

# Curriculum Vitae

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Date of Birth: July 19, 1956, Shizuoka, Japan

## Contact Info:

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## Education:

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1986-'87 JSPS Research Associate, Bioorganic Chemistry, Kyoto University, Kyoto, Japan.

1984-'86 Postdoctoral Fellow, Department of Bioorganic Chemistry, University of Virginia, Charlottesville, VA

1981-'84 Doctor of Engineering, Chemistry, Kyoto University, Kyoto, Japan

1979-'81 M.S., Chemistry, Kyoto University, Kyoto, Japan

1976-'79 B.S., Chemistry, Kyoto University, Kyoto, Japan.

## Professional Experience:

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2008 - Present, Principal Investigator, Institute of integrated cell-material Sciences (iCeMS), World Premier International Initiative, Kyoto, Japan

2003 - Present, Professor of Chemistry, Kyoto University, Kyoto, Japan  
Courses: Biochemistry II, IV (undergraduate), Chemical Biology of Nucleic Acids, Principle of Biofunctional Chemistry (graduate)

Research Topics: Construction of innovative biomaterials of synthetic physical organic chemistry and molecular biology by harnessing the chemical principles underlying the recognition, reactivity and structure of nucleic acids. Member: Chemical Society of Japan, American Chemical Society, The Society of Synthetic Organic Chemistry, Japan, The Molecular Biology Society of Japan,

- 1996-2003 Professor of Chemistry, Tokyo Medical and Dental University, Tokyo, Japan.
- 1993-'96 Associate Professor, Bioorganic Chemistry, Kyoto University, Kyoto, Japan.
- 1987-'93 Assistant Professor, Bioorganic Chemistry, Kyoto University, Kyoto, Japan.
- 1986-'87 JSPS Research Associate, Bioorganic Chemistry, Kyoto University, Kyoto, Japan.
- 1984-'86 Postdoctoral Fellow, Postdoctoral Fellow, Department of Bioorganic Chemistry, University of Virginia, Charlottesville, VA Research Advisor: Professor Sidney M. Hecht.
- 1976-'79 Undergraduate Research, Department of Chemistry, Kyoto University.

#### **Honors and Awards (Selected):**

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- 2018 CSJ Award (2017), The Chemical Society of Japan
- 2014 Distinguished Awardee, Technology Program for Innovative Biological Medicine
- 2011 Nagase Foundation Award
- 2005 The Chemical Society of Japan (**CSJ**) **Award** (2005) for creative work in fundamentals and applications of chemistry
- 1999 Nippon IBM Award
- 1999 Sagawa Cancer Research Foundation Award
- 1994 Research Foundation for Opto-Science and Technology Award
- 1994 Sumitomo Foundation Award
- 1993 KOWA Foundation Award for Young Scientist
- 1992 CIBA-GEIGY Foundation for the Promotion of Science Award
- 1991 Kawakami Foundation Award for Young Scientist
- 1990 Lecturer of Young Chemist of Japan Chemical Society
- 1987 Naito Foundation Award for Young Scientist

## List of Publications (Selected) :

1. Photochemical Determination of Different DNA Structures. Xu, Y.; Tashiro, Ryu.; Sugiyama, H. *Nat. Protoc.*, **2007**, *2*, 78-87.
2. State-of-the-Art High-Speed Atomic Force Microscopy for Investigation of Single-Molecular Dynamics of Proteins. Rajendran, A.; Endo, M.; Sugiyama, H. *Chem. Rev.* **2014**, *114*, 1493-1520.
3. Single-Molecule Imaging of Dynamic Motions of Biomolecules in DNA Origami Nanostructures Using High-Speed Atomic Force Microscopy. Endo, M.; Sugiyama, H. *Acc. Chem. Res.* **2014**, *47*, 1645-1653.
4. Single Molecule Visualization and Characterization of Sox2-Pax6 Complex Formation on a Regulatory DNA Element Using a DNA Origami Frame. Yamamoto, S.; De, D.; Hidaka, K.; Kim, K. K.; Endo, M.; Sugiyama, H. *Nano Lett.* **2014**, *14*, 2286-2292.
5. Mimicking Membrane-Related Biological Events by DNA Origami Nanotechnology. Suzuki, Y.; Endo, M.; Sugiyama, H. *ACS. Nano.* **2015**, *9*, 3418-3420.
6. A Synthetic DNA-Binding Domain Guides Distinct Chromatin-Modifying Small Molecules to Activate an Identical Gene Network. Han, L.; Pandian, G, N.; Chandran, A.; Sato, S.; Taniguchi, J.; Kashiwazaki, G.; Sawatani, Y.; Hashiya, K.; Bando, T.; Xu, Y.; Qian, X.; Sugiyama, H. *Angew. Chem. Int. Ed.* **2015**, *54*, 8700-8703.
7. Single-Molecule Visualization of the Activity of a Zn<sup>2+</sup>-Dependent DNAzyme. Endo, M.; Takeuchi, Y.; Suzuki, Y.; Emura, T.; Hidaka, K.; Wang, F.; Willner, I.; Sugiyama, H. *Angew. Chem. Int. Ed.* **2015**, *54*, 10550-10554.
8. A Novel Detection Technique of Polyamide Binding Sites by Photo-Induced Electron Transfer in BrU Substituted DNA. Saha, A.; Hashiya, F.; Kizaki, S.; Asamitsu, S.; Hashiya, K.; Bando, T.; Sugiyama, H. *Chem. Commun.* **2015**, *51*, 14485-14488.
9. Development of DNA Metalloenzymes Using a Rational Design Approach and Application in the Asymmetric Diels-Alder Reaction. Park, S.; Okamura, I.; Sakashita, S.; Yum, J, H.; Chiranjit, A.; Gao, L.; Sugiyama, H. *ACS Catal.* **2015**, *5*, 4708-4712.
10. Lipid-bilayer-assisted Two-dimensional Self-assembly of DNA Origami Nanostructures. Suzuki, Y.; Endo, M.; Sugiyama, H. *Nat. Commun.* **2015**, *6*, 1-9.
11. Measuring Chloride in Live Cells. Endo, M.; Sugiyama, H. *Nat. Nanotechnol.* **2015**, *10*, 569-570.
12. Single-Molecule Manipulation of the Duplex Formation and Dissociation at the G-Quadruplex/i-Motif Site in the DNA Nanostructure. Endo, M.; Xing, X. W.; Zhou, X.; Tomoko, E.; Hidaka, K.; Tuesuwan, B. Sugiyama, H. *ACS Nano.* **2015**, *9*, 9922-9929.
13. Examining Cooperative Binding of Sox 2 on DC 5 Regulatory Element upon Complex Formation with Pax 6 through Excess Electron Transfer Assay Saha, A .; Kizaki, S .; De D .; Endo, M .; Kim, K .; Sugiyama, H. *Nucleic Acids Res.* **2016** , *44* , e 125.
14. Targeting 24 bp within Telomere Repeat Sequences with Tandem Tetramer Pyrrole-Imidazole Polyamide Probes. Kawamoto, Y .; Sasaki, A .; Chandran, A .; Hashiya, K .; Ide, S .; Bando, T .; Maeshima, K Sugiyama, H. *J. Am. Chem. Soc.* **2016**, *138* , 14100-14107 .
15. Holliday Junction Resolvases Mediate Chloroplast Nucleoid Segregation Kobayashi, Y.; Misumi, O.; Odahara, M.; Ishibashi, K.; Hirono, M.; Hidaka, K.; Endo, M.; Sugiyama, H.; Iwasaki, H.; Kuroiwa, T.; Shikanai, T.; Nishimura, Y. *Science.* **2017**, *356*, 631-634.
16. Creation of a Synthetic Ligand for Mitochondrial DNA Sequence Recognition and Promoter-Specific Transcription Suppression. Hidaka, T.; Pandian, G.; Taniguchi, J.; Nobeyama, T.; Hashiya, K.; Bando, T.; Sugiyama, H. *J. Am. Chem. Soc.* **2017**, *139*, 8444-8447.
17. A Synthetic DNA-binding Inhibitor of SOX2 Guides Human Induced Pluripotent Stem Cells to Differentiate into Mesoderm, Taniguchi, J.; Pandian, G.; Hidaka, T.; Hashiya, K.; Bando, T.; Kim, K. K.; Sugiyama, H. *Nucleic Acids Res.* **2017**, *45*, 9219-9228.
18. Pip-HoGu, an Artificial Assembly with Cooperative DNA Recognition Capable of Mimicking Transcription Factor Pairs. Yu, Z.; Guo, C.; Wei, Y .; Hashiya, K .; Bando, T .; Sugiyama, H. *J. Am. Chem. Soc.* **2018**, *140*, 2426- 2429.
19. Biomimetic Artificial Epigenetic Code for Targeted Acetylation of Histones Taniguchi, J.; Feng, Y.; Pandian, G.; Hashiya, F.; Hidaka, T.; Hashiya, K.; Park, S.; Bando, T.; Ito, S.; Sugiyama, H. *J. Am. Chem. Soc.* **2018**, *140*, 7108-7115.