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### Improvement of catalysts for preferential oxidation of carbon monoxide

High-purity H<sub>2</sub> is necessary for Proton Exchange Membrane (PEM) fuel cells and preferential oxidation of carbon monoxide (CO-PROX) is widely used for this purpose because of its low cost and ability to reduce CO content to less than 10 ppm. During the last decade, several types of catalysts have been investigated to find a proper catalyst for CO-PROX, including its availability and stability. Commercially available precursors were started to prepare various catalyst supports, and both gold (Au) and platinum (Pt) catalysts were extensively studied. It was found that CO conversion reached 100% at 170-220 °C while its selectivity was in a range of 40-60%. Recently, mesoporous ceria, ceria-zirconia and ceria-titania supports, prepared by nanocasting technique, were studied and copper (Cu) was used as catalyst. Interestingly, the 100% CO conversion was also achieved at a lower temperature (130-150 °C) than those obtained from Au and Pt. However, the same selectivity range was observed.

### Biography

Sujitra Wongkasemjit has her expertise in advanced material synthesis and passion in improving environment. Her research goal is to support the environmental protection policy. With 30 years of her career, more than 130 publications in international peer review journals, two books and more than 200 international presentations have been achieved. At least 10 research awards were given to her. She has built experiences in both research and teaching in university.

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