High functionalization of transition metal by dispersion with atomic level on silica support

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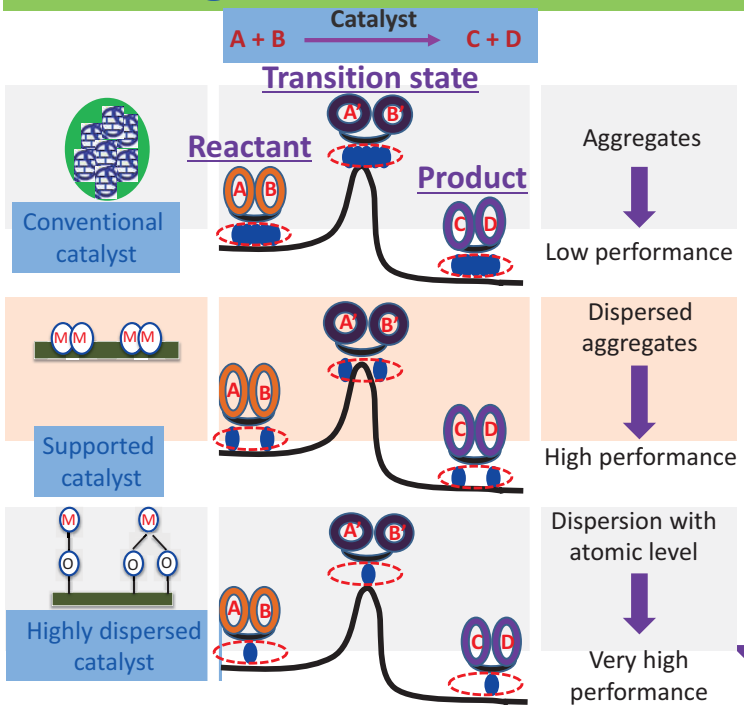
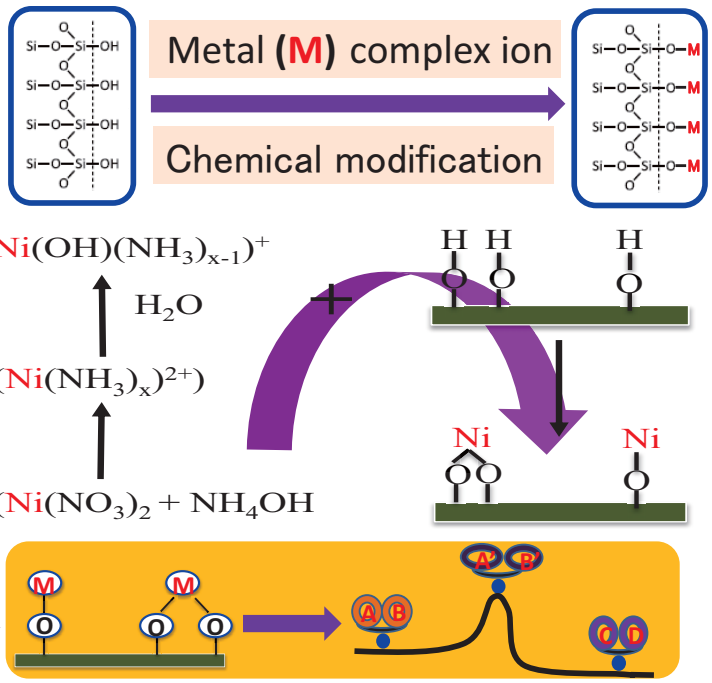
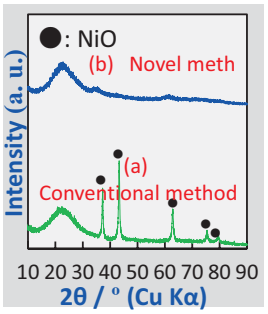
High functionalization



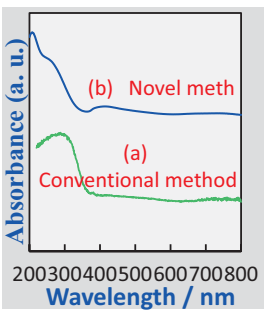
Dispersion mechanism



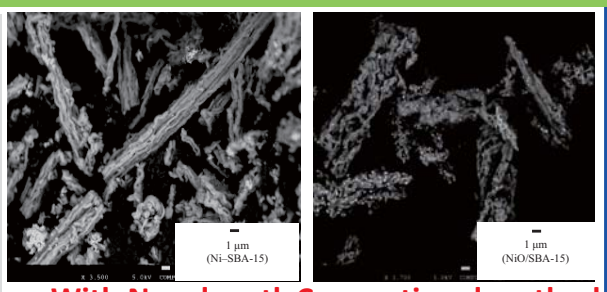
Characterization and application



XRD

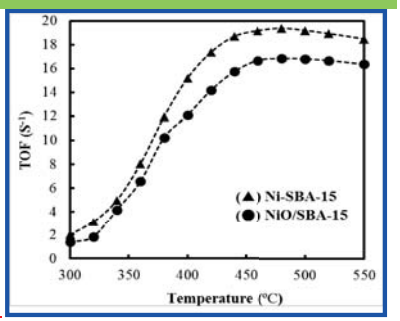


UV-VIS



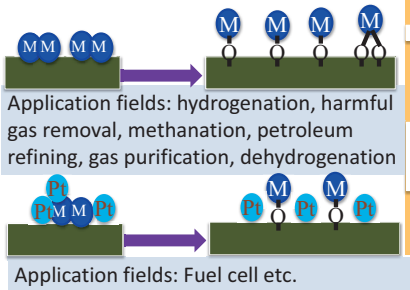
With Novel meth Conventional method

SEM



CO_2 methanation

Innovation



On silica supports:

- ●High dispersion of active components
- ●doping of impurity

Collaboration

◎TEM, SEM analysis techniques
◎Evaluation of magnetic, electric performance
◎Application development
Petroleum refining, environment purification, fuel cell etc.

・Paper：B.W. Lu et al., *Catal. Sci. Technol.*: **4**, 4313-4321 (2014), *Fuel*: **103**, 699-704 (2013), *RSC Adv.*: **2**, 6800-6805 (2012) etc.
・Related PAT：Appl. No：2014-119923, 2013-211200

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