Synopsis of Original Research Paper

## **Development of a New UV Filter Based on Cerium Oxide.**

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A reaction using condensation between boric acid and 2,2'-iminodiethanol (diethanolamine) has been applied to cover the surface of  $CeO_2$  particles. A mixture of cerium oxide particles and the condensed viscous polymer was heated in an ammonia flow at 1073 K followed by calcination at 923 K in air. Formation of turbostratic boron nitride (tBN) layer was identified with an electron microcopy, infrared spectra, and x-ray photoelectron spectra measurements. The new coating process was more effective in reducing catalytic activities of cerium oxide than the conventional one using urea instead of 2,2'-iminodiethanol. The new tBN-coated  $CeO_2$  particles showed good UV blocking properties and more natural white color than those of the conventional tBN-CeO<sub>2</sub>. The feature of the new material will be preferable for new UV blocking materials especially for cosmetics.