The U.S. Environmental Protection Agency’s mercury emission control rules will soon be implemented. Thus finding innovative and cost-effective mercury control technologies has become increasingly important. Activated carbon (AC) has been widely considered to be a good Hg sorbent for coal utilization facility. However, the Hg capture capacity of AC is limited and thus the overall cost of AC based Hg control technology is prohibitively high. Thus catalysts should be explored to considerably improve the Hg sorption capacities of AC and thus significantly decrease the cost of AC based Hg capture technologies, and to this end, several inexpensive metal chlorides and oxides have been studied at SJTU. The experiments and computation works at SJTU have demonstrated that Co and Mn compounds are the promising catalysts for AC based Hg capture technologies. The finding is helpful to future development of advanced clean coal technologies, especially coal gasification and liquefaction.

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