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Sommario/riassunto

"Metal oxide nanoparticles play a decisive role in numerous natural and technological processes ranging from mineral transformation, catalysis, photocatalysis, electronics, and sensor technology. Continuously increasing quantities of metal oxide nanoparticle powders are used in very diverse areas such as engineering, electronics, energy technology, and electronics. As such, they have by far the greatest market relevance among the currently available nanomaterials. Defects, surfaces and interfaces in metal oxide nanoparticles dominate most physico-chemical processes occurring within this class of functional materials. As a result, interface engineering, i.e. the controlled modification of composition, size and structure, has become a key tool to tune the function and stability of nanostructures, but also to induce complex assembly at the meso- and the microscale, providing access to a range of new materials"--