

Direct Femtosecond Laser Processing of Pd Surface For Nanostructures Creation

Friday, 25 September 2020 17:00 (15 minutes)

Laser-induced periodic surface structures (LIPSS) are very common phenomena that arises from interaction between different surfaces and femtosecond laser pulses. Characteristic size of such structures is laser wavelength order and typically belongs from nano- to micro-scale range. Searching new material surfaces for the nanostructuring are significant scientific interest of these days. We are reporting on the fabrication of the LIPSS on palladium upon femtosecond laser irradiation, employing laser beam scanning. It is shown that the structures are contained from palladium oxide (PdO). Palladium oxide are useful catalysts for catalytic hydrogenation in organic synthesis. Additionally this material has very high third order nonlinearity. It means that surfaces contained with PdO is very perspective material in optical quantum electronics. Thus, the structure could be useful in scientific researching and industry.

Topics

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Session Classification: Evening Session