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Catalytic CO Oxidation Over Ni Films Supported by Carbon Fiber

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Ni films with a thickness of 700-800 nm were deposited on carbon fiber layers using electroless deposition, and surface structures and chemical properties of these films with various annealing temperatures (300, 600 and 900°C) were studied. 600°C-annealing under atmospheric conditions resulted in formation of porous surface structures with a mean pore size of ~100 nm, whereas the other samples showed non-porous surface structures. 600°C-annealed Ni film showed much higher reactivities for toluene adsorption and CO oxidation comparing to other non-porous surfaces.

Keywords: CO oxidation, Ni, Carbon fiber, Porous structures