

## TiO<sub>2</sub> polymorphs formed in the annealed binary gels prepared by the sol-gel method

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Effect of a second component on the crystalline phase of TiO<sub>2</sub> in the annealed sol-gel derived TiO<sub>2</sub>-containing binary gels has been investigated. In the SiO<sub>2</sub>-TiO<sub>2</sub> system where SiO<sub>2</sub> >TiO<sub>2</sub>, the TiO<sub>2</sub> component crystallized to TiO<sub>2</sub>(B), a polymorph of TiO<sub>2</sub>, which transformed to anatase at higher temperatures. On the other hand, only anatase was formed in the gels where TiO<sub>2</sub> > SiO<sub>2</sub>. In the Al<sub>2</sub>O<sub>3</sub>-TiO<sub>2</sub> system where Al<sub>2</sub>O<sub>3</sub>>TiO<sub>2</sub>, rutile was the first crystalline phase. Probably the crystalline phase of TiO<sub>2</sub> is controlled by the interfacial energy between the TiO<sub>2</sub> crystallites and the surrounding matrix.

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