### ****Education:****

**Nagoya Institute of Technology, Engineering Faculty**
1979 Bachelor of Engineering – Synthesis Chemistry
1981 Master of Engineering – Polymer Science

**Hokkaido University, Graduate School of Engineering**

2010 PhD in Engineering - Title of Thesis “Working mechanism and material design of polycarboxylate – ether (PCE) superplasticizers for concrete.” Under Professor Toyoharu Nawa, Dean of Faculty Graduate School, and School and Engineering, and incumbent President of Hokkaido University.

**Awards:**

2013 Hans Kühl Award from the German Chemical Society for the invention of PCE superplasticizers
2010 Technische Universität München - Rudolf Diesel Industry Fellow at Institute for Advanced Study
2006 Tokyo Institute of Technology - The 3rd Professors Kondo and Daimon Prize for the invention and developments of PCE superplasticizers for concrete

**Focus amd principal areas of Research:**

Superplasticizers for concrete
Additives for concrete
Water soluble polymers
Synthesis of polymers

**Patents:**

Over 100 registered patents in Japan and more than 50 outside Japan

**Professional Career:**

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| **Technische Universität München (TUM)** |
| From 2014 | Honorary Life Member Advisory Board at TUM Center for Advanced PCE Studies |
| From 2010 | Rudolf Diesel Industry Fellow at Institute for Advanced Study |
| **Nippon Shokubai Co., Ltd., Japan** |
| 2003 | General Manager and Fellow |
| 2000 | Polymer Research Center; Section Manager |
| 1995 | Polymer Research Center; Research Manager |
| 1981 | Central Research Center; Research and Development chemist |

**Published Theses**

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| --- | --- | --- | --- |
| **Date** | **Publication** | **Co-authored** | **Title** |
| 2010 | *J. Struct. Constr. Eng., Aij*, **75**, 231-240 | ProfessorToyoharuNawa | On Entraining Air of Polycarboxylate type Water Reducer |
| 2009 | *J. Struct. Constr.**Eng., Aij*, **74**(636), 185-191 | ProfessorToyoharuNawa | On Air Entraining Performanceof Polycarboxylate type Water Reducer |
| 2009 | *J. Struct. Constr. Eng., Aij*, **74**, 765-773 | ProfessorToyoharuNawa | The Effect of Polycarboxylate-type Superplasticizer Controlled its Adsorption Rate onto the Cement Particles By Changing the Polymer Structure |
| 2008 | *Japanese Journal of Polymer Science and Technology*, **65**, 659-669 | ProfessorToyoharuNawa andT. Yuasa | Polymethacrylate-graft-polyethylene Glycol as High-range Water Reducing Agent for a Concrete |
| 2008 | *J. Struct. Constr. Eng., Aij*, **73**, 685-691 | ProfessorToyoharuNawa | The Gradual Release type-Slump Retentive Agent, which is Synthesizedby Crosslinking Polycarboxylate having Poly ethyleneglycol Pendant at Alkaline Hydrolytic Points, and its Manufacturing Method |

Published Papers

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Publication** | **Co-authored** | **Title** |
| 2017 | *Scientific Reports*, DOI:10.1038/s41598-017- 16048-3 | J. Ye, P. Branicio,J. Zheng, A. Lange, J. Plank and M. Sullivan | Adsorbed Conformations ofPCE Superplasticizers in Cement Pore Solution Unraveled by Molecular Dynamics Simulations |
| 2017 | *Advances in Cement Research* **29**(10), 418-428 | P. Branicio, J. Ye,J. Zheng, Y. Tomike,A. Lange, J. Plank, and M. Sullivan | Atomistic Dynamics Simulation to Solve Confor- mation of Model PCE Superplasticizers in Water and Cement Pore Solution |
| 2016 | *The Society of Polymer Science*, *Japan* **65**, 357-359 | Sole author | Superplasticizers for Concretewhich were Originally Invented in Japan (Highlight Reviews: Cover Story) |
| 2014 | *Manufacturing Technology* **66**(4), 38-41 | Sole author | Development of PCEs BasedNew Superplasticizers for Concrete (Cover Page) |

Principal Public Scientific Lectures

|  |  |  |
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| **Date** | **Venue** | **Title of lecture** |
| 2016 | *The Society of Polymer Science, Japan*; Konan University in Japan | Dawning of PCE superplasticizers and Memories |
| 2012 | Guest Lecture on Chair of Construction Chemistry at Technische Universität München in Germany, | Polycarboxylate type superplasticizers for concrete and their working mechanism |
| 2005 | Winter Symposium Semester Lecture on Chair of Construction Chemistry at Technische Universität München in Germany | The Development of Polycarboxylates for Concrete in Japan |
| 2005 | 29th Lecture, *The Society of Polymer Science, Japan* at Nara Institute of Science and Technology in Japan | Cement Reducing Agent (Application of Water Soluble Polymer) |
| 2005 | Seminar for Technical Exchangesof Polycarboxylate-Based Superplasticizers by*Architectural Institute of China*, at China Hall of Science and Technology in Beijing, China | Several Performances of Polycarboxylate- Based Superplasticizers |
| 1994 | *Mining and Materials Processing Institute of Japan/ Australasian Institute of Mining and Metallurgy* Joint Symposium at Yamaguchi University in Japan, New Horizons in Resource Handling andGeo-Engineering, | Polycarboxylic acid based cement dispersant AQUALOC® |