

Ryuhei Nakamura received his Dr. Degree in Science in 2005 from Osaka University, where he studied photo-electrochemistry of TiO_2 under the supervision of Prof. Yoshihiro Nakato. After working as a JSPS postdoctoral fellow with Dr. Heinz Frei in Lawrence Berkeley National Laboratory (LBNL), he joined the University of Tokyo as an assistant professor in 2006 and worked on electromicrobiology and artificial photosynthesis with Prof. Kazuhito Hashimoto.

In 2013, he was appointed to Team Leader (PI) in RIKEN Center for Sustainable Resource Science (CSRS). In RIKEN CSRS, his group (Biofunctional catalyst research team) has been working on developing bio-geologically inspired catalysts, as well as employing robust energy management in the deep sea environment to develop novel materials and systems necessary to manage renewable energy sources

(<http://www.riken.jp/en/research/rikenresearch/rikenpeople/2017summer-1/>). In addition to the quest for the origin of biological oxygen evolution reaction in PSII, he has intensively worked on deep-sea ecosystems, and reported the novel concept of “electrical current generation across a black smoker chimney” as a new type of energy propagation at the deep sea hydrothermal environments. Soon after this proposal, he identified the bacteria that can live off electricity termed “Electrolithoautotroph” as the 3rd type of autotrophic carbon fixation mechanism other than photosynthesis and chemosynthesis, and proposed the novel scenario about “the origin of life with electricity” as the possible life-first engine to drive CO_2 fixation (<http://www.csrs.riken.jp/en/interview/nakamura/index.html>).

In 2017, he concurrently serves as a Professor of Earth Life Science Institute (ELSI) at Tokyo Institute of Technology, which is assigned to the World Premier International Research Center Initiative (WPI) of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) (<http://www.elsi.jp/en/>). In ELSI, he has intended to create the new research discipline by integrating electrochemistry, microbiology, and geology to seek one of the vital questions of general science, how was life emerged on the earth (the Origin of Life)?

Based on his achievements about electrocatalysis and deep-sea electrochemistry, he was awarded “The first Honda-Fujishima Prize (2005)”, “The First NAGASE Prize (special prize) (2011)” and “The Young Scientist's Prize 2016” Minister of Education, Culture, Sports, Science and Technology (MEXT) in 2016. Also, in 2016, he was invited to “24th Solvay Conference on Chemistry: Catalysis in Chemistry and Biology” (Brussels, Belgium), which is one of the most prestigious conference in Chemistry, as a speaker in the session of catalysis in extreme environments (https://en.wikipedia.org/wiki/Solvay_Conference). He published more than 80 original papers and total citation reaches 5619 with H-index of 37.