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# Decomposition of nitric oxide on platinum

- A. Amirnazmi<sup>1</sup>,
- M. Boudart<sup>a, 2</sup>
- <sup>a</sup> Department of Chemical Engineering, Stanford University, Stanford, California 94305 U.S.A.
- <sup>1</sup> Hercules Research Center, Wilmington, DE, U.S.A.
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## Abstract

The catalytic decomposition of NO on platinum has been studied in a flow reactor. When O<sub>2</sub> was added to the feed an oxidized surface was attained and all rate data on supported and unsupported catalysts gave a single Arrhenius line between 600 and 1050 °C. By contrast, when O<sub>2</sub> was not added to the feed, a pre-reduced platinum foil gave higher rates than those found on an oxidized surface. The higher rates decayed slowly to the lower rates after addition of oxygen to the feed. The less active oxidized surface contains two oxygen atoms per platinum atom and is produced by a slow rearrangement of the unoxidized surface in the presence of a sufficient amount of oxygen at high temperatures.

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