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ONLINE ISSN : 1349-273X

PRINT ISSN : 1346-8804

Journal of the Japan Petroleum Institute

Vol. 49 (2006) , No. 4 pp.214-217



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Simple Syngas Detector for High-throughput Screening Reactor Using Color Reaction at High Pressure

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(Received: August 23, 2005)

The high-throughput screening reactor for high pressure oxidative reforming of methane requires a new simple syngas detector operating under high pressure, because the number of parallel reactors with the conventional detection system is limited by the complexity of the pressure reducing unit. Reduction of metal oxide with color change was applied to the detection system. Copper oxide was supported on the filter made of alumina, and the filter was placed underneath the catalyst bed. After oxidative reforming of methane was carried out under 1 MPa at 650°C, color change of spots from dark brown to light brown was observed just under the catalyst caused by copper oxide reduction. The color change disk can be used to detect hydrogen formation ability of the reforming catalyst under pressure.

Keywords: [Combinatorial chemistry](#), [High-throughput screening](#), [Syngas detector](#), [Color reaction](#), [Methane oxidative reforming](#)



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Kohji Omata, Akihiro Masuda, Takahisa Mochizuki, Yuhsuke Watanabe, Sutarto, Yasukazu Kobayashi and Muneyoshi Yamada, *Journal of the Japan Petroleum Institute*, Vol. **49**, No. 4, p.214 (2006) .

doi:10.1627/jpi.49.214

JOI JST.JSTAGE/jpi/49.214

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