NIMS Award 2022 受賞者

石原 一彦（いしはら かずひこ）教授

大阪大学大学院工学研究科 特任教授
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研究分野
高分子化学、バイオマテリアル

経歴

1984 Doctor of Engineering (Applied Chemistry), Waseda University
1984～1986 Research Associate, Sagami Chemical Research Center
1987～1990 Assistant Professor, Tokyo Medical and Dental University
1991～1998 Associate Professor, Tokyo Medical and Dental University
1998～2000 Associate Professor, The University of Tokyo
2000～2021 Professor, The University of Tokyo
2021 Emeritus Professor, The University of Tokyo
2021～Present Specially Appointed Professor, Osaka University

主な受賞歴

2000 Technical Progress Award, Japanese Society of Artificial Organs
2001 Award of Japanese Society for Biomaterials (2001)
2004 Harushige Inoue Prize, Japan Science and Technology Agency
2004 SPSJ Mitsubishi Chemical Award, Society of Polymer Science, Japan (2004)
2006 Frank Stinchfield Award, The Hip Society, The American Academy of Orthopedic Surgeons
2009 Clemson Award, Society for Biomaterials
2011 High-technology Award: Award of METI
2011 Technical Progress Award, Japanese Society of Artificial Organs
2013 Industrial Award, Fine Ceramic Society, Japan
2014 Award of Society of Polymer Science, Japan (2014)
2017 Prizes for Science and Technology from MEXT, Development Category
2017 Science and Technology of Advanced Materials 2017 Altmetrics Award
2018 Samuel F. Hulbert Award, Clemson University
2018 The Prize of METI National Commendation for Invention
2018 The Japan Medical Research and Development Grand Prize, Award of Ministry of Health, Labor and Welfare, Japan
2020 Japan Techno-Economics Society President Award
2020 Cosmetology Research Award, KOSÉ Cosmetology Research Foundation
2020 SPSJ Award for Outstanding Achievement in Polymer Science and

Technology, Society of Polymer Science, Japan (2020)

2021 The Award for Distinguished Contribution in Advancement of Biomaterials Science, Japanese Society for Biomaterials (2021)

2021 Japan Bioindustry Award, Japan Bioindustry Association

主要な論文/出版物

1) Ishihara K, Ueda T, Nakabayashi N. Preparation of phospholipid polymers and their properties as polymer hydrogel membrane. *Polym J* 1990;**23**:355-360.
2) Ishihara K, Aragaki R, Ueda T, Watanabe A, Nakabayashi N. Reduced thrombogenicity of polymers having phospholipid polar groups. *J Biomed Mater Res.* 1990;**24**(8):1069-1077.
3) Ishihara K, Ziats NP, Tierney BP, Nakabayashi N, Anderson JM. Protein adsorption from human plasma is reduced on phospholipid polymers. *J Biomed Mater Res.* 1991;**25**(11):1397-1407.
4) Ishihara K, Nomura H, Mihara T, Kurita K, Iwasaki Y, Nakabayashi N. Why do phospholipid polymers reduce protein adsorption? *J Biomed Mater Res.* 1998 **39**(2):323-30.
5) Ishihara K. Bioinspired phospholipid polymer biomaterials for making high performance artificial organs. *Sci Technol Adv Mater.* 2000;**1**(3):131-138.
6) Moro T, Takatori Y, Ishihara K, Konno T, Takigawa Y, Matsushita T, Chung UI, Nakamura K, Kawaguchi H. Surface grafting of artificial joints with a biocompatible polymer for preventing periprosthetic osteolysis. *Nat Mater*. 2004;**3**(11):829-836.
7) Ishihara K, Chen W, Liu Y, Tsukamoto Y, Inoue Y. Cytocompatible and multifunctional polymeric nanoparticles for transportation of bioactive molecules into and within cells. *Sci Technol Adv Mater.* 2016;**17**(1):300-312.
8) Ishihara K, Mu M, Konno T, Inoue Y, Fukazawa K. The unique hydration state of poly(2-methacryloyloxyethyl phosphorylcholine). *J Biomater Sci Polym Ed*. 2017;**28**(10-12):884-899.
9) Ishihara K, Mu M, Konno T. Water-soluble and amphiphilic phospholipid copolymers having 2-methacryloyloxyethyl phosphorylcholine units for the solubilization of bioactive compounds. *J Biomater Sci Polym Ed*. 2018;**29**(7-9):844-862.
10) Ishihara K. Revolutionary advances in 2-methacryloyloxyethyl phosphorylcholine polymers as biomaterials. *J Biomed Mater Res A*. 2019;**107**(5):933-943.
11) Ishihara K. Blood-compatible surfaces with phosphorylcholine-based polymers for cardiovascular medical devices. *Langmuir*. 2019;**35**(5):1778-1787.
12) Ishihara K, Oda H, Konno T. Spontaneously and reversibly forming phospholipid polymer hydrogels as a matrix for cell engineering. *Biomaterials.* 2020;**230**:119628.
13) Ishihara K, Fukazawa K. Cell-membrane-inspired polymers for constructing biointerfaces with efficient molecular recognition. *J Mater Chem B*. 2022;**10**(18):3397-3419.