents for Elemental Mercury from Flue Gas

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**Abstract:** This review comprehensively discusses the recent development of modification methods of adsorbents for elemental mercury ( $\text{Hg}^0$ ) from flue gas. Various modification methods, mainly including microwave and plasma modification, halide and sulfur modification, acid and alkaline modification, noble metal and metal oxides modification, and multiple modification, are summarized. This review indicates that these modification methods can improve  $\text{Hg}^0$  removal performance of adsorbents by improving the surface pore structures of the adsorbents and/or increasing the number of chemically active sites on the surface of adsorbents. The main process parameters, advantages and disadvantages of these modification methods are described in detail. This review may provide a necessary inspiration and guidance for the researchers in the area of the development of new mercury capturing adsorbents.

**Keywords:** Element mercury; Modification methods; Adsorbents; Flue gas

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