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Application for UVA sunscreen: Light absorption of Schiff base metal complexes with TiO_2

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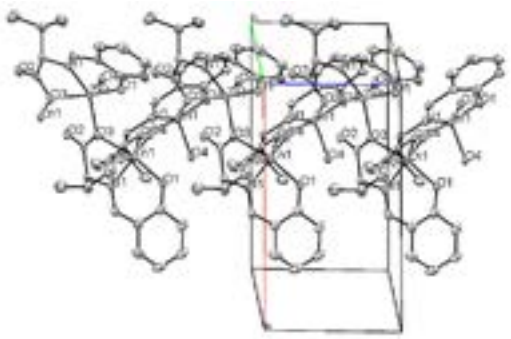
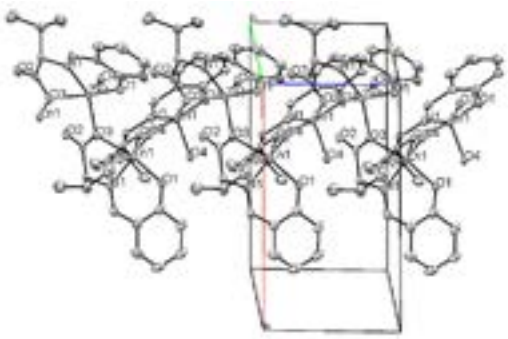
The sunscreen agent accounts for 3% of the market value of cosmetics market in Japan (2015) and the shipment volume of 5,000 t is on the rise. In addition to skin color correction and skin care, addition of safety, whitening and anti-aging due to the effect of vitiligo problems, there is a demand for value. Normally, as a sunscreen agent, ultraviolet light scattering agent of titanium oxide or zinc oxide is used in combination with an organic ultraviolet ray absorbing agent. However, it reaches the dermal layer of the skin, and is known for skin aging, melanin pigmentation and active oxygen generation etc. There are few absorbents that can completely absorb light in the range of UVA (320-400 nm) wavelength area. So far, we have been aiming at practical application of ultraviolet absorption by a composite material of amino acid derivative Schiff base metal complex and titanium oxide. In this time, zinc (II) complexes were employed. Structural and chemical studies on the complexes will be presented. In addition, molecular design process using the related copper (II) complexes will be also mentioned in the keynote lecture.





Biography

Takashiro Akitsu is a Full Professor in Department of Chemistry, Faculty of Science Division II at Tokyo University of Science. He completed his undergraduate school training (chemistry) from Osaka University, Japan and his graduate school training (physical & inorganic chemistry, especially coordination, crystal and bioinorganic chemistry) from Osaka University, Japan. He has published up to about 150 articles in peer-reviewed journals and has had posters presented at international level. He has been a peer reviewer of many journals.

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