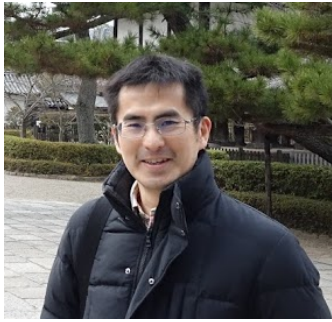


Requests for Collaboration

<p>Name: Yusuke Yamada Current position: Professor E-mail address: ymd@a-chem.eng.osaka-cu.ac.jp</p>	
<p>Research Interests</p> <ul style="list-style-type: none">● Energy related issues● Environmental issues● Heterogeneous catalysis	
<p>Creative Achievements in the Past Research</p> <p>(1) Utilization of metal complexes as heterogeneous catalysts Heterogeneous catalysis of polynuclear cyano-bridged metal complexes was developed for hydrolysis of organophosphate [1], photocatalytic water oxidation [3] and photocatalytic oxygenation of aromatic compounds [4].</p> <p>(2) Photocatalytic assembly for hydrogen evolution Reaction systems composed of multiple components including a photosensitizer, an oxidation catalyst and a reduction catalyst were constructed for photocatalytic hydrogen evolution. These components were functionally assembled in a confined space for efficient photoinduced electron transfer. The void spaces in a protein crystal [2] or silica-alumina nanoparticle ensembles [5] were utilized to construct assemblies for photocatalytic hydrogen evolution.</p>	
<p>Research Theme That I Want to Collaborate With</p> <ul style="list-style-type: none">● Heterogeneous catalysis of metal complexes● Catalysis of nanoparticles assembly● Artificial photosynthesis	
<p>A List of 5 Key Publications</p> <ol style="list-style-type: none">1. Effect of surface acidity of cyano-bridged polynuclear metal complexes on catalytic activity for hydrolysis of organophosphates, H. Tabe, C. Terashima, <u>Y. Yamada</u>, <i>Catal. Sci. Technol.</i> in press (DOI: 10.1039/C8CY01015C)2. Photocatalytic hydrogen evolution systems constructed in cross-linked porous protein crystals H. Tabe, H. Takahashi, T. Shimoi, S. Abe, T. Ueno, <u>Y. Yamada</u>, <i>Appl. Catal. B</i>, 237, 1124-1129 (2018)3. Photocatalytic water oxidation by persulphate with a Ca²⁺ ion-incorporated polymeric cobalt cyanide complex affording O₂ with 200% quantum efficiency, <u>Y. Yamada</u>, K. Oyama, T. Suenobu, S. Fukuzumi, <i>Chem. Commun.</i> 53, 3418-3421 (2017)4. Dual Function Photocatalysis of Cyano-Bridged Heteronuclear Metal Complexes for Water Oxidation and Two-Electron Reduction of Dioxygen to Produce Hydrogen Peroxide as a Solar Fuel, Y. Aratani, T. Suenobu, K. Ohkubo, <u>Y. Yamada</u>, S. Fukuzumi <i>Chem. Commun.</i> 53, 3473-3476 (2017)5. A composite catalyst of Pt nanoparticles and an organic photocatalyst incorporated in interparticle mesospaces of silica-alumina nanoparticle ensembles for hydrogen evolution in water. <u>Y. Yamada</u>, H. Tadokoro, M. Naqshbandi, J. Canning, M. J. Crossley, T. Suenobu, S. Fukuzumi, <i>ChemPlusChem</i>, 81, 521-525 (2016)	