



Special Issue on Advances in Photoluminescence

Call for Papers

The simplest photoluminescent processes are resonant radiations, in which a photon of a particular wavelength is absorbed and an equivalent photon is immediately emitted. This process involves no significant internal energy transitions of the chemical substrate between absorption and emission and is extremely fast, of the order of 10 nanoseconds.

More interesting processes occur when the chemical substrate undergoes internal energy transitions before re-emitting the energy from the absorption event. The most familiar such effect is fluorescence, which is also typically a fast process, but in which some of the original energy is dissipated so that the emitted light photons are of lower energy than those absorbed. The generated photon in this case is said to be red shifted, referring to the loss of energy.

Photoluminescence is an important technique for measuring the purity and crystalline quality of semiconductors such as GaAs and InP. Several variations of photoluminescence exist, including photoluminescence excitation.

Time-resolved photoluminescence is a method where the sample is excited with a light pulse and then the decay in photoluminescence with respect to time is measured. This technique is useful in measuring the minority carrier lifetime of III-V semiconductors like Gallium arsenide.

An even more specialized form of photoluminescence is phosphorescence, in which the energy from absorbed photons undergoes intersystem crossing into a state of higher spin multiplicity, usually a triplet state. Once the energy is trapped in the triplet state, transition back to the lower singlet energy states is quantum mechanically forbidden, meaning that it happens much more slowly than other transitions. The result is a slow process of radiative transition back to the singlet state, sometimes lasting minutes or hours. This is the basis for "glow in the dark" substances.

In this special issue, we intend to invite front-line researchers and authors to submit original research and review articles on exploring **Advances in Photoluminescence**.

Authors should read over the journal's [Authors' Guidelines](#) carefully before submission. Prospective authors should submit an electronic copy of their complete manuscript through the journal [Paper Submission System](#).

According to the following timetable:

Manuscript Due	August 29th, 2013
Publication Date	October 2013



Please kindly notice that the “**Special Issue**” under your manuscript title is supposed to be specified and the research field “**Special Issue — Advances in Photoluminescence**” should be chosen during your submission.

Special Issue Editor

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