



Dr. Je Hoi Mun - Curriculum Vitae

Jan 02, 2025

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Date of Birth	19th December 1986	Email1	wpghl1219@gmail.com
Nationality	Republic of Korea	Email2	jehoi.mun@samsung.com

Education

2005/03–2006/03 Japanese education - Korea-Japan joint government scholarship program (KJSP)
2006/04–2010/03 Bachelor of Physics - Chiba University, Japan (KJSP)
2010/04–2012/03 Master of Physics - The University of Tokyo, Japan
2012/04–2015/03 PhD in Physics - The University of Tokyo, Japan
PhD thesis Defense on January 30th 2015 (<https://ci.nii.ac.jp/naid/500000962985.amp>)

Honors

2005/03–2010/03 Korea-Japan joint government scholarship program
2012/02–2015/03 ALPS (Advanced Leading Graduate Course for Photon Science) of MEXT (Ministry of Education, Culture, Sports, Science and Technology-Japan)

Work experience

Academic carrier

2015/04–2019/10 Research fellow - Center for Relativistic Laser Science,
Institute for Basic Science (IBS),
including the mandatory military service period of (2015/05–2018/05)
2019/11–2022/08 Group leader - Max Plank POSTECH/Korea Research Initiative
2020/03–2022/08 Adjunct Professor - POSTECH

Industrial carrier

2022/09–current Staff engineer - Samsung electronics, Mechatronics Research

Research area and skills

1. Strong-field-induced excitation dynamics of atoms and molecules, and their experimental observations (High-harmonic generation, Velocity map imaging spectroscopy).
2. Generation of few-optical-cycled laser pulse and the pulse measurement.
3. Rovibrational and electronic dynamics of molecules studied by XFEL or/and IR pulses.
4. Numerical simulations of molecular dynamics.
5. Numerical studies on laser-plasma interaction.
6. EUV technology.
7. Microprocessing

Grants

National Research foundation (Young Researcher Program)

2020/03/01–2023/02/28 (150 milion Won per year)

Project title : Strong-field-induced exciation dynamics of matter, and its application.

Journal review

The Optical Society of America (OSA)

Publication list

The author name is underlined for the first- or corresponding-authored papers.

Submitted

[20] Compact laser pulse compression method realized with a 1-mJ 3-kHz laser in a vacuum-free setup
Je Hoi Mun^{*}, Meenkyo Seo, Jaek Heo, Tsendsuren Khurelbaatar, Jea-il Kim, Dong Eon Kim^{*} (in review (Optics express),)

^{*}: Corresponding.

Published

[19] Quantum-optical radiative recombinations between electrons and ions analyzed with the semiclassical picture

Je Hoi Mun^{*}, Sung-Ho Jang, and Sang Ki Nam^{*}

(Physical Review A, 110, 043115, (2024))

^{*}: Corresponding.

[18] High-efficiency near-infrared optical parametric amplifier for intense, narrowband THz pulses tunable in the 4 to 19 THz region

Meenkyo Seo, **J. H. Mun**, Jaek Heo, Dong Eon Kim^{*}

(Scientific Reports, 12, 16273, (2022))

[17] All-optical control of pendular qubit states with nonresonant two-color laser pulses

Je Hoi Mun^{*}, Shinichirou Minemoto, Dong Eon Kim, Hirofumi Sakai, (Communications Physics, 5, 226, (2022))

^{*}: Corresponding.

[16] Ultrafast x-ray photoelectron diffraction from free molecules: Simulations of diffraction profiles from transient intermediates in the elimination reaction of C₂H₄I₂

S. Minemoto, **J. H. Mun**, T. Teramoto, A. Yagishita^{*}, and S. Tsuru

((Journal of Electron Spectroscopy and Related Phenomena, 258, 147221, (2022))

[15] Basic studies toward ultrafast soft x-ray photoelectron diffraction; its application to probing local structure in iodobenzene molecules

T. Teramoto, S. Minemoto, T. Majima, T. Mizuno, **J. H. Mun**, A. Yagishita^{*}, P. Decleva, and S. Tsuru

(Structural Dynamics, 9(2), 024303, 2022)

[14] Time-dependent unitary transformation method in the strong-field-ionization regime with the Kramers-Henneberger picture

Je Hoi Mun^{*}, Hirofumi Sakai, Dong Eon Kim

(International Journal of Molecular Science, 22(16), 8514 (2021))

doi: 10.20944/preprints202106.0678.v1

*: Corresponding.

[13] Realization of a Continuously Phase-Locked Few-Cycle Deep-UV/XUV Pump-Probe Beamline with Attosecond Precision for Ultrafast Spectroscopy
Kh. Tsendsuren, Alexander Gliserin, **Je Hoi Mun**, Jaek Heo, Yunman Lee and Dong Eon Kim*,
Applied Sciences, **11**, 6840, (2021).

[12] Few-Cycle, μ J-Class, Deep-UV Source from Gas Media
Kh. Tsendsuren[†], **Je Hoi Mun**[†], Jaek Heo, Yunman Lee and Dong Eon Kim*,
Applied Sciences, **11**, 6640, (2021).
[†]: **Equally contributed.**

[11] Photoelectron angular distribution studies for two spin-orbit-split components of Xe 3d subshell: a critical comparison between theory and experiment
S. Minemoto, T. Teramoto, T. Majima, T. Mizuno, **J. H. Mun**, S. H. Park, S. Kown, A. Yagishita, and D. Toffoli,
Journal of Physics B **54**, 105003 (2021).

[10] Field-free molecular orientation by delay- and polarization-optimized two fs pulses
Je Hoi Mun*, Dong Eon Kim*, Scientific reports **10**, 1 (2020).
*: Corresponding.

[9] Path integral formulation of light propagation in a static collisionless plasma, and its application to dynamic plasma
Je Hoi Mun*, Cheonha Jeon, and Chang-Mo Ryu*
Opt. Express, **28**, 6417 (2020).
*: Corresponding.

[8] Development of a plasma shutter applicable to 100-mJ-class, 10-ns laser pulses and the characterization of its performance.
Je Hoi Mun, Shinichirou Minemoto, and Hirofumi Sakai*, Opt. Express **27**, 19130 (2019).

[7] Generation of a single-cycle pulse using a two-stage compressor and its temporal characterization using a tunnelling ionization method
Sung In Hwang, Seung Beom Park, **Je Hoi Mun**, Wosik Cho, Chang Hee Nam and Kyung Taec Kim*,
Scientific Reports **9**, 1613 (2019).

[6] Orientation of linear molecules in two-color laser fields with perpendicularly crossed polarizations
Je Hoi Mun*, Hirofumi Sakai*, and Rosario González-Férez*
Phys. Rev. A **99**, 053424 (2019).
*: Corresponding.

[5] Strong-field-approximation model for coherent extreme ultraviolet emission generated through frustrated tunneling ionization
Je Hoi Mun, Igor A. Ivanov, Chang Hee Nam and Kyung Taec Kim*
Phys. Rev. A **98**, 063429 (2018).

[4] Coherent extreme ultraviolet emission generated through frustrated tunneling ionization
Hyeok Yun[†], **Je Hoi Mun**[†], Sung In Hwang, Seung Beom Park, Igor A. Ivanov, Chang Hee Nam, and Kyung Taec Kim*
Nature Photonics **12**, 620-624 (2018).
[†]: **Equally contributed.**

[3] Improving molecular orientation by optimizing relative delay and intensity of two-color laser pulse
Je Hoi Mun and Hirofumi Sakai*
Phys. Rev. A **98**, 013404 (2018).
*: Corresponding.

[2] Laser-field-free three-dimensional molecular orientation
Daisuke Takei, **Je Hoi Mun**, Shinichirou Minemoto, and Hirofumi Sakai
Phys. Rev. A **94**, 013401 (2016).

[1] Laser-field-free orientation of state-selected asymmetric top molecules
Je Hoi Mun, Daisuke Takei, Shinichirou Minemoto, and Hirofumi Sakai
Phys. Rev. A **89**, 051402(R) (2014).

Conference

International

Je Hoi Mun and Chang Hee Nam
Coherent control of rotational and electronic dynamics of molecules
2019/07/8 28th Annual International Laser Physics Workshop (LPHYS'19) (Gyeongju)
(Invited)

Je Hoi Mun, Igor A. Ivanov, Hyeok Yun, Kyung Taec Kim
Strong field approximation model for frustrated tunneling ionization and subsequent free induction decay
2018/07/27 International Conference of Atomic Physics (ICAP) 2018 (Barcelona)

Domestic

Je Hoi Mun
Ultrafast spectroscopy for studying nonperturbative excitation of atoms and molecules
2020/08/17 ALTA 2020 (Online conference)
(Invited)

MUN Je Hoi, YUN Hyeok, IVANOV Igor, KIM Kyung Taec
Population transfer between bound states via continuum states observed by attosecond lighthouse measurement
2016/10/19 The Korean Physical Society (Kimdaejung convention center)

Japanese

文 堤 會, 峰本 紳一, 酒井 文
100 mJクラス 10 nsレザパルスに適用可能なプラズマシヤッタの開と留電場度の評
2019/09/19 用物理 (北海道大札幌キャンパス)

Je Hoi Mun, Hirofumi Sakai, and Rosario González-Férez
Orientation of linear molecules by two-color laser fields with orthogonal polarizations
2019/09/19 用物理 (北海道大札幌キャンパス)

Je Hoi Mun, Hyeok Yun, Sung In Hwang, I. A. Ivanov, Chang Hee Nam, and Kyung Taec Kim
Coherent extreme-ultraviolet emission generated through frustrated tunneling ionization, studied by strong field approximation
2019/09/19 用物理 (北海道大札幌キャンパス)

Je Hoi Mun, Cheonha Jeon, and Chang-Mo Ryu
Path-integral approach on light reflection from a plasma surface
2019/09/18 用物理 (北海道大札幌キャンパス)

Je Hoi Mun and Hirofumi Sakai
Improving molecular orientation by optimizing relative delay and intensities of two-color laser pulses

2018/03/19 用物理 (早田大 早田キャンパス)

文 堤會 夏 沛宇, 峰本 紳一 酒井 文
態選別した分子のフィールドフリ配向制御
2015/03/14 用物理 (東海大 湘南キャンパス)

文 堤會 峰本 紳一 酒井 文
回量子態を選別した分子の完全にフィールドフリな況下での配向制御
2015/01/12 レザ (東海大 高輪キャンパス)

文 堤會 室谷 悠太 峰本 紳一 酒井 文
態選別した分子の完全にフィールドフリな条件下での配向制御
2014/09/19 用物理 (北海道大 札幌キャンパス)

Jehoi Mun, Daisuke Takei, Shinichirou Minemoto, and Hirofumi Sakai
Laser-field-free orientation of quantum-state-selected asymmetric top molecules
December 26, 2013 The first ALPS (Advanced Leading Graduate Course for Photon Science)

文 堤會 武井 大祐 峰本 紳一 酒井 文
回量子態を選別した非コマ分子のレザ電場のない況下での配向制御
2013/03/27 日本物理 (島大 東島キャンパス)

文 堤會 武井 大祐 峰本 紳一 酒井 文
回量子態選別された分子のレザ電場のない況下での配向制御
2013/01/29 レザ (路商工議所)

文 堤會 武井 大祐 峰本 紳一 酒井 文
態選別した分子のレザ電場のない況下での配向制御
2012/09/03 用物理 (松山大 文京キャンパス)

文 堤會 峰本 紳一 酒井 文
回量子態選別による分子の配向度の向上
2012/03/17 用物理 (早田大 早田キャンパス)

Jehoi Mun, Shinichirou Minemoto, Tetsuro Hoshino, Ryo Yamashiro, Tomoya Mizuno, Akira Yagishita,
Enhancement of the degree of orientation with quantum-state-selected molecules
2011/11/14 第4回文部科省「最先端の光の創成を目指したネットワーク究点プログラム」

文 堤會 星野 哲朗 峰本 紳一 山城 亮 水野 智也 柳下 明、
酒井 文
回量子態を選別した分子の配向制御
2011/08/30 用物理 (山形大 小白川キャンパス)

Jehoi Mun, Midai Suzuki, Ryo Yamashiro, Tetsuro Hoshino, Tomoya Mizuno, Shinichirou Minemoto,
Toshio Kasai, Akira Yagishita, Hirofumi Sakai,
Development of a hexapole focuser for controlling molecular orientation
2011/06/09 第27回化反討論 (東京工業大 大岡山キャンパス)