Development of Global Earth Observation Grid (GEO Grid) System

In accordance with "Earth Observation Summit/GEOSS 10-Year Implementation Plan", we are developing “GEO Grid” system. The system archives a large scale of earth observing satellite data, unifys disparate earth observation databases and Geographic Information Systems and provides secure service to users using the Grid technology.

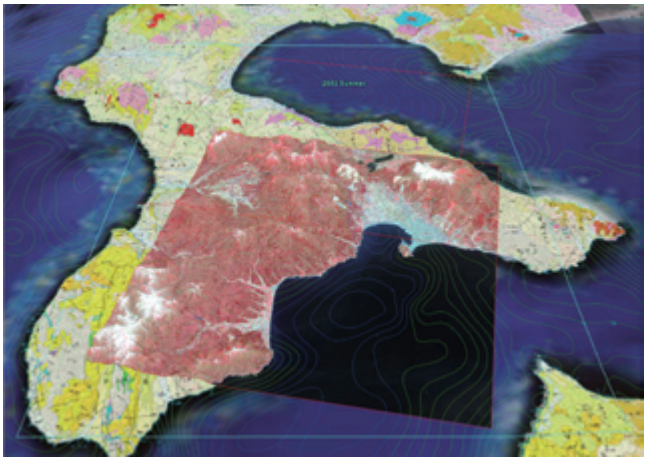

Figure : A geological map and a satellite image

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Creation of a New Type of Highly Luminescent Glass Phosphors Dispersing Cd-Free Nanoparticles

Light-emitting semiconductor nanoparticles without harmful cadmium have been prepared by an aqueous solution method. They are composed of Te-added ZnSe covered with ZnS, and show high emission efficiency in a blue-color region. These nanoparticles were successfully incorporated in a glass matrix by a sol-gel method and exhibit stable emission. A novel method based on self-organization effect was also developed for dispersing nanoparticles at high concentrations in glass thin films. The brightness of the glass thin films was estimated to be approximately 30 times higher than that of the conventional phosphor having the same sample thickness.

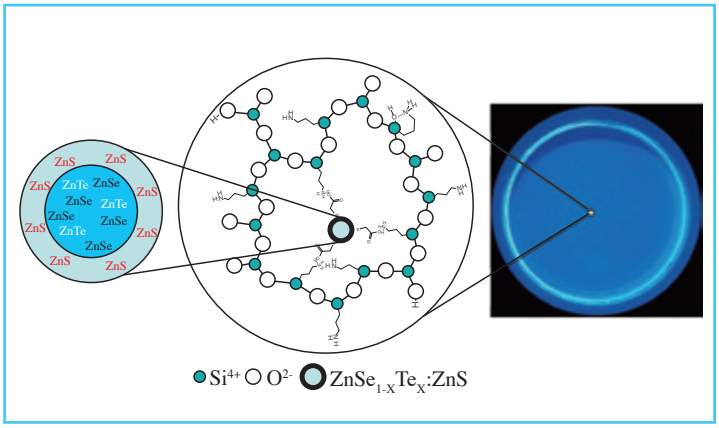

Figure : Left: Illustration of nanoparticles prepared by the addition of Te (inside) and S (outside) elements. Center: Illustration of nanoparticles dispersed in glass matrix. Right: Blue luminescent image of the prepared glass irradiated with ultraviolet light.

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