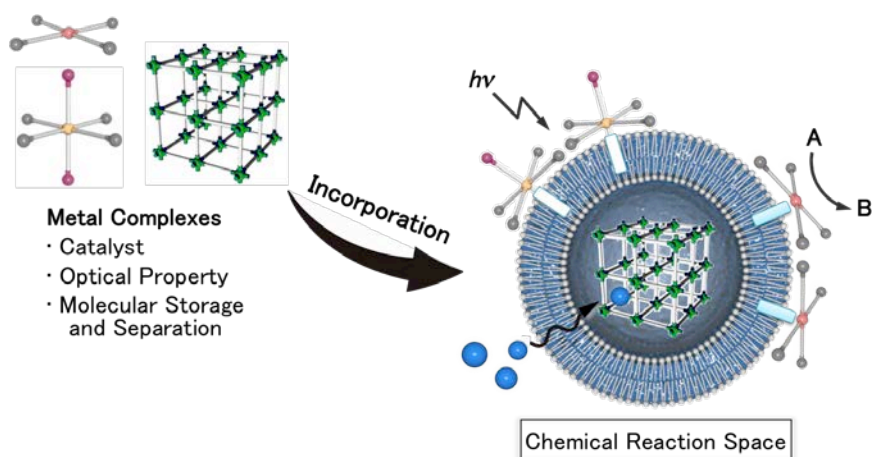


## Functionalization of Liposome with Metal Complexes

Tomomi Koshiyama and Masaaki Ohba

*Department of Chemistry, Faculty of Science, Kyushu University*

Creation of multifunctional reaction systems like photosynthesis in nature is one of the most considerable topics in current chemistry. Although various chemical reactors consisting of polymers and proteins have been studied, it is still difficult to construct reaction systems in which different chemical reactions occur simultaneously. We focus on liposome, which is an artificially-prepared spherical vesicle composed of a lipid bilayer of phospholipids, as a chemical reaction space. It is expected that different functional molecules co-exist in one liposome hierarchically, because a liposome has hydrophilic region of inner water phase, hydrophobic region of lipid bilayer, and inner and outer surfaces. To construct a novel chemical reaction space, we implemented functional metal complexes (*e.g.*, catalyst, photoreceptor, luminant, electron mediator, and molecular storage and separator) into specific liposome space. In the presentation, I will introduce the functionalization of liposome surface with lipophilic metal complexes such as the water oxidation catalyst<sup>(1)</sup> and the photoinduced release of nitric oxide<sup>(2)</sup>, and the direct synthesis of coordination polymers in the inner aqueous phase.



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