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## Professional Career

- 2019-present Professor at Graduate School of Science, Nagoya University
- 2013–2019 Associate Professor at Graduate School of Science, Nagoya University
- 2008–2013 Assistant Professor at Graduate School of Science, Nagoya University
- 2007–2008 Assistant Professor at Research Center for Materials Science, Nagoya University
- 2006–2007 JSPS Postdoctoral fellow (SPD)
- 2005–2006 Postdoctoral fellow at Graduate School of Science, Nagoya University
- 2004–2005 Postdoctoral fellow at Graduate School of Materials Science, Nara Institute of Science and Technology
- 2002–2004 Postdoctoral fellow of the Core Research for Evolutional Science and Technology (CREST) project of Japan Science and Technology Agency (JST)

## Education

- 1999–2002 Graduate School of Science and Technology, Chiba University  
Received a PhD (Prof. Takayuki Nakahira)
- 1997–1999 Graduate School of Science and Technology, Chiba University
- 1993–1997 Department of Applied Chemistry, Faculty of Engineering, Chiba University

## Selected Publications

- [1] O. Shoji, Y. Aiba, Y. Watanabe, "Hoodwinking Cytochrome P450BM3 into Hydroxylating Non-Native Substrates by Exploiting Its Substrate Misrecognition" *Acc. Chem. Res.* **2019**, *52*, 925-934.
- [2] K. Omura, Y. Aiba, H. Onoda, J. K. Stanfield, S. Ariyasu, H. Sugimoto, Y. Shiro, O. Shoji, Y. Watanabe, "Reconstitution of full-length P450BM3 with an artificial metal complex by utilising the transpeptidase Sortase A" *Chem. Commun.* **2018**, *54*, 7892-7895.
- [3] M. Karasawa, J. K. Stanfield, S. Yanagisawa, O. Shoji, Y. Watanabe, "Whole-Cell Biotransformation of Benzene to Phenol Catalysed by Intracellular Cytochrome P450BM3 Activated by External Additives" *Angew. Chem. Int. Ed.* **2018**, *57*, 12264-12269.
- [4] H. Uehara, Y. Shisaka, T. Nishimura, H. Sugimoto, Y. Shiro, Y. Miyake, H. Shinokubo, Y. Watanabe, O. Shoji, "Structures of the Heme Acquisition Protein HasA with Iron(III)-5,15-Diphenylporphyrin and Derivatives Thereof as an Artificial Prosthetic Group" *Angew. Chem. Int. Ed.* **2017**, *56*, 15279-15283.
- [5] K. Suzuki, J. K. Stanfield, O. Shoji, S. Yanagisawa, H. Sugimoto, Y. Shiro, Y. Watanabe, "Control of stereoselectivity of benzylic hydroxylation catalysed by wild-type cytochrome P450BM3 using decoy molecules" *Catal. Sci. Technol.* **2017**, *7*, 3332-3338.
- [6] O. Shoji, S. Yanagisawa, J. K. Stanfield, K. Suzuki, Z. Cong, H. Sugimoto, Y. Shiro, Y. Watanabe, "Direct Hydroxylation of Benzene to Phenol by Cytochrome P450BM3 Triggered by Amino Acid Derivatives" *Angew. Chem. Int. Ed.* **2017**, *56*, 10324-10329.
- [7] Z. Cong, O. Shoji, C. Kasai, N. Kawakami, H. Sugimoto, Y. Shiro, Y. Watanabe, "Activation of Wild-Type Cytochrome P450BM3 by the Next Generation of Decoy Molecules: Enhanced Hydroxylation of Gaseous Alkanes and Crystallographic Evidence" *ACS Catal.* **2015**, *5*, 150-156.
- [8] C. Shirataki, O. Shoji, M. Terada, S.-i. Ozaki, H. Sugimoto, Y. Shiro, Y. Watanabe, "Inhibition of heme uptake in *Pseudomonas aeruginosa* by its hemophore (HasA(p)) bound to synthetic metal complexes" *Angew. Chem. Int. Ed.* **2014**, *53*, 2862-2866.
- [9] O. Shoji, T. Kunimatsu, N. Kawakami, Y. Watanabe, "Highly selective hydroxylation of benzene to phenol by wild-type cytochrome P450BM3 assisted by decoy molecules" *Angew. Chem. Int. Ed.* **2013**, *52*, 6606-6610.
- [10] N. Kawakami, O. Shoji, Y. Watanabe, "Direct hydroxylation of primary carbons in small alkanes by wild-type cytochrome P450BM3 containing perfluorocarboxylic acids as decoy molecules" *Chem. Sci.* **2013**, *4*, 2344-2348.
- [11] N. Kawakami, O. Shoji, Y. Watanabe, "Use of perfluorocarboxylic acids to trick cytochrome P450BM3 into initiating the hydroxylation of gaseous alkanes" *Angew. Chem. Int. Ed.* **2011**, *50*, 5315-5318.

## Research Interests

1. Alteration of Substrate Specificity of Cytochrome P450s
2. Gaseous Alkane Hydroxylation by Cytochrome P450s
3. Engineering of Heme Acquisition Proteins