Curriculum Vitae

updated @1 November 2024

PERSONAL

MK Speaker

Name	Jehyun Lee (이제현, 李濟鉉)
Born	24. Feb. 1979, Seoul, Republic of Korea
e-mail	jehyun.lee@gmail.com
github	https://github.com/jehyunlee/
blog (Tech)	https://jehyunlee.github.io/
blog (Book)	https://jehyunlee.tistory.com/

SUMMARY

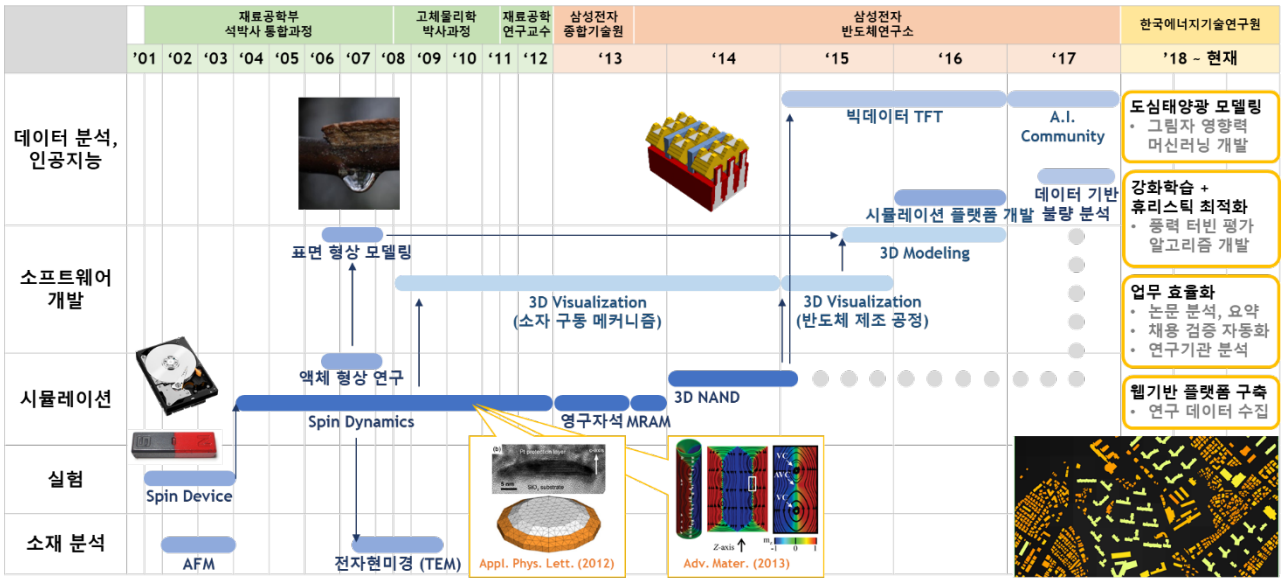
Education – 2 Ph.D degrees

(1) Materials Sci. & Eng. (Seoul Nat'l Univ., 2008).
(2) Solid State Physics (Vienna Univ. of Tech. 2011)

Achievements

(1) **Author** of 47 SCI papers, 45 International Conferences and 2 Books (2004~)
(2) 5 Exhibitions as an **AI artist** (2024~)
(3) **Inventor** of 13 Patents and 7 Software Copyrights (2013~)
(4) 37 **Awards winner** given for SCI Journal publications, Conference, Companies and Societies (2010~)
(5) 28 **Community contributions** for Academic Societies and IT Communities (2004~)

1994.03	1997.03	2001.03	2008.09	2011.09	2013.01	2013.10	2017.03	2018.01~
High School	Bachelor	Integrated Master & Ph.D	Ph.D	Research Prof.	Senior Researcher	Senior Engineer	Principal Engineer	Senior Researcher Principal Researcher
		Materials and Devices researcher				Data Scientist		
• Chemistry	• Materials Sci. & Eng.	• Spin device fabrication • Magnetic materials simulation • Image Processing	• Electron microscopy	• Nanoparticle simulation	• Magenetic materials	• MRAM • 3D NAND • Platform TF • Big data TF	• Data-driven engineering • AI TF	• Renewable energy • Research platform • Energy material • Digital Transform.



APPOINTMENTS

University of Science and Technology, Daejeon, Korea 2023.07. – Present
Artificial Intelligence @KIER School
Full-time Professor 2024.03. – Present
Adjunct Professor 2023.07. – 2024.02.

Korea Institute of Energy Research, Daejeon, Korea 2018.01. – Present
Data Science: Renewable energy, Intelligent Automation, and Research Data System Construction
Leader, Principal Researcher (Energy AI & Computational Science Laboratory) 2023.07. – Present
Principal Researcher (Computational Science & Engineering Laboratory) 2023.03. – 2023.07.
Senior Researcher (Platform Technology Laboratory) 2017.01. – 2023.02.

Samsung Electronics, Suwon/Hwaseong, Korea 2013.01. – 2017.12.
3D Visualization and Modeling of Semiconductor Devices: DRAM/3D NAND/Logic
Process TCAD: Deposition/Etch/Epi. Growth/Sigma Etch
Development of Memory Devices: MRAM, 3D NAND
Principal Engineer (Semiconductor R&D Center) 2017.03. – 2017.12.
Senior Engineer (Semiconductor R&D Center) 2013.10. – 2017.02.
Permanent magnet development project.
Research Staff Member (Samsung Advanced Institute of Technology) 2013.01. – 2013.09.

Seoul National University, Seoul, Korea 2011.09. – 2012.12.
Under supervision of Prof. Sang-Koog Kim
National Creative Research Initiative Center for Spin Dynamics and Spin-Wave Devices.
Research Assistant Professor

Vienna University of Technology, Vienna, Austria 2008.09. – 2011.06.
TEM assisted FEM Micromagnetics, under supervision of Prof. Josef Fidler
Ph.D. student with Post Doc. Benefits

Korea Institute of Science and Technology, Seoul, Korea
Spintronic devices
Under supervision of Dr. Kwang-Youn Kim
Research Assistant 2002.03. – 2005.02.
Diamond Like Carbon
Under supervision of Dr. Kwang-Ryeol Lee
Research Assistant 1999.07. – 1999.08.

EDUCATION

Vienna University of Technology, Vienna, Austria 2008.09. – 2011.06.
Under supervision of Prof. Josef Fidler (Advanced Magnetism Group)
Research Theme: Study on magnetic recording media using TEM and micromagnetics
Thesis title: "Inhomogeneous magnetization processes in advanced recording media"
Ph.D in Institute of Solid State Physics

Seoul National University, Seoul, Republic of Korea 2001.09. – 2008.08.
Under supervision of Prof. Kyu Hwan Oh (Lab. of Materials Deformation and Processing)
Research Theme: Micromagnetic Simulations of magnetic recording media
Thesis title: "A study on the effect of the convex grain surface on the magnetic behavior from the viewpoint of magnetic recording"
Integrated Master and Ph.D. in School of Materials Science & Engineering

Bachelor course at Seoul National University, Seoul, Republic of Korea 1997.03. – 2001.08.
Thesis title: "Mechanical Behaviors of DLC/W multilayer"
Bachelor in School of Materials Science & Engineering

Incheon Science High School, Incheon, Republic of Korea 1994.03. – 1997.02.

EXHIBITIONS (5)

2024

1. 서울대학교 미술대학 동창회 주최, “2024 소확행 아트컬렉션”,
2024.10.10.–2024.10.16. SNU 장학빌딩 2F 베리타스홀
출품작: “셀카”, “기다림”, 안도감”, “공주님”, “읽는 소녀”



셀카 DALL.E3

기다림 DALL.E3

안도감 DALL.E3

공주님 DALL.E3

읽는 소녀 DALL.E3

2. 에이아이프렌즈학회, “2024 AAiCON 생성 AI 아티스트 초대전”,
2024.06.27.–2024.06.28. 대전컨벤션센터
출품작: “셀카”, “기다림”, 안도감”, “공주님”, “희망”



셀카 DALL.E3

기다림 DALL.E3

안도감 DALL.E3

공주님 DALL.E3

희망 DALL.E3

3. 서울대학교 미술대학 동창회 주최, “2024 소확행 아트컬렉션”,
2024.05.02.–2024.05.08. 한전아트센터갤러리
출품작: “불꽃 4”, “불꽃 5”, “불꽃 6”



불꽃4 DALL.E3

불꽃5 DALL.E3

불꽃6 DALL.E3

4. 서울대학교 미술대학 동창회 주최, “S-Art Festa”,
2024.04.02.–2024.04.08. 한전아트센터갤러리
출품작: “은행잎나무”



은행잎나무 DALL.E3

5. AI Creator & Prompt Factory 공동주최, “먀스터피스展”,
2024.01.19. 로컬모티브 라운지
출품작: “Destructive Innovation”, “까치”



self-destructive innovation DALL.E3

까치 DALL.E3

BOOKS (2)

2024

1. 정용진, 권오준, 이동훈, **이제현**, 강지명 (equally contributed)
"스마트 에너지 인공지능 SW 분석가", 한국생산성본부 (2024.01.15.) ISBN 9788937102080

2023

2. 권정민, 권시현, 김영민, 김진환, 박준석, 변성윤, 이정원, 이진형, **이제현** (equally contributed)
"데이터 과학자 원칙", 골든래빗 (2023.06.10.) ISBN 9791191905335

PUBLICATIONS ON SCI JOURNALS (47) ■FIRST (17) ■CORRESPONDING (1)

2024

1. Joonhee Kang, Byung-Hyun Kim, Min Ho Seo, **Jehyun Lee,** "Sampling rare events using nanostructures for universal Pt neural network potential", Current Applied Physics 66 110 (2024)
https://doi.org/10.1016/j.cap.2024.07.005

2023

2. Jihoo Jung, **Jehyun Lee,** (equally contributed first authors)
Sangjin Choi and Woonho Baek, "Information Analysis on Foreign Institution for International R&D Collaboration Using Natural Language Processing", Energies 16(1) 33 (2023)
https://doi.org/10.3390/en16010033

2022

3. Myeongchan Oh, **Jehyun Lee,** Jin-Young Kim, Hyun-Goo Kim, "Machine learning-based statistical downscaling of wind resource maps using multi-resolution topographical data", Wind Energy (2022)
https://doi.org/10.1002/we.2718

2021

4. Sung Jun Hong, Hoje Chun, **Jehyun Lee,** Byung-Hyun Kim, Min Ho Seo, Joonhee Kang and Byungchan Han, "First-Principles-Based Machine-Learning Molecular Dynamics for Crystalline Polymers with van der Waals interactions", The Journal of Physical Chemistry Letters 12 (2021) 6000.
https://doi.org/10.1021/acs.jpclett.1c01140
5. Hyeon-Kyu Park, Jae-Hyeok Lee, Jehyun Lee, Sang-Koog Kim, "Optimizing machine learning models for granular NdFeB magnets by very fast simulated annealing", Scientific Reports 11 (2021) 3792.
https://doi.org/10.1038/s41598-021-83315-9

2016

6. Sang-Koog Kim, Myoung-Woo Yoo, **Jehyun Lee,** Jae-Hyeok Lee, and Min-Kwan Kim, "Resonant vortex-core reversal in magnetic nano-spheres as robust mechanism of efficient energy absorption and emission", Scientific Reports 6 (2016) 31513.
https://doi.org/10.1038/srep31513

2015

7. Bosung Kim, Myoung-Woo Yoo, **Jehyun Lee,** and Sang-Koog Kim, "Temperature effect on vortex-core reversals in magnetic nanodots", J. Appl. Phys. 117 (2015) 173910.
https://doi.org/10.1063/1.4919836
8. Sang-Koog Kim, Myoung-Woo Yoo, **Jehyun Lee,** Ha-Youn Lee, Jae-Hyeok Lee, Yuri Gaididei, Volodymyr P. Kravchuk & Denis D. Sheka, "Resonantly excited precession motion of three-dimensional vortex core in magnetic nanospheres", Scientific Reports 5 (2015) 11370.
https://doi.org/10.1038/srep11370
9. Min-Kwan Kim, Prasanta Dhak, Ha-Youn Lee, Jae-Hyeok Lee, Myoung-Woo Yoo, **Jehyun Lee,** Kyoungsuk Jin, Arim Chu, Ki Tae Nam, Hyun Soon Park, Shinji Aizawa, Toshiaki Tanigaki,Daisuke Shindo, Miyoung Kim and Sang-Koog Kim, "Self-assembled magnetic nanospheres with three-dimensional magnetic vortex", Appl. Phys. Lett. 105 (2014) 232402.
https://doi.org/10.1063/1.4903741
10. Robert Streubel, **Jehyun Lee,** Denys Makarov, Mi-Young Im, Daniil Karnaushenko, Luyang Han, Rudolf Schafer, Peter Fischer, Sang-Koog Kim, Oliver G. Schmidt, "Magnetic Microstructure of Rolled-Up Single-Layer Ferromagnetic Nanomembranes", Adv. Mater. 26 (2014) 316.
https://doi.org/10.1002/adma.201303003

11. Jehyun Lee, Denys Makarov, Christoph Brombacher, Barbara Dymerska, Dieter Suess, Manfred Albrecht, Josef Fidler, "Scaling dependence and tailoring of the pinning field in FePt–based exchange coupled composite media", Nanotechnology 25 (2014) 045604.
https://doi.org/10.1088/0957-4484/25/4/045604
12. Robert Streubel, Denys Makarov, **Jehyun Lee,** Christian Müller, Michael Melzer, Rudolf Schäfer, Carlos Cesar Bof Bufon, Sang–Koog Kim, Oliver G. Schmidt, "Rolled–up Permalloy Nanomembranes with Multiple Windings", SPIN 3 (2013) 1340001.
https://doi.org/10.1142/S2010324713400018
13. V Neu, C Schulze, M Faustini, **J Lee,** D Makarov, D Suess, S–K Kim, D Grosso, L Schultz and M Albrecht, "Probing the energy barriers and magnetization reversal processes of nanoperforated membrane based percolated media", Nanotechnology 24 (2013) 145702.
https://doi.org/10.1088/0957-4484/24/14/145702
14. Young–Sang Yu, Dong–Soo Han, Myoung–Woo Yoo, Ki–Suk Lee, Youn–Seok Choi, Hyunsung Jung, **Jehyun Lee,** Mi–Young Im, Peter Fischer & Sang–Koog Kim, "Resonant amplification of vortex–core oscillations by coherent magnetic–field pulses", Scientific Reports 3 (2013) 1301.
https://doi.org/10.1038/srep01301
15. Jehyun Lee, Barbara Dymerska, Josef Fidler, Vasilis Alexandrakis, Thanassis Speliotis, Dimitris Niarchos, Peter Pongratz, Dieter Suess, "Fabrication and high-resolution electron microscopy study of FePt L10/A1 graded exchange spring media", Phys. Status Solidi (A) 210 (2013) 1305.
https://doi.org/10.1002/pssa.201228731
16. YM Kang, **J Lee,** YJ Kang, JB Park, SI Kim, SM Lee, K Ahn, "Understanding on coercivity behavior of M–type strontium hexaferrite through thin–film experiment and micromagnetic modeling", Appl. Phys. Lett. 103 (2013) 122407.
https://doi.org/10.1063/1.4821821
17. G. Fiedler, J. Filder, **J. Lee,** T. Schrefl, R. L. Stamps, H. B. Braun and D. Suess, "Direct calculation of the attempt frequency of magnetic structures using the finite element method", J. Appl. Phys. 111 (2012) 093917.
https://doi.org/10.1063/1.4712033
18. Myoung–Woo Yoo, **Jehyun Lee** and Sang–Koog Kim, "Radial–spin–wave–mode–assisted vortex–core magnetization", Appl. Phys. Lett. 100 (2012) 172413.
https://doi.org/10.1063/1.4705690
19. B Dymerska, **J Lee,** J Fidler, D Suess, "Micromagnetic study of exchange spring media with a rough interface on an example of FePt films", J. Phys D: Appl. Phys. 45 (2012) 495001.
https://doi.org/10.1088/0022-3727/45/49/495001
20. C. Brombacher, M. Grobis, **J. Lee,** J. Fidler, T. Eriksson, T. Werner, O. Hellwig, and M. Albrecht, "$L1_0$ FePtCu bit patterned media", Nanotechnology 23 (2011) 025301.
https://doi.org/10.1088/0957-4484/23/2/025301
21. D. Suess, L. Breth, **J. Lee,** M. Fuger, C. Vogler, F. Bruckner, B. Bergmair, T. Huber and J. Fidler, "Calculation of coercivity of magnetic nanostructures at finite temperatures", Appl. Phys. Lett. 99 (2011) 062505.
http://dx.doi.org/10.1103/PhysRevB.84.224421
22. Jehyun Lee, Christoph Brombacher, Josef Fidler, Barbara Dymerska, Dieter Suess, and Manfred Albrecht, "Contribution of the easy axis orientation, anisotropy distribution and dot size on the switching field distribution of bit patterned media", Appl. Phys. Lett. 99 (2011) 062505.
https://doi.org/10.1063/1.3623752
23. Jehyun Lee, Vasilis Alexandrakis, Markus Fuger, Barbara Dymerska, Dieter Suess, Dimitris Niarchos and Josef Fidler, "FePt $L1_0$/A1 graded media with a rough interphase boundary", Appl. Phys. Lett. 98 (2011) 222501.
https://doi.org/10.1063/1.3595307
24. V. Alexandrakis, Th. Speliotis, E. Manios, D. Niarchos, J. Fidler, and **Jehyun Lee,** G. Varvaro, "Hard/graded exchange spring composite media based on FePt", J. Appl. Phys. 109 (2011) 07B729.
https://doi.org/10.1063/1.3556773
25. C. Schulze, M. Faustini, **J. Lee,** H. Schletter, P. Krone, M. Gass, K. Sader, A. L. Bleloch, M. Fuger, D. Suess, J. Fidler, M. U. Lutz, U. Wolff, V. Neu, M. Hietschold, D.Makarov and M. Albrecht, "Magnetic Films On Nanoperfoated Templates: A Route Towards Percolated Perpendicular Media", Nanotechnology 21 (2010) 495701.
https://doi.org/10.1088/0957-4484/21/49/495701
26. J. Schratzberger, **J. Lee,** M. Fuger, J. Fidler, G. Fiedler, T. Schrefl, and D. Suess, "Validation of the transition state theory with Langevin–dynamics simulations", J. Appl. Phys. 108 (2010) 033915.
https://doi.org/10.1063/1.3460639

27. Jehyun Lee, Markus Fuger, Josef Fidler, Dieter Suess, Thomas Schrefl and Osamu Shimizu, "Modeling of the write and read back performances of hexagonal Ba-ferrite particulate media for high density tape recording", J. Magn. Magn. Mater. 322 (2010) 3869.
https://doi.org/10.1016/j.jmmm.2010.08.010
28. D. Punz, **J. Lee,** M. Fuger, J. Fidler, T. Schrefl and D. Suess, "Theory and Micromagnetics of Pinning Mechanism at Cylinderical Defects in Perpendicular Magnetic Films", J. Appl. Phys. 107 (2010) 113926.
https://doi.org/10.1063/1.3372611
29. Jehyun Lee, Thomas Uhrmann, Theodoros Dimopoulos, Hubert Brückl, and Josef Fidler,
"TEM Study on Diffusion Process of NiFe Schottky and MgO/NiFe Tunneling Diodes for Spin Injection in Silicon", IEEE Trans. Magn. 46 (2010) 2067.
https://doi.org/10.1109/TMAG.2010.2040594
30. Denys Makarov, **Jehyun Lee,** (equally contributed first authors)
Christoph Brombacher, Christian Schbert, Markus Fuger, Josef Fidler and Manfred Albrecht, "Perpendicular FePt-based exchange-coupled composite media", Appl. Phys. Lett., 96 (2010) 062501
https://doi.org/10.1063/1.3309417
31. V. Alexandrakis, D. Niarchos, K. Mergia, **Jehyun Lee,** J. Fidler, I. Panagiotopoulos, "Magnetic Properties of Graded Al/L10 films obtained by heat-treatment of FePt/CoPt multilayers", J. Appl. Phys., 107 (2010) 013903.
https://doi.org/10.1063/1.3275925
32. Jehyun Lee, Dieter Suess, Thomas Schrefl, Julian Dean, Josef Fidler, "Increases in effective head field gradients in exchange spring media", Appl. Phys. Lett., 95 (2009) 172509.
https://doi.org/10.1063/1.3257364
33. G. Winkler, D. Suess, **J. Lee,** J. Fidler, M. A. Bashir, J. Dean, A. Goncharov, G. Hrkac, S. Bance, and T. Schrefl, "Microwave-assisted three-dimensional multilayer magnetic recording", Appl. Phys. Lett., 94 (2009) 232501.
https://doi.org/10.1063/1.3152293
34. D. Suess, **J. Lee,** J. Fidler, H. S. Jung, E. M. T. Velu, W. Jiang, S. S. Malhotra, G. Bertero, and T. Schrefl, "Effect of Intergranular Exchange on Thermal Stability and Coercive Field of Perpendicular, Single Phase, Exchange Spring, and Coupled Granular Continuous", IEEE Trans. Magn., 45 (2009) 88.
https://doi.org/10.1109/TMAG.2008.2002859
35. Ji Woo Kim, Oliver Friedrichs, Jae-Pyoung Ahn, Do-Hyun Kim, Seul-Cham Kim, Arndt Remhof, Hee-Suk Chung, **Jehyun Lee,** Jae-Hyeok Shim, Young Whan, "Transmission electron microscopy study on the microstructural change of 2LiBH4/Al with hydrogen sorption cycling", Scripta Materialia, 60 (2009) 1089.
https://doi.org/10.1016/j.scriptamat.2009.01.031
36. Jehyun Lee, Dieter Suess, Thomas Schrefl, Eu Sun Yu, You Sub Lee, Kyu Hwan Oh and Josef Fidler, "Contribution of Convex Surfaces to Magnetostatic Interaction in Granular Medium", IEEE Trans. Magn., 45 (2009) 2655.
https://doi.org/10.1109/TMAG.2009.2018949
37. Jehyun Lee, Dieter Suess, Thomas Schrefl, Kyu Hwan Oh and Josef Fidler, "Grain geometry induced reversal behavior alteration", J. Phys. D: Appl. Phys., 42 (2009) 045005.
https://doi.org/10.1088/0022-3727/42/4/045005
38. D. Suess, **J. Lee,** J. Fidler, T. Schrefl, "Exchange-coupled perpendicular media", J. Magn. Magn. Mater., 321 (2009) 545.
https://doi.org/10.1016/j.jmmm.2008.06.041

2008

39. Jehyun Lee, Dieter Suess, Thomas Schrefl, Kyu Hwan Oh and Josef Fidler, "Contribution of the shrunk interface and the convex surface of grains on magnetic behavior in granular film", J. Appl. Phys., (2007).
https://doi.org/10.1063/1.2833302

2007

40. J. Lee, D. Suess, T. Schrefl, K. Oh, J. Fidler, "Magnetic Characteristics of Ferromagnetic Nanotube", J. Magn. Magn. Mater., 310 (2007) 2445.
https://doi.org/10.1016/j.jmmm.2006.10.1137
41. J. Lee, D. Suess, T. Schrefl, K. Oh, J. Fidler, "Micromagnetic study of recording on ion-irradiated granular-patterned media", J. Magn. Magn. Mater., 319 (2007) 5.
https://doi.org/10.1016/j.jmmm.2007.04.019
42. D. Suess, S. Eder, **J. Lee,** R. Dittrich, J. Fidler, J. W. Harrell, T. Schrefl, G. Hrkac, M. Schabes, N. Supper, A. Berger, "Reliability of Sharrocks equation for exchange spring bilayers", Phys. Rev. B., 75 (2007) 174430.
https://doi.org/10.1103/PhysRevB.75.174430

2006

43. J. Lee, D. Suess, T. Schrefl, K. Oh, J. Fidler, “Contribution of Local Incoherency on Gilbert-Damping”, IEEE Trans. Magn., 42 (2006) 3210.
https://doi.org/10.1109/TMAG.2006.880565

2005

44. Jang, S.H., Kim, Y.W., **Lee, J.H.,** Kim, K.Y., “Si -based magnetic tunnel transistor with single CoFe base layer ”, J. Appl. Phys., 98 (2005) 094502.
https://doi.org/10.1063/1.2126124

2004

45. J. Lee, K. Oh, H. Kim, K. Kim, “Magnetization reversal process of the nanosized elliptical permalloy magnetic dots with various aspect ratios”, J. Magn. Magn. Mater., 272-276 (2004) 736.
https://doi.org/10.1016/J.JMMM.2003.12.624
46. S. Jang, T. Kang, **J. Lee,** K. Kim, "Si-based magnetic tunnel transistor with high transfer ratio”, J. Magn. Magn. Mater., 272-276 (2004) 1930.
https://doi.org/10.1016/J.JMMM.2003.12.707
47. D. Kim, J. Kim, B. Park, J. Lee, J. Kim, **J. Lee,** J. Chang, H. Kim, I. Kim, Y. Park, “SrFeO3 nanoparticles-dispersed SrMoO4 insulating thin films deposited from Sr2FeMoO6 target in oxygen atmosphere”, Appl. Phys. Lett., 84 (2004) 5037.
https://doi.org/10.1063/1.1763638

INVITED TALKS (12)

2023

1. **Jehyun Lee,** “Evolution of ChatGPT and Applications in KIER”, November 3 – 4. 2023, The 62nd Annual Meeting of the Korean Society of Nuclear Medicine & the 22nd Annual Meeting of Asian Regional Cooperation Council of Nuclear Medicine (2023 Annual Meeting of KSNM & ARCCNM), Sejong University, Seoul.
2. **Jehyun Lee,** “Best Practices of Streamlining Research using AI and Data (AI 와 데이터를 활용한 연구 업무 효율화 사례)”, October 25 – 27. 2023, Conference of the Korean Institute of Metals and Materials, Daegu Convention Center, Daegu, Korea.
3. **Jehyun Lee,** “How ChatGPT has chanted your work”, September 20. 2023, The 32nd Workshop on Information Security and Cryptography (WISC2023), Seoul, Korea.
4. **Jehyun Lee**, Seunghee Lee,
“Photovoltaic Module Research Trends”, September 6 – 8. 2023, GPVC 2023, Kimdaejung Convention Center, Gwangju, Korea.

2013

5. Jehyun Lee, “Rolled-up Permalloy Nanomembranes with Multiple Windings,” 13. March, Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany.

2012

6. Jehyun Lee, “Micromagnetic simulations based on directly observed microstructures,” 14. August, Samsung Advanced Institute of Technology, Yongin-si, Gyeonggi-do, Korea.

7. Jehyun Lee, Youn-Seok Choi, Myoung-Woo and Sang-Koog Kim, “(tutorial) Micromagnetic Simulations of Collective Spin Excitations in Geometrically Confined Nanomagnets: Fundamentals of Micromagnetics,” 24. May, Korean Magnetics Society Summer Conference, Hotel Interciti, Daejeon, Korea.

2011

8. Jehyun Lee and Sang-Koog Kim, “Micromagnetic simulations based on directly observed microstructures,” 5. December, Korean Magnetics Society Winter Conference, Hotel Ramada, Jeju, Korea.
9. Jehyun Lee, “Introduction of the FEMME: Finite Element MicroMagnEtics,” 31. August, Department of Materials Science and Engineering, Seoul National University, Seoul, Korea.
10. Jehyun Lee, “Introduction of finite element micromagnetics on 3-dimensional arbitrary geometries,” 10. June, Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany.
11. Jehyun Lee, “Microstructure and the micromagnetism of advanced magnetic recording media,”3. May, Department of Materials Science and Engineering, Seoul National University, Seoul, Korea

2008

12. Jehyun Lee, “Image Analysis,” 20. February, Austria Institute of Technology, Vienna, Austria.

PRESENTATIONS IN INTERNATIONAL CONFERENCES (45)

2023

1. **Jehyun Lee,** Jun Muk Cho, Minhee Park
   "Industrial trend analysis by large language" CA & Hybrid, August 13 – 17. 2023, ACS Nano 2023, San Francisco, California, United States.

2022

2. Jihoo Jung, **Jehyun Lee,** Sangjin Choi, Woonho Baek
   "Analysis on Advanced Foreign Institution for R&D Planning of International Cooperation using Open API", 27 Sep.–3 Oct. 2022, The 11th Asia–Pacific Forum on Renewable Energy (AFORE 2022), Ramada Plaza Jeju, Jeju, Korea.
3. Byung–Hyun Kim, **Jehyun Lee,** Kwangsoo Kim, Myeongjin Kim,
   "Design of Metal–Doped 2D Transition Metal Dichalcogenides for a Superior Oxygen Reduction Reaction Electrocatalyst: From Density Functional Theory and Data Analysis to Experiment", 9–13 Oct. 2022, The 242nd ECS Meeting, Atlanta Hilton, Atlanta, Georgia, United States.

2020

4. **Jehyun Lee,** Chang Ki Kim, Chang–Yeol Yun, Dae Hyun Song, Yong–Heack Kang, Hyun–Goo Kim,
   "Machine–Learning Model for Urban Rooftop Irradiation Loss by Building Shadow", 8–13 Nov. 2020, The 30th International Photovoltaic Science and Engineering Conference (PVSEC–30) & Global Photovoltaic Conference 2020 (GPVC2020), ICC JEJU, Jeju, Korea.
5. Hyun–Goo Kim, **Jehyun Lee,** Chang Ki Kim, Chang–Yeol Yun, and Bo–Young Kim,
   "BIPV Potential Estimation for Urban City Based on the Solar Energy Map of Daejeon", 8–13 Nov. 2020, The 30th International Photovoltaic Science and Engineering Conference (PVSEC–30) & Global Photovoltaic Conference 2020 (GPVC2020), ICC JEJU, Jeju, Korea.

2019

6. **Jehyun Lee,** Junho Won, Chang Ki Kim, Chang–Yeol Yun, Dae Hyun Song, Yong–Heack Kang, Hyun–Goo Kim,
   "Machine–Learning Model for Building–Integrated Photovoltaic(BIPV) System in Urban Area", 13–19 Nov. 2019, 9th Asia–Pacific Forum on Renewable Energy (APORE), Maison Glad Hotel, Jeju, Korea.

2018

7. Kanghoon Yim, Chan–Woo Lee, **Jehyun Lee,** Incheol Jeong, Yong Youn, Seungwu Han,
   "Development of First–principles Platform Technology for Energy Research", Oct. 28–Nov. 2, 2018, The 9th International Conference on Multiscale Materials Modeling (MMM 2018), Osaka International Convention Center, Osaka, Japan.

2012

8. **Jehyun Lee,** Denys Makarov, Robert Streubel, Carlos Cesar Bof Bufon, Celine Vervacke, Dieter Suess, Josef Fidler, Oliver G Schmidt and Sang–koog Kim,
   "Vortex and antivortex formation in magnetic rolled–up nanotubes", Jul. 8–13, 2012, International Conference on Magnetism 2012, BEXCO, Busan, Korea.
9. Myoung–woo Yoo, **Jehyun Lee** and Sang–koog Kim,
   "Switching dynamics of vortex cores in nanodots by azimuthal–spinwave–mode excitation", Jul. 8–13, 2012, International Conference on Magnetism 2012, BEXCO, Busan, Korea.

2011

10. D. Suess, T. Schrefl, F. Bruckner, C. Vogler, B. Bergmair, T. Huber, **J. Lee** and J. Fidler, "Principle calculayion of coercivity of magnetic nanostructures at finite temperatures", Oct. 30–Nov.3, 2011, MMM Conference 2011, JW Marriott Desert Ridge Resort & Spa, Phoenix, USA.
11. B. Dymerska, **J. Lee,** V. Alexandrakis, D. Niarchos, D. Suess and J. Fidler,
    "TEM studies and micromagnetic simulations of the FePt L10/A1 phase graded media", Oct. 30–Nov.3, 2011, MMM Conference 2011, JW Marriott Desert Ridge Resort & Spa, Phoenix, USA.
12. **J. Lee,** D. Makarov, D. Suess, J. Fidler, O. G. Schmidt and S. Kim,
    "Magnetic Switching Behaviors of Ferromagnetic Rolled–up Nanotubes", Oct. 30–Nov.3, 2011, MMM Conference 2011, JW Marriott Desert Ridge Resort & Spa, Phoenix, USA.
13. M. Yoo, **J. Lee** and S. Kim, "Radial–spin–wave–mode–assisted vortex–core magnetization reversals", Apr. Oct. 30–Nov.3, 2011, MMM Conference 2011, JW Marriott Desert Ridge Resort & Spa, Phoenix, USA.
14. **J. Lee,** M. Fuger, D. Suess and J. Fidler, "Performance of Single Pole Tip head on h–BaFe particulate tape recording media", Apr. 25–29, 2011, Intermag Conference 2011, Taipei International Convention Center, Taipei, Taiwan.

15. **J. Lee,** V. Alexandrakis, M. Fuger, D. Suess, D. Niarchos and J. Fidler, "Micromagnetic simulations on FePt $L1_0$/A1 phase graded media", Apr. 25–29, 2011, Intermag Conference 2011, Taipei International Convention Center, Taipei, Taiwan.
16. M. Albrecht, C. Schulze, C. Brombacher, **J. Lee,** J. Fidler, M. Faustini, D. Grosso, D. Makarov and M. Grobis, "Magnetic films on templates: A route towards percolated media", Apr. 25–29, 2011, Intermag Conference 2011, Taipei International Convention Center, Taipei, Taiwan.

2010

17. **J. Lee,** D. Makarov, C. Brombacher, B. Dymerska, M. Fuger, D. Suess, M. Albrecht and J. Fidler, "TEM Studies on RTA treated FePt–based Exchange Coupled Composite Media", Nov. 14–18, 2010, MMM Conference 2010, Hyatt Regency Atlanta, Atlanta, USA.
18. C. Vogler, F. Bruckner, M. Fuger, **J. Lee,** J. Fidler and D. Suess, "3D–MRAM Device based on Resonant AC–Spin Polarized Currents", Nov. 14–18, 2010, MMM Conference 2010, Hyatt Regency Atlanta, Atlanta, USA.
19. M. Fuger, **J. Lee,** J. Fidler, D. Suess and T. Schrefl, "Modeling of the influence of the passivation shell on the magnetization process of advanced MP tape recording films", Nov. 14–18, 2010, MMM Conference 2010, Hyatt Regency Atlanta, Atlanta, USA.
20. F. Bruckner, C. Vogler, M. Fuger, **J. Lee,** J. Fidler and D. Suess, "Simultaneously solving magnetostatic Maxwell equations and LLG for exended micromagnetic simulations", Nov. 14–18, 2010, MMM Conference 2010, Hyatt Regency Atlanta, Atlanta, USA.
21. M. Fuger, **J. Lee,** J. Fidler, D. Suess, "Micromagnetic study of the recording performance of advanced h–BaFe based tape recording materials", Aug. 23–28, 2010, Joint European Magnetic Symposia (JEMS) 2010, Jagiellonian University, Krakaw, Poland.
22. **J. Lee,** D. Makarov, B. Dymerska, C. Brombacher, J. Fidler, M. Fuger, D. Suess and M. Albrecht, "TEM study of interface properties of FePtCu–based exchange coupled composite media", Aug. 23–28, 2010, Joint European Magnetic Symposia (JEMS) 2010, Jagiellonian University, Krakaw, Poland.
23. Josef Fidler, **Jehyun Lee,** Markus Fuger, Dieter Suess, and Thomas Schrefl, "Material and Nanosensor design by finite element Micromagnetic Modeling", Jun. 7–8, 2010, ROMSC 2010, "Alexandru Ioan Cuza", University of Iasi, Iasi, Romania.
24. D. Makarov, C. Brombacher, **J. Lee,** J. Fidler and M. Albrecht, "Scaling dependence of the switching field of the hard layer in perpendicular FePt–based exchange coupled composite media", Sep. 13–17, 2010, Nano 2010, University La Sapienza, Rome, Italy.
25. Josef Fidler, **Jehyun Lee,** Markus Fuger, Dieter Suess, and Thomas Schrefl, "Particular and granular magnetic nanostructures for advanced magnetic recording schemes", Sep. 13–17, 2010, Nano 2010, University La Sapienza, Rome, Italy.
26. **Jehyun Lee,** Josef Fidler, Thomas Uhrmann, Theodore Dimopoulos, and Hubert Brückl, "TEM study on the diffusion process of Si/NiFe Schottky barrier and Si/MgO/NiFe tunneling diode", Jan. 18–22, 2010, Joint MMM/Intermag Conference 2010, Marriott Wardman Park, Washington D.C., USA.
27. M. Fuger, **J. Lee,** J. Fidler, D. Suess and T. Schrefl, "Micromagnetic study of particulate media reversal for tape recording", Jan. 18–22, 2010, Joint MMM/Intermag Conference 2010, Marriott Wardman Park, Washington D.C., USA.
28. G. Fiedler, M. Janisch, **J. Lee,** M. Fuger, J. Fidler and T. Schrefl, "Direct calculation of the attempt frequency of magnetic nanostructures using FEM", Jan. 18–22, 2010, Joint MMM/Intermag Conference 2010, Marriott Wardman Park, Washington D.C., USA.

2009

29. Thomas Schrefl, David Hahn, M.A. Bashir, Alexander Goncharov, Gino Hrkac, Julian Dean, **Jehyun Lee,** and Dieter Suess, "Numerical methods help to optimize hard disks", The 20th Magnetic Recording Conference (TMRC), Oct. 5–7, 2009, University of Alabama, Tuscaloosa, AL, USA.
30. **J. Lee,** J. Fidler, V. Alexandrakis, and D. Niarchos, "High Resolution TEM study of exchnage coupled FePt/CoPt thin films", Microscopy Conference 2009, Aug. 30 – Sep. 4, 2009, Congress Graz, Graz, Austria.
31. **Jehyun Lee,** Dieter Suess, Thomas Schrefl, Josef Fidler, "Head Field Gradient Effect on Magnetic Recording", Intermag Conference 2009, May 4–8, 2009, Convention Center, Sacramento, USA.

2008

32. **Jehyun Lee,** Dieter Suess, Josef Fidler, Thomas Schrefl, Eu Sun Yu, You Sub Lee, Kyu Hwan Oh, "Contribution of the Convex Surfaces on Magnetostatic Interaction in Granular Medium", Asian Magnetism Conference 2008, December 9–13, 2008, Paradise Hotel, Busan, Korea.
33. **Jehyun Lee,** Josef Fidler, Dieter Suess, Thomas Schrefl, Sanghwan Park, Kyu Hwan Oh, "Micromagnetic analysis of the switching field of CoCrPt–SiO_2 and CoPt–TiO_2 bilayers", 53rd MMM Conference 2008, November 10–14, 2008, Hilton Austin Convention Center, Austin,

Texas, USA.

34. **Jehyun Lee,** Dieter Suess, Thomas Schrefl, Kyu Hwan Oh, Josef Fidler,"Nucleation field reduction due to convex surface in magnetic recording media", Joint European Magnetic Symposia 2008, September 14–19, 2008, Trinity College, Dublin, Ireland.
35. Josef Fidler, **Jehyun Lee,** Dieter Suess and Thomas Schrefl, "Tuning of coercive field of nanostructured hard magnetic films", Workshop on Rare Earth Permanent Magnets, September 8–10, 2008, Movenpick Hotel, Kronoss, Greece.
36. Josef Fidler, Dieter Suess, **Jehyun Lee** and Thomas Schrefl, "Exchange-coupled magnets: Challenges", Workshop on Research Trends in Novel Magnets for Electromagnetic Applications, September 3–5, Hotel Santorini Palace, Santorini, Greece.

2007

37. **Jehyun Lee,** Dieter Suess, Rok Dittrich, Thomas Schrefl, Kyu Hwan Oh and Josef Fidler, "Contribution of the convex grain surface on magnetic behavior", 52nd MMM Conference 2007, November 5–9, 2007, Marriott Waterside Hotel, Tampa, USA
38. **Jehyun Lee,** M. Kim, D. Suess, T. Schrefl, K. Oh, J. Fidler, "Magnetic Characteristics of Co nano particle", Joint MMM/Intermag Conference 2007, January 7–11, 2007, Marriott Waterside Hotel & Marina, Baltimore, USA.

2006

39. Thomas Schrefl, Dieter Suess, **Jehyun Lee,** Rok Dittrich, Florian Dorfbauer, Josef Fidler, Manfred Schabes, "Nanomagnetic simulations of recording media", APS March meeting, March 13–17, 2006, The Baltimore Convention Center, Baltimore, USA.
40. **J. Lee,** D.Suess, T.Schrefl, K.Oh and J. Fidler, "Contribution of non-uniform magnetic states on Gilbert-damping in perpendicular media", Joint MMM/Intermag Conference, May 8–12, 2006, Town & Country Hotel, San Diego, USA.
41. **J. Lee,** D.Suess, T.Schrefl, K.Oh and J. Fidler, "Magnetic recording on patterned mediaprepared by ion beam irradiations", Joint MMM/Intermag Conference, May 8–12, 2006, Town & Country Hotel, San Diego, USA.
42. **Jehyun Lee,** Dieter Suess, Thomas Schrefl, Kyu Hwan Oh, Josef Fidler, "Magnetic Characteristics of Ferromagentic Nanotube", ICM2006, August 20–25, 2006, Kokusaikaikan, Kyoto, Japan.

2005

43. Josef Fidler, Dieter Suess, Karina Porath, **Jehyun Lee,** Thomas Schrefl, "Optimization of advanced perpendicular media by micromagnetic modeling", The 16th Annual Magnetic Recording Conference, August 15–17, 2005, Stanford University, CA, USA.

2004

44. **J. Lee,** S. Jang, Y. Kim, K. Oh, D. Kim and K. Kim, "Effect of the thickness of base layer on properties of Si-based magnetic tunnel transistor", 9th Joint MMM-Intermag Conference, January 5–9, 2004, Anaheim, CA, USA.

2003

45. **J. Lee,** K. Oh, H. Kim and K. Kim, "Magnetization reversal process of the nanosized elliptical permalloy magnetic dots with various aspect ratios". International Conference on Magnetism 2003, July 27–August1, 2003, Roma, Italy.

PATENTS (13) INTERNATIONAL (3)

2022

1. 박민철, 고정훈, 박지용, **이제현,** 김대신, "웨이퍼 맵 분석 장치, 이를 이용한 웨이퍼 맵 분석 방법 및 반도체 제조 방법" 등록번호 102440695, 공개번호 1020190017344
2. **이제현,** 유시현, 김창기, 김현구, "문헌 정보를 분석하기 위한 장치 및 그 방법". 출원번호 10-2022-0080454

2021

3. **이제현,** 오명찬, 김창기, 김현구, "머신 러닝 모델을 이용하여 일사 손실률을 예측하기 위한 장치 및 그 방법". 등록번호 102491297, 공개번호 1020220132844

2018

4. **이제현,** 장성환, 정성윤, 정재훈, "셀프 구조 분석을 이용한 구조 잡음 감소 방법 및 장치". 출원번호 1020160165559, 공개번호 1020180065135
5. 심성보, 고정훈, **이제현,** 정재훈, "패턴 측정 방법 및 그를 포함하는 반도체 소자의 제조 방법". 출원번호 1020160122397, 공개번호 1020180033367

6. 심성보, **이제현,** “웨이퍼 측정 설비, 웨이퍼 측정 시스템 및 이를 이용한 반도체 장치의 제조 방법”. 출원번호 1020180007239

2017

7. 김성렬, 고정훈, 김성제, **이제현,** 전종욱, “반도체 집적회로의 수율 예측 장치, 및 이를 이용한 반도체 장치 제조 방법”. 출원번호 10-2017-0109787, 공개번호 10-2019-0023670
8. 박민철, **이제현,** 고정훈, 김영구, 이근호, “두께 측정 방법, 영상 처리 방법 및 이를 수행하는 전자 시스템”. 등록번호 1023925970000, 공개번호 102017044424 (중국특허 등록번호 CN106601642, 미국특허 등록번호 US10055829, 대만특허 등록번호 TWI689703)

2016

9. 박민철, 김대신, 김샛별, 김세진, 샤즈리앙, **이제현,** “고해상도 전자 현미경 이미지로부터 결정을 분석하는 방법 및 그 시스템”. 등록번호 102301536, 공개번호 1020160109303 (중국특허 등록번호 CN105976349, 미국특허 등록번호 US10217205, 대만특허 출원번호 TW201702991)

2015

10. 조근우, **이제현,** 문경석, 강영재, 강영민, 안경한, 이상목, “자성 분말, 그 제조 방법, 및 이를 포함하는 자석”. 출원번호 1020130126509, 공개번호 1020150126509
11. 강영민, 안경한, 나나 사폴레토바, 이상목, 강영재, 문경석, **이제현,** 조근우, “자성 분말, 그 제조 방법, 및 이를 포함하는 자석”. 출원번호 1020130126510, 공개번호 1020150048256

2013

12. 김상국, **이제현,** 이하연, “자성 나노 입자의 선택적 활성화 방법 및 선택적 활성화되는 자성 나노 입자”. 등록번호 10149296, 공개번호 1020140032756 (유럽특허 등록번호 02893920, 미국특허 등록번호 09336934, 세계지적재산권기구 출원번호 PCT/KR2013/007923)
13. 문경석, 강영민, 강영재, 안경한, 이상목, **이제현,** 조근우, “소결자석 제조 방법”. 출원번호 1020130161813, 공개번호 1020150073759

SOFTWARE COPYRIGHT (7)

2024

1. **이제현,** 정지후, 최상진, “논문 문헌 데이터의 오류를 수정하고 부가 정보를 결합하는 장치 및 방법”. 제 C-2024-040522 호
2. **이제현,** “임의의 논문 및 보고서의 내용을 추출하여 지정된 양식으로 정리 및 저장하는 방법 및 장치”. 제 C-2024-039984 호
3. **이제현,** “출력 언어 및 데이터 시각화 서식 설정을 포함한 환경 설정을 하는 방법 및 장치”. 제 C-2024-039985 호
4. **이제현,** 고준렬, 송영호, 김효정, 신지현, “논문 실적의 진위 여부를 검증하고 정량 평가하는 장치 및 방법”. 제 C-2024-038794 호
5. **이제현,** 이웅희, 유란, 김승규, 이정인, 박민희, “언론보도를 주제별로 분류하는 장치 및 방법”. 제 C-2024-039983 호

2022

1. **이제현,** 김현구, 김창기, 유시현, “임의의 연구 주제에 대한 동향 분석 프로그램”. 제 C-2022-014624 호

2018

2. **이제현,** 임강훈, 이찬우, 김병현, “원자구조의 분자흡착구조 선별 모델링 자동화 프로그램”. 제 C-2018-039985 호

LECTURES (4)

2023

1. **Lecturer**
   Solar-Geothermal Fusion System Engineering (Dr. Sung Eun Park), University of Science & Technology.
   Spring Semester
2. **Lecturer**
   AI and Green Energy (Dr. Chi-Hwan Han), University of Science & Technology.
   Spring Semester

2007

3. **Teaching Assistant**
   Numerical Image Analysis (Prof. Kyu Hwan Oh), Seoul National University.
   Fall Semester

2004

4. **Teaching Assistant**
   Electric Circuits (Prof. Kyu Hwan Oh), Seoul National University.
   Fall Semester

RESEARCH VISITS

Vienna University of Technology, Vienna, Austria 2005.02. – 2006.02., 2007.02.

Under supervision of Prof. Josef Fidler, Prof. Thomas Schrefl and Dr. Dieter Suess
Financially supported by the BK21 project of the Ministry of Education and Human Resource Foundation, Republic of Korea.
Guest Researcher

Vienna University of Technology, Vienna, Austria 2007.12. – 2008.08.

Under supervision of Prof. Josef Fidler, Prof. Thomas Schrefl and Dr. Dieter Suess
Financially supported by the project of the FWF (Austrian Science Fund), Austria and the KOSEF (Korean Science Foundation), Republic of Korea.
Guest Researcher

TASK FORCE TEAM ACTIVITIES

AI Community 2017.01. – 2017.12.

Supervisor: Seok-Woo Nam (Executive Vice President)
Facilitator: Wonseok Yang, Principle Engineer
Semiconductor R&D Center, Samsung Electronics

Big Data TF 2015.03. – 2016.12.

Supervisor: Seok-Woo Nam (Executive Vice President)
Facilitator: Wonseok Yang, Principle Engineer
Semiconductor R&D Center, Samsung Electronics

Innovation (Solgae) TF 2015.03. – 2015.09.

CAE Team (Team Leader: Young-Gwan Park, Vice President)
Semiconductor R&D Center, Samsung Electronics

AWARDS AND REMARKS (37)

1. **NST Science Communicator (2024):**
   국가과학기술연구회 과학커뮤니케이터 (국가과학기술연구회 이사장 훈격)
   이제현
   Awarded by **Chairperson of National Research Council of Science & Technology (Dr. Bok Chul Kim)**
2. **KIER Conference Work Innovation 1st Prize (2023):**
   대상 (한국에너지기술원장 훈격)
   이제현, 박민희, 조준묵, 최상진, 정지후, "에너지 R&D 혁신을 위한 계산과학 기반 연구 및 기후변화 대응 정책지원 기반구축"
   Awarded by **President of Korea Institute of Energy Research (Dr. Chang-Keun Yi)**
3. **Collaboration Team Award (2023):**
   우수 협업부서상 (한국에너지기술연구원장 훈격)
   이제현, 이찬우, 주영환, 박정호, 박상신, 임강훈, 윤용, 정우석, 이승희, 김상우
   Awarded by **President of Korea Institute of Energy Research (Dr. Chang-Keun Yi)**
4. Collaboration Award (2023):
   협업상 (한국에너지기술연구원장 훈격)
   이제현 (에너지+AI 학습조직)
   Awarded by President of Korea Institute of Energy Research (Dr. Chang-Keun Yi)

5. Safety·Health Activity Team Award (2023):
   안전·보건활동 종합평가 우수부서상 (한국에너지기술연구원장 훈격)
   에너지 AI·계산과학실
   Awarded by President of Korea Institute of Energy Research (Dr. Chang-Keun Yi)
6. NST Digital Transformation Idea Competition 1st Prize (2023):
   국가과학기술연구회 디지털 전환 아이디어 공모전 대상 (국가과학기술연구회 이사장 훈격)
   이제현, 김희웅, 고은정, "연구 책임자 연구 역량 증빙 자동화"
   Awarded by Chairperson of National Research Council of Science & Technology (Dr. Bok Chul Kim)
7. Collaboration Award (2022):
   협업상 (한국에너지기술연구원장 훈격)
   이제현 (KIER Tube 활성화)
   Awarded by President of Korea Institute of Energy Research (Dr. Jong-nam Kim)
8. NST RPA Task Idea Competition 1st Prize (2022):
   국가과학기술연구회 RPA 업무 아이디어 공모전 대상 (국가과학기술연구회 이사장 훈격)
   이제현, 송영호, 김순환, 김태호, 정경훈, 고은정, "채용 검증 자동화"
   Awarded by Chairperson of National Research Council of Science & Technology (Dr. Bok Chul Kim)
9. KIER Conference Work Innovation 3rd Prize (2022):
   우수상 (한국에너지기술원장 훈격)
   이제현, 이고운, 권지희, 김예진, 유정준, 박지찬, "연구 데이터 시스템 구축"
   Awarded by President of Korea Institute of Energy Research (Dr. Jong-nam Kim)
10. KIER Conference Work Innovation 3rd Prize (2022):
    우수상 (한국에너지기술원장 훈격)
    이제현, 송영호, 최인용, 이민규, 구기관, 유재경, 송영배, 정지후, 박민희,
    "문헌 정보 분석 기술 기반 업무 자동화 및 심층 분석"
    Awarded by President of Korea Institute of Energy Research (Dr. Jong-nam Kim)
11. KIER Conference Poster 3rd Prize (2022):
    우수상 (한국에너지기술원장 훈격)
    윤창열, 오명찬, 김보영, **이제현,** 김현구,
    "100m x 100m 격자형 국내 태양광 시장잠재량 분석모델 및 데이터 플랫폼 개발"
    Awarded by President of Korea Institute of Energy Research (Dr. Jong-nam Kim)
12. KIER Conference Oral 3rd Prize (2022):
    우수상 (한국에너지기술원장 훈격)
    김현구, 김창기, 오명찬, 김보영, 김진영, 윤창열, **이제현,** 강용혁, 김건훈, 래티샤, 엘비나, 이동규,
    "위성영상 기반 재생에너지 발전진단 및 변동성 예측"
    Awarded by President of Korea Institute of Energy Research (Dr. Jong-nam Kim)
13. Tech. Award (2022):
    기술논문상 (한국태양에너지학회장 훈격)
    Awarded by President of Korean Solar Energy Society (Dr. Hyun-Goo Kim)
14. Best Fusion Cluster 1st Prize (2022):
    우수 융합 클러스터 최우수상 (국가과학기술연구회장 훈격)
    박지찬, 강신욱, 김병현, 양정일, **이제현,** 박수정, 오경희, 이학근, 장산하,
    "미래 촉매 정보학 구축을 위한 촉매 자동화 반응 및 평가용 신규 로봇 시스템 개발"
    Awarded by Chairperson of National Research Council of Science & Technology (Dr. Bok Chul Kim)
15. Best Paper Award (2022):
    최우수논문상 (한국태양에너지학회장 훈격)
    이제현, 유시현, 김창기, 오명찬, 김보영, 강용혁, 김현구,
    "SCOPUS 문헌 정보 분석을 통한 머신 러닝 활용 BIPV 연구 동향"
    Awarded by President of Korean Solar Energy Society (Dr. Hyun-Goo Kim)
16. Collaboration Award (2021):
    협업상 (한국에너지기술연구원장 훈격)
    이제현 (에너지+AI 학습조직)
    Awarded by President of Korea Institute of Energy Research (Dr. Jong-nam Kim)
17. Invention Award (2021):
    창안상 (한국에너지기술연구원장 훈격)
    연구 몰입도 향상 위원회 (이대근, 안승규, 송희은, 조임현, 황성목, 조원철, 김민진, 서민호, 박석인, 류승환, 서명원, 천동현, 윤민혜, 우중제, **이제현,** 송욱진, 권상훈)
    Awarded by President of Korea Institute of Energy Research (Dr. Jong-nam Kim)

18. KIER-Tube Video Knowledge Contents Competition 1st Prize (2021):
KIER-Tube 동영상 지식콘텐츠 공모전 대상 (한국에너지기술연구원장 훈격)
이제현, "논문 출판 동향 분석 feat. Python"
Awarded by **President of Korea Institute of Energy Research (Dr. Jong-nam Kim)**
19. Best Presenter Award (2021):
우수발표논문상 (한국태양에너지학회장 훈격)
이제현, 배수민, 오명찬, 김창기, 강용혁, 김현구, "도심태양광 발전량 평가를 위한 건축물 음영 분석"
Awarded by **President of Korean Solar Energy Society (Prof. Gi-Hwan Kang)**
20. High Quality Reviewer Awards 1st Prize (2020):
"나는 고퀄 리뷰어다" (한빛미디어)
이제현, "밑바닥에서 시작하는 딥러닝 3"
Awarded by **Hanbit Media (Tae-Heon Kim)**
21. Energy Award 2nd Prize (2020):
에너지대상 최우수상 (한국에너지기술연구원장 훈격)
김현구, 김창기, 오명찬, 김진영, **이제현**, 김보영, 윤창열, 강용혁, "위성영상 기반 신재생에너지 발전 진단 및 변동성 예측"
Awarded by **President of Korea Institute of Energy Research (Dr. Jong-nam Kim)**
22. Collaboration Award Idea Contest (2020):
협업상 아이디어 공모전 (한국에너지기술연구원장 훈격)
김덕환, **이제현**
Awarded by **President of Korea Institute of Energy Research (Dr. Jong-nam Kim)**
23. Best Paper Award (2019):
최우수논문상 (국토교통부장관 훈격)
이제현, 원준호, 김창기, 윤창열, 송대현, 강용혁, 김현구, "도심지 건물일체형 태양광발전시스템을 위한 기계학습 기반의 건축물 음영 평가 모델 개발"
Awarded by **Minister of Land, Infrastructure and Transport (Hyun-mee Kim)**
24. Best Presenter Award (2019):
우수발표논문상 (한국태양에너지학회장 훈격)
이제현, 원준호, 김창기, 윤창열, 송대현, 강용혁, 김현구, "태양광 발전을 위한 도심지 음영 평가 모델 개발"
Awarded by **President of Korean Solar Energy Society (Prof. Doosam Song)**
25. Probity Award (2018):
청렴상 (한국에너지기술연구원장 훈격)
Awarded by **President of Korea Institute of Energy Research (Dr. Byong-Sung Kwak)**
26. SEC Annual award (2017): *For Security, Full Title cannot be described here*
삼성전자 연례기술상 (반도체 연구소장 훈격)
D.-S. Kim and **Jehyun Lee** et al., achievement on Deep Learning application on semiconductor development, 3rd Prize
Awarded by **President of Semiconductor R&D Center (Executive VP, Ho Kyu Kang),**
Semiconductor R&D Center, Samsung Electronics.
27. Future Creator award (2017): *For Security, Full Title cannot be described here*
미래창조상 (반도체 연구소장 훈격)
D.-S. Kim and **Jehyun Lee** et al., achievement on Deep Learning application on semiconductor development, 3rd Prize
Awarded by **President of Semiconductor R&D Center (Executive VP, Ho Kyu Kang),**
Semiconductor R&D Center, Samsung Electronics.
28. Future Creator award (2016): *For Security, Full Title cannot be described here*
미래창조상 (반도체 연구소장 훈격)
J-.H. Jeong and **Jehyun Lee** et al., achievement on 3D Modeling & Image analysis, 1st Prize
Awarded by **President of Semiconductor R&D Center (Executive VP, Eun Seung Jung),**
Semiconductor R&D Center, Samsung Electronics.
29. TCADer Tech. award (2016): *For Security, Full Title cannot be described here*
CAE 기술상 (CAE 팀장 훈격)
Nam-Hyun Kim and J. Lee et al., achievements on 3D Modeling
Awarded by **CAE Team Leader (VP, Keun Ho Lee),**
Semiconductor R&D Center, Samsung Electronics.
30. Samsung Paper Award (2015): *For Security, Full Title cannot be described here*
삼성논문상 본선진출 (반도체 연구소장 훈격)
K. Kim and **Jehyun Lee** et al., study on 3D NAND process, 5th Prize

Awarded by **President of Semiconductor R&D Center (Executive VP, Eun Seung Jung),**
Semiconductor R&D Center, Samsung Electronics.

31. **Semiconductor R&D Center TRIZ competition (2015): For Security, Full Title cannot be described here**
반도체연구소 TRIZ 경진대회 (반도체 연구소장 훈격)
Jehyun Lee, achievements on 3D visualization, 4th Prize, Certified as TRIZ Expert (Lv.2)
Awarded by **President of Semiconductor R&D Center (Executive VP, Eun Seung Jung),**
Semiconductor R&D Center, Samsung Electronics.
32. **Unsung Hero in DS Division (2015):** ***For Security, Full Title cannot be described here***
숨은 일꾼상 2분기 단독 수상 (DS부문장 권오현 부회장 훈격)
Jehyun Lee, achievements on image analysis related work, 1st Prize
Awarded by **President of Device Solutions Division (Vice Chairman & CEO, Oh Hyun Kwon),**
Samsung Electronics.
33. **Specialist in Creation (2015): For Security, Full Title cannot be described here**
창조전문가 상반기 최우수상 (메모리 사업부장 훈격)
Sejun Park and **Jehyun Lee** et al., achievements on 3D NAND, 1st Prize
Awarded by **President of Memory Business (President, Young-Hyun Jun),**
DS Division, Samsung Electronics.
34. **TCADer Tech. award (2015):** ***For Security, Full Title cannot be described here***
CAE 기술상 (CAE 팀장 훈격)
J. Lee et al., achievements on 3D NAND image analysis
Awarded by **CAE Team Leader (VP, Young Kwan Park)**
35. **BRAVO Paper award (2014):** ***For Security, Full Title cannot be described here***
BRAVO 논문상 (CAE 팀장 훈격)
J. Lee et al., study on 3D NAND process, 3rd Prize
Awarded by CAE Team Leader (VP, Young Kwan Park),
Semiconductor R&D Center, Samsung Electronics.
36. **Best poster award (2011)**
J. Lee, V. Alexandrakis, M. Fuger, D. Suess, D. Niarchos and J. Fidler, "Micromagnetic simulations on FePt $L1_0$/A1 phase graded media", Apr. 25–29, 2011, Intermag Conference 2011, Taipei International Convention Center, Taipei, Taiwan.
37. **Chosen as a "Research Highlights" in Journal of Applied Physics (2010)**
V. Alexandrakis, D. Niarchos, K. Mergia, **Jehyun Lee,** J. Fidler, I. Panagiotopoulos, "Magnetic Properties of Graded Al/L10 films obtained by heat-treatment of FePt/CoPt multilayers", J. Appl. Phys., 107 (2010) 013903.

COMMUNITY ACTIVITY (35)

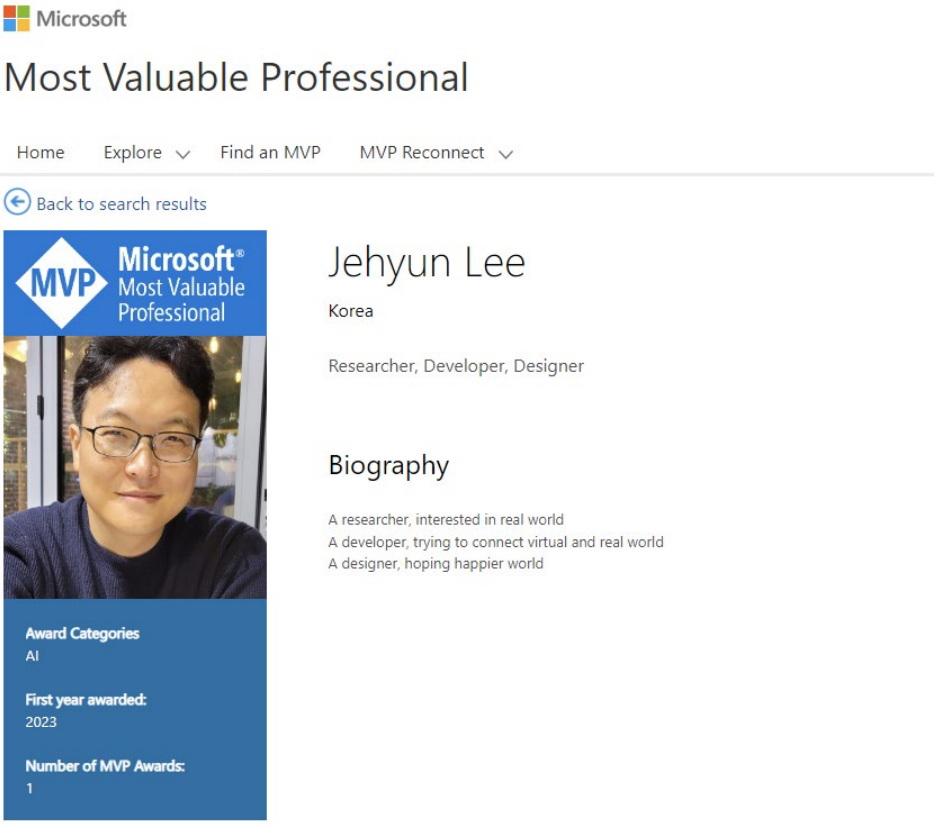
2024

1. MK Speaker
   MK Speaker, 매일경제
   URL: http://www.mkspeaker.co.kr/speaker_view.php?no=345
2. Regular Reviewer, of IT books of Hanbit Media
   나는 리뷰어다 (한빛미디어)
3. NST Digital Transformation & Consilience Specialist
   국가과학기술연구회 디지털전환 및 융합 R&D 전문가 위원
4. MVP (AI), Microsoft
   MVP (Most Valuable Professional) AI 부문 (Microsoft)
   URL: https://mvp.microsoft.com/en-us/PublicProfile/5005119?fullName=Jehyun%20Lee
5. Board Member, AIFrenz
   이사, 사단법인 에이아이프렌즈(AI 프렌즈) 학회
   URL: http://aifrenz.org/
6. Member, of AI Community in Korea Institute of Energy Research
   AI 학습조직 위원: 에너지+AI (한국에너지기술연구원)

2023

7. MK Speaker
   MK Speaker, 매일경제
   URL: http://www.mkspeaker.co.kr/speaker_view.php?no=345

8. Regular Reviewer, of IT books of Hanbit Media
   나는 리뷰어다 (한빛미디어)
9. Organizer, of AI Community in Korea Institute of Energy Research
   AI 학습조직 위원장: 에너지+AI (한국에너지기술연구원)
10. MVP (AI), Microsoft
    MVP (Most Valuable Professional) AI 부문 (Microsoft)
    URL: https://mvp.microsoft.com/en-us/PublicProfile/5005119?fullName=Jehyun%20Lee



11. Board Member, AIFrenz
    이사, 사단법인 에이아이프렌즈(AI 프렌즈) 학회
    URL: http://aifrenz.org/

2022

12. Beta Reader, “어쩌다 데이터 분석”
    베타리더, “어쩌다 데이터 분석” (한빛미디어, 2022.09.)
    URL: https://www.hanbit.co.kr/store/books/look.php?p_code=B7520909011
13. Regular Reviewer, of IT books of Hanbit Media
    나는 리뷰어다 (한빛미디어)
14. Organizer, of AI Community in Korea Institute of Energy Research
    AI 학습조직 위원장: 에너지+AI (한국에너지기술연구원)
15. Beta Reader, “그림으로 이해하는 인지 과학”
    베타리더, “그림으로 이해하는 인지 과학” (길벗, 2022)
16. Mentor, of Data Mentoring
    데이터 멘토링: 팀 와이즈(권로지, 김여진, 박민영, 이주연)
    데이터 스토리: 데이터로 보는 기후변화와 질병의 관계 (to be published)
17. Board Member, AIFrenz
    이사, 사단법인 에이아이프렌즈(AI 프렌즈) 학회
    URL: http://aifrenz.org/

2021

18. Mentor, of Data Mentoring
    데이터 멘토링: 팀 애이블(박예인, 김태인, 이재헌, 임가현, 허예영) – 최우수상 수상
    데이터 스토리: 데이터로 본 장애인 편의시설 정보 분석
    URL: https://www.bigdata-map.kr/datastory/new/story_31
19. Contributor, of Data Story
    데이터 스토리: 데이터로 보는 개봉 영화 (1) 장르, (2) 박스오피스
    URL: https://www.bigdata-map.kr/datastory/new/story_23,
    https://www.bigdata-map.kr/datastory/new/story_24
20. Monitor Agency, Big Data Map
    모니터링단, 통합 데이터 지도 데이터 품질 검사
    URL: https://www.bigdata-map.kr/

21. Regular Reviewer, of IT books of Hanbit Media
    나는 리뷰어다 (한빛미디어)
22. Organizer, of AI Community in Korea Institute of Energy Research
    AI 학습조직 위원장: 에너지+AI (한국에너지기술연구원)
23. Beta Reader, "파이썬으로 캐글 뽀개기"
    베타리더, "파이썬으로 캐글 뽀개기" (비제이퍼블릭, 2021)
    URL: https://bjpublic.tistory.com/417
24. Beta Reader, "fastai 와 파이토치가 만나 꽃피운 딥러닝"
    베타리더, "fastai 와 파이토치가 만나 꽃피운 딥러닝" (한빛미디어, 2021)
    URL: https://hanbit.co.kr/store/books/look.php?p_code=B7970422863
25. Beta Reader, "한 줄씩 따라해보는 파이토치 딥러닝 프로젝트 모음집"
    베타리더, "한 줄씩 따라해보는 파이토치 딥러닝 프로젝트 모음집" (비제이퍼블릭, 2021)
    URL: https://bjpublic.tistory.com/414
26. Recommendation, "실무 프로젝트로 배우는 데이터분석 with R"
    추천사, "실무 프로젝트로 배우는 데이터분석 with R" (위키북스 2021)
    URL: https://wikibook.co.kr/practical-r/
27. Beta Reader, "데이터가 뛰어노는 AI 놀이터, 캐글"
    베타리더, "데이터가 뛰어노는 AI 놀이터, 캐글" (한빛미디어, 2021)
    URL: https://www.hanbit.co.kr/media/books/book_view.html?p_code=B4998513859
28. Recommendation, "The Secret Life of Programs"
    추천사, "한 권으로 읽는 컴퓨터 구조와 프로그래밍" (책만 2021)
    URL: https://www.onlybook.co.kr/entry/secret-programs
29. Beta Reader, "Practical Time Series Analysis"
    베타리더, "실전 시계열 분석" (한빛미디어, 2021)
    URL: https://www.hanbit.co.kr/store/books/look.php?p_code=B9090689318

2020

30. Monitor Agency, Big Data Map
    모니터링단, 통합 데이터 지도 데이터 품질 검사
    URL: https://www.bigdata-map.kr/
31. Beta Reader, "Hands on Machine Learning 2nd Ed. Korean Edition":
    베타리더, "핸즈온 머신러닝" (한빛미디어, 2020)
    URL: https://www.hanbit.co.kr/store/books/look.php?p_code=B7033438574

2012

32. Secretary
    Spin Dynamics in Nanomagnets, satellite workshop of ICM2012,
    August 15–18, 2012, Hoam Faculty House, Seoul National University, Seoul, Korea.

2010

33. Editor, Book of Proceedings
    EU-Korea Conference on Science and Technology 2010,
    July 29–31, 2010, The Vienna Imperial Riding School, Vienna, Austria.
34. Program Committee
    EU-Korea Conference on Science and Technology 2010,
    July 29–31, 2010, The Vienna Imperial Riding School, Vienna, Austria.

2007

35. Official home page design, official poster design and web programming
    The 4th Conference of the Asian Consortium on Computational Materials Science,
    September 13–16, 2007, Korea Institute of Science and Technology, Seoul, Korea.

2006

36. Conference Poster Design
    The International Conference on Advanced Structural Steels,
    August 22–24, 2006, Gyeongju Hilton Hotel, Gyeongju, Korea.

COMPUTER SKILLS

Programming Languages:	Python, C/C++
Graphics Programs:	Digital Micrograph, ImageJ, Photoshop
CAD and Visualizations:	Python Matplotlib ecosystem, AutoCAD, GiD, Salome, Tecplot, Paraview

SOFTWARE CERTIFICATES

2017

1. SW Certificate: Advanced 알고리즘 등급시험
   Samsung Electronics
2. SW Expert
   Samsung Electronics

1999

3. Engineer Information Processing 정보처리기사
   Human Resources Development Services of Korea 한국산업인력공단

EXPERIMENTAL SKILLS

Specimen Preparation:	PECVD, DC/RF magnetron sputtering, Ion Milling, PIPS
Micro / Nano Fabrication:	Mask aligner(MA-6), Wire bonder (KIST)
	TEM specimen preparation (Vienna University of Technology)
Microscopy:	AFM (licence A: Korea Institute of Science and Technology)
	MFM (licence A: Korea Institute of Science and Technology)
	TEM JEOL CM20 (licence C: Seoul National University)
	TEM TECNAI F20 (full time user, Vienna University of Technology)

LANGUAGES

Native Language:	Korean	
Other Languages:	English*	German
Reading skills	fluent	basic
Writing skills	fluent	basic
Verbal skills	fluent	basic

*Samsung Electronics internal certifications on English proficiency @2016: TOEIC 940, OPIc AL