

# Catalytic Nanofibers and Their Potential Uses in Diesel Emission Control

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Elimination of combustion engine emissions has come again to the forefront with nitric oxides (NO<sub>x</sub>) and carbon monoxide (CO) as a present concern. Potential solutions exist by using supported noble metals in the form of nanofibers. These allow for optimum metal use by maximizing the available surface area for reaction while minimizing the diameter of the metal particles. The noble metals (platinum, palladium, and rhodium) are incorporated into alumina nanofibers by combining sol gel processing and electrospinning techniques. Electrospinning produces fibers roughly 100nm in diameter with metal particles ranging from 2-7nm. These nanofibers are supported in a microfiber support structure made by vacuum molding with the final product being a fibrous filter which is used for emissions reduction.

Bio Sketch:

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*Swaminathan. S., Loskofsky C. R., Chase G.G., Novel Catalytic Metal Oxide Nanofibers, American Chemical Society, Ceramics, Central Regional Meeting, Cleveland, Ohio, May 2009.*

*Loskofsky, C. R., Song, F., Newby, B. Z., Underwater Adhesion Measurements using the JKR Technique Journal of Adhesion, **82**, 713-730 (2006)*

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