

# PTPC2019

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## Role of catalyst support in hydrogen spillover

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Catalysis is the workhorse in chemicals production, energy conversion and pollution abatement. There is a continued demand for novel materials and processes and such development is greatly helped by understanding the fundamental steps in the catalytic process. Catalysts are often nano-sized particle anchored to a support, the role of which in the catalytic process often remains unclear. By designing nano-sized particles on support and performing photo-electron microspectroscopy (in a PEEM) the role of the support on the phenomenon of spillover is investigated. Spillover is an essential process in catalysis, which involves activation of a species on a particular catalyst particle, which then spills over onto the support and displays an action at a distance away from the particle. Such phenomenon is however controversially discussed in the literature, which requires the fundamental understanding of its mechanism and origin.

Karim, W., Spreafico, C., Kleibert, A., Gobrecht, J., VandeVondele, J., Ekinci, Y., van Bokhoven, J. A. *Nature* **541** (2017) 68-71

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