

Abstract Submitted  
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**Using High-Voltage Direct Current in Removing Coke from a Zeolite Catalyst Grain**<sup>1</sup> ABDULAZIZ ALJALAL, King Fahd University of Petroleum and Minerals — Zeolite catalysts are commonly used in petroleum refining processes. Over a period of time, these catalysts lose their activity due to gradual deposition of carbonaceous materials, called coke. The coked catalysts are usually reactivated by combusting the coke at elevated temperatures in presence of an oxygen-enriched gas. But the elevated temperatures cause damages to the structure of the catalyst which result in reduced activity. Normally, the catalyst is reactivated 3 or 4 times before it must be returned to the manufacturer for reclamation of the valuable platinum and/or rhenium content. This study is an attempt to come up with a new procedure to remove coke from a zeolite catalyst grain using high-voltage direct current. It is found that the process is self-terminated due to the loss of electrical conductivity of the grain. In addition, it is found that there an optimum current range for which up to 90% of the coke can be removed. Higher or lower currents result in much smaller removal of the coke.

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