

Development of 3D Si/SiC Filter Enhancing the Efficiency of Photo-Catalyst

- Efficiently decompose pollutants even under FL light -

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TiO₂ photo-catalyst incorporated into three-dimensional porous ceramics of Si/SiC with similar structure as that of polyurethane sponge ensured efficient decomposition of NO_x not only under the irradiation with UV rays but also under the illumination with fluorescent lamp. The 3D photo-catalyst filter was characterized by finer bridge elements, providing high transmittance, enhanced contact probability with pollutant and lower pressure loss. These properties are ideal for a carrier of photo-catalyst.



An outer view of 3D Si/SiC filter

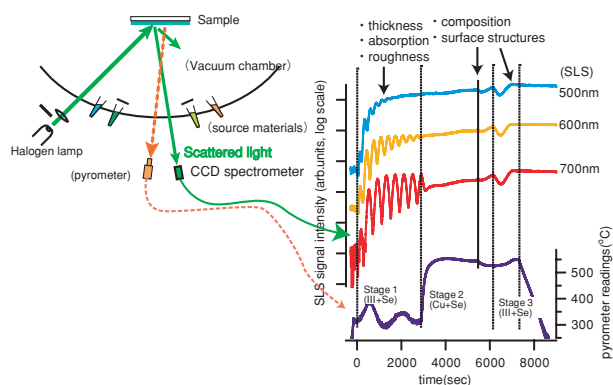
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In-situ Observation of CIGS Thin Film Deposition Process by Light Scattering

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Spectroscopic Light Scattering (SLS) is an informative *in-situ* monitoring method that irradiates the surface of thin films by white light, and monitors the scattered light by a spectrometer (Figure). This newly introduced technique provides information on surface roughness, deposition speed, composition and optical properties, while it can be easily attached to existing systems, and also low in cost. We have developed this SLS technique under collaboration with HMI (Germany), and have applied to the three-stage deposition process of Cu(In,Ga)Se₂ (CIGS) thin films. We have found SLS useful for controlling the optical and physical properties of the film



Schematic diagram and a typical set of profiles of SLS applied for a deposition process of CIGS thin films

during the deposition, and consequently improve the performance of the CIGS solar cells. For further information, see: <http://unit.aist.go.jp/energyelec/cispvc/Research/SLS/>