Fabrication of microstructural titania for optical applications

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One dimensional (1-D) microstructures are of fundamental importance and have attracted considerable interest due to unique electronic and optical properties associated with their structural anisotropy. Especially, titania with excellent optical properties has been considered as one of ideal candidates for optical application. In this presentation, titanium glycolate with rod-like or plate-like structure were produced by polyol process in which titanium alkoxide was reacted with polymethyl glycol to form white precipitate. Then, it was transformed into higher refractive index titania of anatase or rutile by annealing. In addition, it will be shown that titania has the potential possibility as medium for spontaneous and stimulated emission.