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Functional nanomaterials for catalysis and energy research

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Nanomaterials play a key role in current and future energy research as energy conversion is a surface-related process and demands new materials with large and clean surfaces. For this purpose, laser ablation in liquid is a promising process to fabricate pure and versatile nanoparticles without stabilizers or surface-blocking additives. Those nanoparticles are used to functionalize energy-converting materials like heterogeneous catalysts. By choose of pure, laser-generated nanoparticles and versatile supporting materials it is possible to tailor a heterogeneous catalyst to almost any given application.

The team offers

- Ligand-free nanoparticles made of user-defined material from noble metals to semiconductors, e.g. Pt, Pd, Ni, ...
- Tailored heterogeneous catalysts: Supporting of laser-generated nanoparticles to almost any carrier material, e.g. Carbon, TiO2, Graphene, ...
- Ligand-free and functionalized nanoparticles for catalysis and energy research

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