

Oral Presentation

Nov. 21 (Fri) Room A

Opening (9:50 ~ 9:55)

9:55 【Presentation Award Candidates】 (Chair: Kiminori Maeda)

J-1 Accurate EPR oxygen mapping using TV regularization

○Yohei Kudo¹, Shingo Matsumoto², Hiroshi Hirata²

¹Grad. Sch. of Info. Sci. and Tech. Hokkaido Univ.; ²Fac. of Info. Sch. and Tech. Hokkaido Univ.

J-2 Characterization of anion radical formation of halogenated phthalocyanine derivatives

○Yuto Goto, Osamu Inanami, Mikako Ogawa

Grad. Sch. of Pharm. Sci., Hokkaido Univ.

J-3 Oxygen partial pressure measurement based on relaxation times using OX071 and 750 MHz CW-EPR

○Misa Oba¹, Shingo Matsumoto², Hiroshi Hirata²

¹Grad. Sch. of Info. Sci. and Tech.; ²Facul. of Info. Sci. and Tech., Hokkaido Univ.

J-4 ESR study on charges accumulated by gate voltage in organic photoelectrochemical transistors

○He Wenhao¹, Wang Jiayi¹, Shimoi Yukihiro^{1,2}, Marumoto Kazuhiro^{1,2,3}

¹Dep. Mater. Sci., Univ. of Tsukuba; ²OIQSST, Univ. of Tsukuba; ³TREMS, Univ. of Tsukuba

J-5 Structural and functional analysis of the S₂ State (*g* ~ 5) of the Mn₄CaO₅ cluster in photosystem II by EPR spectroscopy

○Shinya Kosaki¹, Yoshiki Nakajima², Jian-Ren Shen², Hiroyuki Mino¹

¹Grad. Sch. Sci., Nagoya Univ.; ²Res. Inst. Interdiscip. Sci., Okayama Univ.

Lunch (11:50 ~ 13:00)

13:00 【Oral】 (Chair: Tomoaki Miura)

1A-01 Crystal size effect on singlet fission dynamics in rubrene orthorhombic crystals

Yusuke Wakikawa¹, Kazuma Kachi¹, Tadaaki Ikoma^{2,3}

¹Shizuoka Inst. of Sci. and Tech; ²Grad. Sch. of Sci., Niigata Univ; ³CCRF, Niigata Univ.

1A-02 Effect of CISS on the magnetoreception by cryptochrome

○Yasuhiro Kobori, Misato Hamada, Tatsuya Iwata, Hiroki Nagashima, Stefan Weber
Molecular Photoscience Research Center, Kobe Univ.

(Chair: Yusuke Wakikawa)

1A-03 Recent advances in magnetic field effects due to excited triplet states

Reina Konaka¹, Yusei Jin¹, Syohei Ishii², Kousei Kitajima², Tadaaki Ikoma^{1,2}, ○Tomoaki Miura^{1,2}
¹Grad. Sch. of Sci. and Tech., Niigata Univ.; ²Fac. of Sci., Niigata Univ.

Break (14:00 ~ 14:10)

1A-04 Electronic states of a chromic NAD⁺-Type Co-dioxolene complex

○Kodai Tsubokawa, Kiyoshi Tsuge, Hideki Ohtsu
Grad. Sch. of Sci. and Eng., Toyama Univ.

1A-05 Time-resolved spectroscopy of magnetoresponsive fluorescent protein MagLOV

○Shogo Ono, Noboru Ikeya, Woodward Jonathan
Grad. Sch. of Arts and Sci., Tokyo Univ.

1A-06 Control of liquid crystalline capsule by magnetic field

○Yoshiaki Uchida
Grad. Sch. Eng. Sci., Univ. Osaka

Poster Presentation (15:10~17:30)

Board meeting with extended members(17:30 ~ 18:30)

Nov. 21 (Fri) Room B

13:00 【Oral】 (Chair: Miho Emoto)

1B-01 Dynamics of epigenetic reader heterochromatin 1 (HP1) during phase separation, as studied by ESR spectroscopy

I. Suetake^{2,3}, K. Sato¹, T. Sugishita², T. Takei², Y. Mishima², M. Miyata¹, T. Takui¹, T. Fujiwara², Y. Matsuki²,
H. Hojo², ○T. Arata^{1,2}

¹Grad. Sch. Sci., Osaka Met. Univ.; ²IPR, Osaka. Univ.; ³Grad. Sch. Home Economics, Kobe Women's Univ.

1B-02 Unique active site in inorganic pyrophosphatase

○Masaki Horitani^{1,2}

¹Fac. Agri, Saga Univ.; ²Unit. Grad. Sch. Agri. Sci., Kagoshima Univ.

1B-03 Development of the MRI contrast agent of organic NO radicals to establish the quantitative method for in vivo reductant

○Naoko Iizuka¹, Yuto Kawai¹, Kazuteru Usui¹, Daisuke Yoshihara², Tatsuya Naganuma³, Satoru Karasawa¹

¹Grad. Sch. Pharm. Sci., Showa Pharm. Uni.; ²ISIT.; ³Japan REDOX.

Break (14:00 ~ 14:10)

(Chair: Masaki Horitani)

1B-04 Observation of radical polymerization reactions using time-resolved ESR and photoinitiators

○Atsushi Kajiware

Nara Univ. of Education

1B-05 ESR spectra of bis(iminonitroxide) biradicals dispersed in PMMA polymer

○Hirokazu Kobayashi¹, Kento Akiniwa², Fumiyasu Iwahori³, Hidehiko Honda¹, Masato Yamamoto¹

¹Fac. Of Arts and Sci., Showa Med. Univ.; ²Grad. Sch. Of Integrated Basic Sci., Nihon Univ.; ³Col. Humanities and Sci., Nihon Univ.

Poster Presentation (15:10~17:30)

Early-Career Researchers' Meeting (17:30 ~ 18:30)

Nov. 22 (Sat) Room A

9:20 【Plenary lecture】 (Chair: Tadaaki Ikoma)

PL-01 Spins in action: Advanced EPR approaches to biology, catalysis, and quantum systems

○Sun Hee Kim

Metropolitan Seoul Center, KBSI

Break (10:10~10:20)

10:20 【Symposium: Spin and Quantum Aspects of Biological Systems】 (Chair: Hiroki Nagashima & Ikuo Nakanishi)

2S-01 Elementary reaction rate constants of free radicals measured by spin echo observation using pulsed ESR spectroscopy

Hiroki Hirano, Masatoshi Kato, Kaito Marumo, Hirona Takahashi, Yusuke Miyake, Ikuo Nakanishi, ○Akio Kawai

Dep. of Chem., Kanagawa Univ.; Okayama Sci. Univ.; Kyoto Inst. of Tech.; Inst. of Quantum Life Sci.

2S-02 Microscopic tools for studying radical pairs in biological systems

Noboru Ikeya, Shogo Ono, ○Jonathan Woodward

Grad. Sch. of Arts and Sci., Tokyo Univ.

2S-03 Discovery of hidden magnetic property in iron-sulfur proteins using ESR and SAXS

○Shigeki Arai^{1*}, Shogo Soga², Ryoma Kobayashi¹, Mitsuhiro Hirai³, Kiminori Maeda², Hiroki Nagashima^{1,2*}

*These two authors contributed equally to this work.

¹Inst. Quantum Sci. Tech., QST; ²Grad. Sch. Sci. Eng., Saitama Univ.; ³Grad. Sch. Sci. Tech., Gunma Univ.

2S-04 Complementary relationship in protein molecule structure analysis and spin structure analysis

○Hiroyuki Mino

Grad Sch. Sci., Nagoya Univ.

Lunch / Editorial Committee / Awards Committee (12:00~13:00)

General assembly (13:00 ~ 14:00)

Break (14:00 ~ 14:10)

14:10 【Award lecture 1】 (Chair: Hironobu Yasui)

Y-01 The development of 4D EPR spectroscopic mapping and its application in biomedical studies

○Hiroshi Hirata

Facul. Info. Sci. & Tech., Hokkaido Univ.

14:50 【Award lecture 2】 (Chair: Keizo Takeshita)

Y-02 Development and application of technology for the detection of lipid radicals and oxidized lipids

○Ken-ichi Yamada

Fac. of Pharm., Kyushu Univ

Break (15:30 ~ 15:40)

15:40 【Award lecture 3】 (Chair: Yasuhiro Kobori)

Y-03 Spin dynamics in triplet pairs

○Tomoaki Yago

Grad. Sch. of Sci. and Eng., Saitama Univ.

16:10 【Award lecture 4】 (Chair: Hisao Murai)

Y-04 Development of high-sensitivity microspectropic methods and spin dynamics software for investigating quantum spin effects in flavin-based radical pairs

○Lewis M. Antill

Sungkyunkwan Univ.

Presentation award and Poster Award Ceremony (16:30 ~ 16:45)

Break (16:45~16:55)

16:55 【Oral】 (Chair: Jonathan Woodward)

2A-01 Dynamic nuclear polarization NMR by surface electrons on nanodiamonds and its sample dependence

○Ken Kato^{1, 2}, Hajime Tamaki¹, Yoh Matsuki^{1, 3}

¹IPR, Univ. Osaka; ²NINS; ³QIQB, Univ. Osaka

2A-02 ESR direct observation of spin gap at magnetization plateau of distorted diamond spin chain

○Toru Sakai

Hyogo Univ.

2A-03 Development of highly-sensitive detection for fluorine-containing compounds via photo-chemically induced dynamic nuclear polarization (photo-CIDNP)

○Shoya Shiromizu¹, Yuta Sawada², Koki Nishimura², Nobuhiro Yanai², Masayuki Matsuo¹, Fuminori Hyodo¹

¹Grad. Sch. Med., Gifu Univ.; ²Grad. Sch. Sci., Tokyo Univ.

Banquet (18:30~20:30)

Nov. 22 (Sat) Room B

10:20 【Oral】 (Chair: Yugo Oshima)

2B-01 High-frequency ESR measurements of spin frustration magnet $\text{CoCu}_3(\text{OH})_6\text{Cl}_2$

○Susumu Okubo^{1, 2}, Yuma Hosomi², Hithoshi Ohta¹, Shunpei Kojima³, Yutaka Fujii⁴, Hikomitsu Kikuchi^{1, 4}

¹Mol. Photoscience Res. Center, Kobe Univ.; ²Grad. Sch. of Sci., Kobe Univ.; ³Dep. Appl. Phys., Univ of Fukui;

⁴FIR Center, Univ. of Fukui,

2B-02 Characterization of cylindrical dielectric antennas for enhancing terahertz oscillating magnetic fields

○Yuma Igo¹, Hiroki Kudo², Eiji Ohmichi¹

¹Grad. Sch. of Sci., Kobe Univ.; ²Fac. of Sci., Kobe Univ.

2B-03 ESR measurements of triangular cupola antiferromagnet SrCu(OH)₃Cl II

○Takaya Matsumura¹, Shigeo Hara², Takahiro Sakurai³, Susumu Okubo^{1,4}, Hitoshi Ohta⁴, Fusako Kon⁵,
Hiroyuki K. Yoshida⁵

¹Grad. Sch. of Sci., Kobe Univ.; ²Res. Fac. Center for Sch. and Tech., Kobe Univ.; ³Core Fac. of Center, The Univ. of Osaka; ⁴Mol. Photoscience. Res. Center, Kobe Univ.; ⁵Grad. Sch. of Sci., Hokkaido Univ.

(Chair: Susumu Okubo)

2B-04 Anisotropic spin dynamics in a quantum spin liquid candidate: hidden one-dimensionality in a triangular lattice

○Yugo Oshima¹, Yasuyuki Ishii², Francis. L. Pratt³, Isao Watanabe¹, Hitoshi Seo¹, Takao Tsumuraya⁴,
Tsuyoshi Miyazaki⁵, Reizo Kato¹

¹RIKEN; ²SIT; ³ISIS; ⁴Kumamoto Univ.; ⁵NIMS

2B-05 Development of ground-state singlet biradicals capable of intramolecular diamagnetic/paramagnetic switching

○Mahiro Somei, Takayuki Ishida

Grad. Sch. of Info. and Eng., The Univ. of Electro-Communications

2B-06 Analysis of organic ferromagnetic materials based on bis(biphenyl) nitroxides

○Akane Hase, Takayuki Ishida

Grad. Sch. of Info. and Eng., The Univ. of Electro-Communications

Lunch (11:55 ~ 13:00)

16:55 【Oral】 (Chair: Kazuhiro Marumoto)

2B-07 Radical intermediates in photocatalytic activation of carboxylic acids: A spin trapping study

Riko Maruyama¹, Gunik Lee¹, Haifan Huang², Hisao Yoshida², ○Jun Kumagai³

¹Grad. Sch. Eng., Nagoya Univ.; ²Grad. Sch. Human Environ., Kyoto Univ.; ³IMaSS, Nagoya Univ.

2B-08 Proton-polarized small-angle neutron scattering study of nano-ice crystals in frozen sugar solutions

○Takayuki Kumada

JAEA

2B-09 ESR analyses of high-spin Mn-complexes ($S = 5/2$): Extending the effective true relations to hyperfine interaction parameters

○Takeshi Yamane^{1,2}, Kenji Sugisaki^{1,2,3,4,5,6}, Kazunobu Sato¹, Kazuo Toyota¹, Daisuke Shiomi¹, Satoshi Takebayashi⁷, Takeji Takui¹

¹Grad. Sch. Sci., Osaka Met. Univ.; ²Quantum Comp. Center, Keio Univ.; ³Grad. Sch. Sci. Tech., Keio Univ.;

⁴KSQAIC, Keio Univ. ⁵CQuERE TCG-CREST; ⁶JST-CREST; ⁷Sci. Tech. G., OIST

Nov. 23 (Sun) Room A

9:20 【Symposium: Spin and Computational Chemistry: Practical Approaches to Magnetic Parameters and Fluctuations】 (Chair: Kiminori Maeda and Motoko Asano)

3S-01 Synergistic approach to transient radical analysis: Time-resolved EPR experiments and quantum chemical calculations

○Masaaki Fuki

Mol. Photo. Sci. Res. Center, Kobe Univ.

3S-02 Understanding magnetic parameters and electronic structures of paramagnetic molecules with the help of quantum chemical calculations

○Kazunobu Sato

Grad. Sch. of Sci, Osaka Metropolitan Univ.

3S-03 Electron spin dynamics in quantum chemistry: transitions, polarization, and relaxation

○Yuki Kurashige

Kyoto Univ.

Break (10:35-10:45)

3S-04 Theoretical calculation of zero-field splitting by the SAC-CI method

○Kazuo Toyota

Osaka Metropolitan Univ.

3S-05 Spin dynamics of radical pairs and molecular dynamics calculation

○Kiminori Maeda

Grad. Sch. of Sci. and Eng., Saitama Univ.

3S-06 Molecular dynamics simulation of radical pairs in the binding pocket of bovine serum albumin

○Yasuhiro Matsunaga^{1,2}

¹Grad. Sch. of Sci. and Eng., Saitama Univ.; ²R-CCS, RIKEN

Closing (11:55 ~ 12:05)

Lunch on seminar (12:05 ~ 13:05)

Nov. 23 (Sun) Room B

9:20 【Oral】 (Chair: Ken Kato)

3B-01 EPR imaging studies of mice using nitroxide probes with acetoxymethyl groups

○Miho C Emoto ¹, Hideo Sato-Akaba², Hirotada Fujii³

¹School of Med. Tech., Health Sci. Univ. of Hokkaido; ²Grad. Sch. of Eng., Shizuoka Univ.; ³Advanced Research Promotion Center, Health Sci. Univ. of Hokkaido

3B-02 Development and optimization of a low-power OMRI method for *in vivo* measurements

○Ayano Enomoto, Kazuhiro Ichikawa

Fac. of Pharm. Sci., Nagasaki Int'l Univ.

3B-03 Direct ESR observation of interfacial charge accumulation in PEAI-interface-modified lead perovskite solar cells

○Liqi Liu¹, Yizhou Chen¹, Atsushi Sato¹, Seira Yamaguchi¹, Kazuhiro Marumoto^{1,2,3}

¹Dep. Mater. Sci., Univ. of Tsukuba; ²OIQSST, Univ. of Tsukuba; ³TREMS, Univ. of Tsukuba

3B-04 Evaluation of molecular orientation in non-fullerene organic solar cells by ESR spectroscopy

○Atsushi Sato¹, Seira Yamaguchi^{1,2}, Itaru Osaka³, Kazuhiro Marumoto^{1,2,4}

¹Dep. Mater. Sci., Univ. of Tsukuba; ²OIQSST, Univ. of Tsukuba; ³Hiroshima Univ.; ⁴TREMS, Univ. of Tsukuba

Break (10:35-10:45)

(Chair: Shojiro Kimura)

3B-05 ESR study on charge transfer at the interface between hole transport layer and Sn-Ge perovskite

○Zhang Xubo¹, Liqi Liu¹, Yizhou Chen¹, Atsushi Sato¹, Kazuhiro Marumoto^{1,2,3}

¹Dep. Mater. Sci., Univ. of Tsukuba; ²OIQSST, Univ. of Tsukuba; ³TREMS, Univ. of Tsukuba

3B-06 Possible contribution of radical pairs to the magnetic field effect in ISCA1

○Hiroki Nagashima^{1,2}, Shogo Soga¹, Kiminori Maeda¹, Shigeki Arai²

¹Grad. Sch. Sci. Eng., Saitama Univ.; ²Inst. Quantum Sci. Tech., QST

3B-07 Direct and real-time radical detection in a standard electrochemical cell using an EPR-on-a-chip sensor

○Takuma Sato¹, Kaltum Abdiaziz¹, Silvio Künstner, Anh Chu³, Michal Kern³, Jens Anders³, Klaus Lips², Alexander Schnegg¹

¹MPI CEC; ²HZB ASPIN; ³Univ. Stuttgart

3B-08 Synthesis and physical properties of liquescent dihydrophenazine radical cation salts

○Ritsuki Tanaka¹, Takeshi Naota¹, Takayuki Ishida², Shuichi Suzuki¹

¹Univ. of Osaka; ²Univ. of Electro-Communications

Lunch (12:05 ~ 13:05)