

**NANO-ANATASE SURFACE MODIFICATION
TECHNIQUE FOR INCREASING OR LOWERING
OF PHOTOCATALYTIC ACTIVITY.**

Jan Prochazka
Timothy M. Spitler

Altair Nanomaterials Inc.
204 Edison Way
Reno, NV 89502
Tel: 775 8583716
janprochazka@altairinc.com

Photocatalytic activity is a significant characteristic of TiO_2 namely its nanoanatase form. We have developed a special surface modification process that can increase or lower the photocatalytic activity of the nano-anatase core.

The method is based on gelling of nanoanatase surface, saturating the gel with dopants, drying and calcination. Surface modifications can produce either very active surface or a hard shell of another ceramic oxide. The ceramic oxide layer is usually about 0.5-3nm. Intermediate products of the photodegradation of organic compounds can also be selectively changed by the anatase surface modifications.

Figure 1. Altair TiO_2 - nano anatase of TiNano40 series, with ZrO_2 hard shell on the particles.

