Molecular Design of Luminescent Metal Complexes

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Recently, luminescent lanthanide (Ln^{III}) complexes draw much attention as a potential candidate of luminescent materials for organic LED, optical-fiber amplifier, and laser. The luminescent function originates from synergy of the ligand enabling efficient excitation of the luminescent center and the Ln^{III} providing sharp emission bands with long lifetime. The key factors for molecular design of the complex are firstly the selection of the Ln^{III} center considering the emission wavelength (*i.e.* color) and secondly the designing of the ligand providing the Ln^{III} center excited energy and coordination environment to shield from coordinating water. In this program, the objective is to obtain materials with blue, green and red luminescence by designing the complex. Participants are encouraged to propose any idea to lead to the goal.

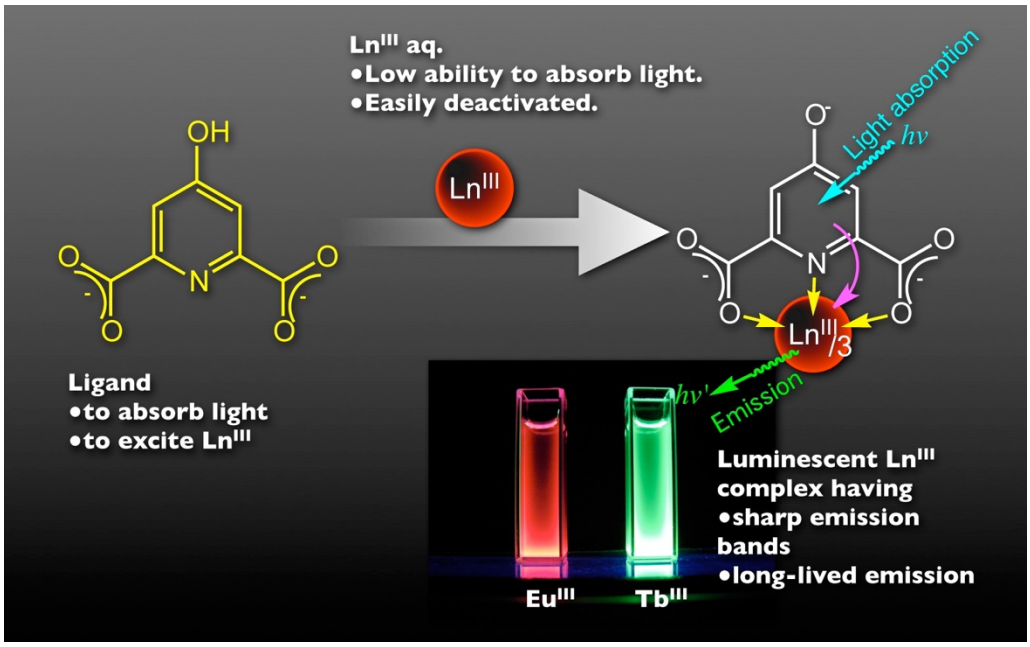

Figure An example of designing of the luminescent Ln^{III} complex.