



HIDEO ANDO, Ph.D.

OFFICE

Ando Laboratory,
Department of Physics,
Faculty of Science,
Yamagata University,
Kojirakawa-Machi 1-4-12,
Yamagata 990-8560, Japan

PHONE

+81-23-628-4564

EMAIL

ando@sci.kj.yamagata-u.ac.jp

PERSONAL

Born: October 2, 1983 in Kyoto, Japan

Sex: Male

EDUCATION

MARCH 2013 PH.D. OF ENGINEERING

Department of Molecular Engineering, Graduate School of Engineering, Kyoto University, Japan

Thesis: "Molecular Insights into Spin Crossover Phenomena of 1st-Row Transition Metal Complexes"

Graduate Adviser: Hirofumi Sato and Shigeyoshi Sakaki

MARCH 2008 MASTER OF ENGINEERING

Department of Molecular Engineering, Graduate School of Engineering, Kyoto University, Japan

Thesis: "Theoretical Study on Electronic Structures and Transition Mechanism of Light-Induced Excited Spin State Trapping (LIESST) Complexes"

Graduate Adviser: Shigeyoshi Sakaki

MARCH 2006 BACHELOR OF ENGINEERING

Faculty of Engineering, Undergraduate School of Industrial Chemistry, Kyoto University, Japan

HONORS, AWARDS, AND FELLOWSHIPS

APRIL 2011 - MARCH 2012 & JANUARY 2013 - MARCH 2013

GLOBAL CENTER OF EXCELLENCE (GCOE) RESEARCH ASSISTANT

"Theoretical Study on Electron and Spin Transition in Transition-Metal Complexes"

APRIL 2008 - MARCH 2011

JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE (JSPS)
RESEARCH FELLOWSHIPS FOR YOUNG SCIENTISTS

"Theoretical Study on Electron Transition in Transition-Metal Complexes and Their Aggregates"

FEBRUARY 2011 SUPERIOR POSTER AWARD

51st Sanibel Symposium,

“Wavepacket Dynamics Study on Ultrafast Intersystem Crossing of Cr^{III}(acac)₃”

MARCH 2009 INSIDE COVER

Angew. Chem. Int. Ed.,

“Bidirectional Chemo-Switching of Spin State in a Microporous Framework”

SEPTEMBER 2007 BEST POSTER AWARD

Annual Meeting of Japan Society for Molecular Science 2007,
“Theoretical Study on Light-Induced Excited Spin State Trapping in Six-Coordinate Iron(II) Complexes”

RESEARCH EXPERIENCE

MARCH 2015 - PRESENT ASSISTANT PROFESSOR

Department of Physics, Yamagata University

APRIL 2013 - MARCH 2015 POSTDOCTORAL SCHOLAR

Department of Chemistry, University of California, Irvine

Adviser: Shaul Mukamel

APRIL 2011 - MARCH 2012 & JANUARY 2013 - MARCH 2013

GCOE RESEARCH ASSISTANT

Department of Molecular Engineering, Kyoto University

Adviser: Hirofumi Sato

Focus: Excited-state wave packet dynamics of ultrafast intersystem crossing

APRIL 2008 - MARCH 2011 JSPS RESEARCH FELLOW

Department of Molecular Engineering, Kyoto University

Adviser: Shigeyoshi Sakaki

Focus: Study of light-induced excited spin state trapping of transition-metal complexes with electronic structure theories (e.g., DFT, CASSCF/MRMP2, and ligand field theory),
Thermodynamic mechanism of guest-induced spin transition

APRIL 2006 - MARCH 2013 GRADUATE RESEARCH

Department of Molecular Engineering, Kyoto University

Adviser: Shigeyoshi Sakaki and Hirofumi Sato

PUBLICATIONS

1. W. Hua, S. Oesterling, J. D. Biggs, Y. Zhang, H. Ando, R. de Vivie-Riedle, B. P. Fingerhut, and S. Mukamel, "Monitoring Conical Intersections in the Ring Opening of Furan by Attosecond Stimulated X-ray Raman Spectroscopy", *Structural Dynamics* **3**, 023601 (2016).
2. B. K. Agarwalla, H. Ando, K. E. Dorfman, and S. Mukamel, "Stochastic Liouville Equations for Femtosecond Stimulated Raman Spectroscopy", *J. Chem. Phys.* **142**, 024115 (2015).
3. H. Ando, B. P. Fingerhut, K. E. Dorfman, J. D. Biggs, and S. Mukamel, "Femtosecond Stimulated Raman Spectroscopy of the Cyclobutane Thymine Dimer Repair Mechanism: A Computational Study", *J. Am. Chem. Soc.* **136**, 14801-14810 (2014).
4. H. Ando, S. Iuchi, and H. Sato, "Theoretical Study on Ultrafast Intersystem Crossing of Chromium(III) Acetylacetonate", *Chem. Phys. Lett.* **535**, 177-181 (2012).
5. J. A. Rodríguez-Velamazán, M. A. González, J. A. Real, M. Castro, M. C. Muñoz, A. B. Gaspar, R. Ohtani, M. Ohba, K. Yoneda, Y. Hijikata, N. Yanai, M. Mizuno, H. Ando, and S. Kitagawa, "A Switchable Molecular Rotator: Neutron Spectroscopy Study on a Polymeric Spin-Crossover Compound", *J. Am. Chem. Soc.* **134**, 5083-5089 (2012).
6. H. Ando, Y. Nakao, H. Sato, M. Ohba, S. Kitagawa, and S. Sakaki, "Theoretical Study on High-Spin to Low-Spin Transition of {Fe(pyrazine)[Pt(CN)₄]}: Guest-Induced Entropy Decrease", *Chem. Phys. Lett.* **511**, 399-404 (2011).
7. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, "Comparison of Electronic Structures and Light-Induced Excited Spin State Trapping between [Fe(2-picolyamine)₃]²⁺ and Its Iron(III) Analogue", *Dalton Trans.* **39**, 1836-1845 (2010).
8. M. Ohba, K. Yoneda, G. Agustí, M. C. Muñoz, A. B. Gaspar, J. A. Real, M. Yamasaki, H. Ando, Y. Nakao, S. Sakaki, and S. Kitagawa, "Bidirectional Chemo-Switching of Spin State in a Microporous Framework", *Angew. Chem. Int. Ed.* **48**, 4767-4771 (2009).
9. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, "Theoretical Study of Low-Spin, High-Spin, and Intermediate-Spin States of [Fe^{III}(pap)₂]⁺ (pap = N-2-pyridylmethylidene-2-hydroxyphenylaminato). Mechanism of Light-Induced Excited Spin State Trapping", *J. Phys. Chem. A* **111**, 5515-5522 (2007).

ORAL PRESENTATIONS

1. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, "Theoretical Study on the Mechanism of Light-Induced Excited Spin State Trapping of $[\text{Fe}(\text{pap})_2]^+$ ", 86th Annual Meeting of Chemical Society of Japan, Chiba, Japan, March 2006
2. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, "Theoretical Study on the Mechanism of Light-Induced Excited Spin State Trapping of $[\text{Fe}^{\text{III}}(\text{pap})_2]^+$ ", 56th Japan Society of Coordination Chemistry Symposium, Hiroshima, Japan, September 2006
3. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, "Theoretical Study on Light-Induced Excited Spin State Trapping of Six-Coordinate Iron(II) and Iron(III) Complexes", 87th Annual Meeting of Chemical Society of Japan, Osaka, Japan, March 2007
4. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, "Theoretical Study on Intersystem Crossing in Light-Induced Excited Spin State Trapping of Iron(II) Complexes", 57th Japan Society of Coordination Chemistry Symposium, Aichi, Japan, September 2007
5. H. Ando, Y. Nakao, H. Sato, K. Yoneda, M. Ohba, S. Kitagawa, A. B. Gaspar, J. A. Real, and S. Sakaki, "Theoretical Study on Guest-Induced Spin Transition of a Porous Iron(II) Platinum(II) Complex", 2nd Annual Meeting of Japan Society for Molecular Science, Fukuoka, Japan, September 2008
6. H. Ando, "Theoretical Study on Electron Transitions Induced by Light Irradiation or Guest Adsorption", 44th Seminar of Young Coordination Chemist's Association Japan, Osaka, Japan, June 2011, Invited Talk
7. H. Ando, Y. Nakao, H. Sato, M. Ohba, S. Kitagawa, and S. Sakaki, "Theoretical Study on Guest-Induced Spin Transition of $\{\text{Fe}(\text{pyrazine})[\text{Pt}(\text{CN})_4]\}$: Origin of Entropy Decrease", 61st Japan Society of Coordination Chemistry Symposium, Okayama, Japan, September 2011
8. H. Ando, Y. Nakao, H. Sato, M. Ohba, S. Kitagawa, and S. Sakaki, "Theoretical Study on Guest-Induced Spin Transition of $\{\text{Fe}(\text{pyrazine})[\text{Pt}(\text{CN})_4]\}$ ", 5th Annual Meeting of Japan Society for Molecular Science, Hokkaido, Japan, September 2011
9. S. Sakaki, M. Deshmukh, H. Ando, Y. Nakao, H. Sato,

“Theoretical Study of Gas-Adsorption to Metal-Organic-Framework (MOF)”, 7th Congress of the International Society for Theoretical Chemical Physics, Tokyo, Japan, September 2011

10. S. Mukamel, Y. Zhang, W. Hua, J. D. Biggs, K. Dorfman, H. Ando, B. Fingerhut, “A Unified Approach to Time-Resolved Broadband Stimulated Raman Spectroscopy; Application to DNA Repair and Core Excitations”, XXIV International Conference on Raman Spectroscopy, Jena, August 2014

11. H. Ando, “Theoretical Studies of Femtochemistry: DNA Repair and Intersystem Crossing of a Cr Complex”, Molecular Theoretical Chemistry Seminar, Kyoto, Japan, December 2014

Invited Talk

10. B. Fingerhut, H. Ando, K. E. Dorfman, J. D. Biggs, S. Mukamel, “Cyclobutane Thymine Dimer Repair Mechanism Probed by Femtosecond Stimulated Raman Spectroscopy”, MPM Conference, Nantes, April 2015

POSTER PRESENTATIONS

1. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, “A Theoretical Study of the Mechanism of Light-Induced Excited Spin State Trapping in $[\text{Fe}^{\text{III}}(\text{pap})_2]^+$ ”, XIIth International Congress of Quantum Chemistry (ICQC), Kyoto, Japan, May 2006

2. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, “Theoretical Study on the Mechanism of Spin Transitions of Iron(II) and Iron(III) Complexes”, 56th Japan Society of Coordination Chemistry Symposium, Hiroshima, Japan, September 2006

3. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, “Theoretical Study on Light-Induced Excited Spin State Trapping of Six-Coordinate Iron(II) and Iron(III) Complexes”, Symposium on Molecular Structure and Dynamics 2006, Shizuoka, Japan, September 2006

4. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, “Theoretical Study on Light-Induced Excited Spin State Trapping of Six-Coordinate Iron(II) and Iron(III) Complexes”, 10th Theoretical Chemistry Symposium, Aichi, Japan, May 2007

5. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, “Theoretical Study on Light-Induced Excited Spin State Trapping in Six-Coordinate Iron(II) Complexes”, 1st Annual Meeting of Japan Society for Molecular Science, Miyagi, Japan, September 2007,

Awarded the Poster Prize

6. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, "Electronic Structures and Spin Transition Mechanism of a LIESST Complex, $[\text{Fe}^{\text{II}}(\text{pic})_3]^{2+}$ ", 1st International Conference of the Grand Challenge to Next-Generation Integrated Nanoscience, Tokyo, Japan, June 2008
7. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, "Electronic Structures and Spin Transition Mechanism of a LIESST Complex, $[\text{Fe}(\text{pic})_3]^{2+}$ ", 2nd International Symposium on Molecular Theory for Real Systems, Aichi, Japan, August 2008
8. H. Ando, Y. Nakao, H. Sato, and S. Sakaki, "Spin Transition Mechanism and New Necessary Condition of LIESST: DFT Study of $[\text{Fe}(\text{2-pic})_3]^{2+}$ ", World Association of Theoretical and Computational Chemists (WATOC) 2008, Sydney, Australia, September 2008
9. H. Ando, Y. Nakao, H. Sato, K. Yoneda, M. Ohba, S. Kitagawa, A. B. Gaspar, J. A. Real, and S. Sakaki, "Theoretical Study on Guest-Induced Spin Transition of a Porous Iron(II) Platinum(II) Polymer", 58th Japan Society of Coordination Chemistry Symposium, Ishikawa, Japan, September 2008
10. H. Ando, Y. Nakao, H. Sato, K. Yoneda, M. Ohba, S. Kitagawa, A. B. Gaspar, J. A. Real, and S. Sakaki, "Guest-Induced Spin Transition in a Microporous Coordination Polymer, $\{\text{Fe}^{\text{II}}(\text{pz})[\text{Pt}^{\text{II}}(\text{CN})_4]\}$ ", XIIIth International Congress of Quantum Chemistry (ICQC), Helsinki, Finland, June 2009
11. H. Ando, H. Sato, and S. Iuchi, "Wavepacket Dynamics Study on Ultrafast Intersystem Crossing of $\text{Cr}^{\text{III}}(\text{acac})_3$ ", 51st Sanibel Symposium, Georgia, USA, February 2011,
Awarded the Poster Prize