Theme: New Quantum Dot

- Sub Theme: Quantum dot of new structure and composition

Quantum dots (QDs) are one of the most attractive light-emitting materials for the display application. The current QD TVs with high color purity apply the color converting sheet containing green and red QDs on blue backlit LCD. For the next stage of QD display, we need more developed QDs of high blue absorption at high concentration and blue-emitting QDs with high efficiency. Here, we call for proposals on finding new structure and composition of QDs of wide bandgap and/or high blue absorption for the future display application.

The topics we pursue through this GRO are as follows:

- The new non-toxic QDs with wide bandgap and/or high blue absorption (Cd, Pb-free)
- Colloidal synthesis of metal nitride QDs (GaN, InN)
- Investigation of new precursors for metal nitride QDs

- Sub Theme: Safety analysis of quantum dot

Nanomaterials are currently using in various fields and studied vigorously due to their interesting characteristics. Well-known toxic elements like Pb, Hg and Cd should be excluded in the commercialized products and the understanding of the environmental impact of nanomaterials are also important. We are aiming to investigate how nanomaterials affects the safety of environments and living organisms.
The topics we pursue through this GRO are as follows:

- The effect of QDs or nanomaterials on environments and living organisms and related analysis methods

※ Topics are not limited to the above examples and the applicants are encouraged to propose original idea.

※ Funding : Up to USD $150,000 per year