

FACULTY VITA

I. BACKGROUND, PROFESSIONAL EXPERIENCE AND RECOGNITIONS

A. Education

Ph.D.	The University of Illinois at Urbana-Champaign	Mechanical Engineering	May 2008
M.S.	Yonsei University (Seoul, Korea)	Mechanical Engineering	Feb. 1998
B.S.	Yonsei University (Seoul, Korea)	Mechanical Engineering	Feb. 1996

B. Academic Appointments

Professor	Dept. of Mechanical Engineering, Texas Tech University	Sept. 2024 – Present
Associate Professor	Dept. of Mechanical Engineering, Texas Tech University	Sept. 2015 – Present
Associate Chair of Research and Graduate Affairs	Dept. of Mechanical Engineering, Texas Tech University	Aug. 2018 – Aug. 2019
Assistant Professor	Dept. of Mechanical Engineering, Texas Tech University	Aug. 2009 – Aug. 2015
Graduate Research Assistant	Dept. of Mechanical Engineering, University of Illinois at Urbana-Champaign	Aug. 2004 – April 2008

C. Other Professional Employment

Staff R&D Engineer	Seagate Technology LLC (Shakopee, MN)	April 2008 – Aug. 2009
Senior R&D Engineer	Samsung Electronics Co. Ltd (Suwon/Korea and San Jose/CA)	Jan. 1998 – July 2004

D. Honors and Awards

1. Research Award

- 1) Outstanding Faculty Mentor for Undergraduate Research and Creative Activities, Texas Tech University, 2023
- 2) Ed and Linda Whitacre Faculty Fellow, Texas Tech University, 2020
- 3) Whitacre Engineering Research Award, Texas Tech University, 2015
- 4) US Air Force Summer Faculty Fellowship Award, AFOSR, 2014
- 5) US Air Force Summer Faculty Fellowship Award, AFOSR, 2012
- 6) NSF BRIGE Award, NSF, 2012

2. *Accomplishment Award*

- 1) Outstanding Engineer of the Year 2000, Samsung Electronics Co. Ltd, 2001

3. *Institutional Travel Award*

- 1) International Travel Fund (ITF) Award, Texas Tech University, 2016
- 2) Schaller Fund Graduate College Travel Grant, University of Illinois at Urbana-Champaign, 2007

4. *Scholarship*

- 1) Samsung Scholarship Award, Samsung Electronics Co. Ltd, 1996-1998

II. SCHOLARSHIP AND RESEARCH/CREATIVE ACTIVITIES

A. Scholarship

^{a)} Denotes corresponding author by the PI

1. Articles in Peer-Reviewed Journals – In Print or Accepted

1. M. Choi, H. Won, Y.-K. Hong, **C.-D. Yeo^{a)}**, N. Shah, B.-C. Choi, W. Lee, H. Choi-Yim, W. Lee, and J. Thiele, “Tuning the Magnetocrystalline Anisotropy of Rare-Earth Free L1₀-ordered Mn_{1-x}TM_xAl Magnetic Alloy (TM = Fe, Co, or Ni) with Transition Elements,” *Journal of Magnetism and Magnetic Materials* 589, 171513, 2023.
2. S. Talukder, B. Dankesreiter*, **C.-D. Yeo^{a)}**, and R. Kuether, “Dynamic Response of Electrical Contact Resistance (ECR) under Structural Vibration,” *Acta Mechanica*, accepted, 2023.
3. M. Choi, Y.-K. Hong, H. Won, **C.-D. Yeo^{a)}**, and W. Lee, “Magnetocrystalline Anisotropy of Interstitially and Substitutionally Sn-doped MnBi for High Temperature Permanent Magnet Applications,” *AIP Advances* 13, 105015, 2023.
 ➤ Being selected as a cover page of AIP Advances October Issue
4. N. Shah, **C.-D. Yeo^{a)}**, Y.-K. Hong, M. Choi, and J. You, “Change of Electrical and Transport Properties of Nickel Oxide by Carrier Concentration and Temperature through First-Principle Calculations,” *Nanomanufacturing and Metrology* 6, 37, 2023.
5. Y. Jung, **C.-D. Yeo^{a)}**, “Mechano-Chemical Properties and Tribological Performance of Thin Perfluoropolyether (PFPE) Lubricant Film under Environmental Contaminants,” *Lubricants* 11(7), 306, 2023.
6. S. Talukder, J. Kaur, J. Lawrence, J. Xu, R. Choudhary, C. Korzeniewski, E. Quitevis, **C.-D. Yeo^{a)}**, “Modified Graphene Oxide as an Additive to Enhance the Lubricity of Ionic Liquids,” *ACS Applied Engineering Materials*, 1(2), 756–768, 2023.
7. S. Talukder, **C.-D. Yeo^{a)}**, Y.-K. Hong, M. Choi, J. Bishop, and R. Flicek, “Analytical Modeling and Simulation of Electrical Contact Resistance (ECR) for Rough Electrode Surface Contact,” *AIP Advances* 12, 025204, 2022.
8. H. Won, Y.-K. Hong, M. Choi, H. Garcia, D. Shin, Y.-S. Yoon, K. Lee, H. Xin, and **C.-D. Yeo**, “Microwave absorption performance of M-type hexagonal ferrite and MXene composite in K_a and V bands (5G mmWave frequency bands),” *Journal of Magnetism and Magnetic Materials* 560, 169523, 2022.

9. N. Shah, J. Song, and **C.-D. Yeo**^{a)}, "Thermomechanical Properties and Frictional Contact Behavior of Oxygen Doped DLC Film through Molecular Dynamics Simulation," *Diamond & Related Materials* **120**, 108653, 2021.
10. S.M. Rahman, D. Purani, S. Ali, and **C.-D. Yeo**^{a)}, "Effects of SiO₂ Contaminant on Thermo-Mechanical/Chemical Properties and Lubricity of PFPE Lubricants," *Lubricants* **9** (90), 2021.
11. B. Dankesreiter, J. Song, S. Rahman, N. Shah, and **C.-D. Yeo**^{a)}, "Effects of Diffused Hydrogen Atoms on Thermomechanical Properties and Contact Behavior of DLC Film", *Journal of Applied Physics*, 130, 025303, 2021.
12. H. Won, Y.-K. Hong, M. Choi, F. Yan, G. Mankey, X. Han, W. Lee, **C.-D. Yeo**, T. Lee and J. K. Lee, "Ferromagnetic Branch Design for High Coercivity Alnico Magnet," *IEEE Magnetics Letters* **12**, 7501505, 2021.
13. M. Choi, Y.-K. Hong, H. Won, G. Mankey, **C.-D. Yeo**^{a)}, N. Shah, W. Lee, M. Jung, and J. Thiele, "Upper Limit of Carbon Concentration in Ferromagnetic L10-ordered FePt-C for Tb/in² Data Storage Density Heat-Assisted Magnetic Recording (HAMR) Media," *IEEE Trans. Magn.* **57**(10), 3201006 (2021).
14. M. Choi, Y.-K. Hong, H. Won, G. Mankey, **C.-D. Yeo**^{a)}, W. Lee, M. Jung, T. Lee, and J. K. Lee, "Suppressing Antiferromagnetic Coupling in Rare-Earth Free Ferromagnetic MnBi-Cu Permanent Magnet," *Journal of Applied Physics* **129**, 113902 (2021).
15. J. You, Z. Lin, C. Gray, Z. Wang, and **C.-D. Yeo**, " Numerical Simulations of Hydrogen Interstitial Diffusion and Ferroelectricity Degradation in Lead Titanate Films" *Journal of Physics D: Applied Physics* **54**, 155305 (2021).
16. J. Song, S. Talukder, S. Rahman, Y. Jung, **C.-D. Yeo**^{a)}, "Comparison Study on Surface and Thermo-Chemical Properties of PFPE lubricants on DLC Film through MD Simulations," *Tribology International* **156**, 106835 (2021).
17. **C.-D. Yeo**, M. He, J. Lee, N. M. R. Shah, Y.-K. Hong, M. Choi, J. H. You, D. Purani, J. K. Lee, "Recovering Magnetic Domains of Nanoscale-mechanically Damaged Ferromagnetic Thin Film of Information Data Storage," *Applied Materials Today* **21**, 100825 (2020).
18. J. Lee, **C.-D. Yeo**^{a)}, Z. Hu^{*}, V. D. Thalangama-Arachchige, J. Kau, E. L. Quitevis, G. Kumar, Y. P. Koh and S. Simon, "Friction and Wear of Pd-Rich Amorphous Alloy (Pd₄₃Cu₂₇Ni₁₀P₂₀) with Ionic Liquid (IL) as Lubricant at High Temperature," *Metals* **9**, 1180 (2019).
19. S.M. Rahman, J. Song, and **C.-D. Yeo**^{a)}, "Computational study on surface energy of amorphous DLC with respect to hybridization state of carbon and potential functions," *Diamond & Related Materials* **95**, 127 (2019).
20. J. Lee, M. He, Z. Hu, G. Kumar, V. D. Thalangamaarachchige^{*}, E. L. Quitevis, and **C.-D. Yeo**^{a)}, "Friction and Wear of Pd-rich Amorphous Alloy (Pd₄₃Cu₂₇Ni₁₀P₂₀) under Dry and Ionic Liquid (IL) Lubricated Conditions," *Wear* **408–409**, 190 (2018).
21. Z. Lin, J. You, C. Jinghong, and **C.-D. Yeo**, "Molecular Dynamics Simulations of Ferroelectric Domain Formation by Oxygen Vacancy" *Journal of Physics D: Applied Physics* **51**, 185303 (2018).
22. M. He, and **C.-D. Yeo**^{a)}, "Evaluation of Thermal Degradation of DLC Film Using a Novel Raman Spectroscopy Technique," *Coatings* **8**(4), 143 (2018).

23. M. He, and **C.-D. Yeo**^{a)}, “Micro-Wear and Friction of Carbon Film with Molecularly Thin PFPE Lubricants,” *Journal of Mechanical Science and Technology* **32 (7)**, 3291 (2018).
24. J. Song and **C.-D. Yeo**^{a)}, “Finite Element Analysis Simulations of Thermomechanical Head-Disk Interface Contact in Thermal Flying-Height Control Head Slider Design,” *Tribology International* **98**, 299 (2016).
25. J. Park, Y.-K. Hong, H.-K. Kim, W. Lee, **C.-D. Yeo**, S.-G. Kim, M.-H. Jung, C.-J. Choi, and O. N. Mryasov, “Electronic structures of MnB soft magnet,” *AIP ADVANCES* **6**, 055911 (2016).
26. J. Park, Y.-K. Hong, **C.-D. Yeo**, S.-G. Kim, D. Kuo, L. Gao, and J.-U. Thiele, “Electronic Structure and Magnetic Properties of Mn-substituted Fe-Pt,” *IEEE Trans. Mag* **52(7)**, 3201904 (2016).
27. J. Song, S. Lee, J. Lee, and **C.-D. Yeo**^{a)}, “Atomic Degradation and Wear of Thin Carbon Films under High Speed Sliding Contact using Molecular Dynamics Simulation,” *Tribology Letters* **60:1**, 1–7 (2015).
28. **C.-D. Yeo**^{a)}, A. Palazotto, J. Song* and R. Buentello, “The Evaluation of Thermomechanical Damage of a Slipper and Rail in a Rocket Sled System,” *ASTM Journal of Testing and Evaluation* **44(4)**, 1443 (2016)
29. J. Lee, J. Maharjan, M. He, and **C.-D. Yeo**^{a)}, “Effects of In-Situ Sliding Contact on Dynamic Adhesion Measurement in Colloidal Probe Technique,” *International Journal of Adhesion and Adhesives* **60**, 109 – 116 (2015).
30. M. He, S. Lee, and **C.-D. Yeo**^{a)}, “Investigating Atomic Structure of Thin Carbon Film under Mechanical Stress and Frictional Heat Generation,” *Surface and Coatings Technology* **261**, 79-85 (2015).
31. S. Lee, M. He, and **C.-D. Yeo**^{a)}, “Thermal Degradation and Burnishing Wear of Thin Carbon Film by Frictional Heat Generation,” *ASME Trans. Journal of Tribology* **136(4)**, 041603 (2014).
32. S. Lee, D. Purani, A. Kim, and **C.-D. Yeo**^{a)}, “Thermomechanical Contact between Magnetic Recording Head and Disk Defect accounting for Heat Partition Factor,” *IEEE Trans. Magn.*, 50(30), 3300307 (2014).
33. S. Lee, M. He, G. Abo, Y. Hong, and **C.-D. Yeo**^{a)}, “The Effects of Contact Stress on Magnetic Properties of Ferromagnetic Film,” *Journal of Applied Physics* **112**, 084901 (2012).
 - ✓ Featured in Tribology & Lubrication Technology (TLT) Magazine (June 2013)
34. **C.-D. Yeo**, J.K. Lee, and A.A. Polycarpou, “Dynamic adhesive forces in rough contacting bodies including normal and sliding conditions,” *Journal of Adhesion Science and Technology* **26**, 2709-2718 (2012).
35. S.A. Lee, S. Niazie, and **C.-D. Yeo**^{a)}, “The Change in Surface Properties of Magnetic Recording Media under Pulsed Laser Application,” *Tribology Letters* **47**, 57-65 (2012).
36. S.A. Lee and **C.-D. Yeo**^{a)}, “Microwear Mechanism of Head Carbon Film during Head Disk Interface Sliding Contact,” *Tribology International* **45**, 30-37 (2012).
37. I.-H. Sung, H. J. Kim, and **C.-D. Yeo**, “First Observation on the Feasibility of Scratch Formation by Pad-Particle Mixture in CMP Process,” *Applied Surface Science* **258**, 8298–8306 (2012).

- ✓ Featured in the ADINA News (Tech Review)
38. I.-H. Sung, W.Y. Yang, H. Kwarck and **C.-D. Yeo**^{a)}, “Fluid-Structure Interaction Modeling and Simulation of CMP Process for Semiconductor Manufacturing”, *Transactions of the Society of Information Storage Systems* **7(2)**, 60-64 (2011).
 39. **C.-D. Yeo**, R.R. Katta, J.K. Lee and A. A. Polycarpou, “Effect of asperity interactions on rough surface elastic contact behavior: Hard film on soft substrate,” *Tribology International*, Vol. 43, pp. 1438-1448 (2010).
 40. **C.-D. Yeo**, R.R. Katta and A.A. Polycarpou, “Improved Elastic Contact Model Accounting for Asperity and Bulk Substrate Deformation,” *Tribology Letters* **35**, 91-203 (2009).
 41. **C.-D. Yeo**, S.-C. Lee, and A.A. Polycarpou, “Dynamic adhesive force measurements under vertical and horizontal motions of interacting rough surfaces”, *Review of Scientific Instruments* **79**, 015111 (2008).
 42. **C.-D. Yeo**, A.A. Polycarpou, S.C. Lee and M. Sullivan, “Friction Force Measurements and Modeling in Hard Disk Drives,” *IEEE Trans. Mag.* **44**, 157-162 (2008).
 43. **C.-D. Yeo**, A.A. Polycarpou, J.D. Kiely and Y.-T. Hsia, “Nanomechanical Properties of Ultra-thin Carbon Film Overcoats Using the Nanoindentation Technique”, *Journal of Materials Research* **22**, 141-151 (2007).
 44. **C.-D. Yeo**, A.A. Polycarpou, “A Correction to the Nanoindentation Technique for Ultra-shallow Indentation Depths”, *Journal of Materials Research* **22**, 2359-2362 (2007).
 45. K.M. Lee, **C.-D. Yeo** and A.A. Polycarpou, “Relationship between scratch hardness and yield strength of elastic perfectly plastic materials using finite element analysis,” *Journal of Materials Research* **23**, 2229-2237 (2008).
 46. E. E. Nunes, **C.-D. Yeo**, R. Katta and A. A. Polycarpou, “Computational Analysis of the Effects of Planarization in Pattern Media,” *IEEE Trans. Mag.* **44**, 3667-3670 (2008).
 47. K.M. Lee, **C.-D. Yeo** and A.A. Polycarpou, “Nanomechanical Property and Nanowear Measurements for Sub-10 nm Thick Films in Magnetic Storage,” *Experimental Mechanics* **47**, 107-121 (2007).
 48. K.M. Lee, **C.-D. Yeo** and A.A. Polycarpou, “Mechanical Property Measurements of Thin Film Carbon Overcoat on Recording Media towards 1 Tb/in²,” *Journal of Applied Physics* **99**, 08G906 (2006).
 49. **C.-D. Yeo**, J. Yun and D.-E. Kim, “Torque Characteristics of Cam/Tappet System,” *Transactions of the Korean Society of Mechanical Engineers - A*, **22(8)**, 1465-1472 (1998).
 50. **C.-D. Yeo** and D.-E. Kim, “Wear Reduction of Tappet Surface by Undulated Surface,” *Tribology and Lubricants* **14-2**, 63-74 (1998).

2. Articles in Peer-Reviewed Journals – Under Review/To be Submitted

51. Y. Jung, J. Kaur, E. Quitevis, **C.-D. Yeo**^{a)}, “Lubricity of Dicationic Liquid, 1-6-bis(3-methylimidazolium-1-yl)hexane bis[(trifluoromethane)sulfonyl]amide, with IL-Grafted Graphene Oxide as an Additive,” *ACS Applied Engineering Materials*, under review, 2023.

52. B. Dankesreiter, N. Shah, **C.-D. Yeo**^{a)}, “Computational Study on Nitrogenated Amorphous Carbon Film under Thermomechanical Surface Contact,” *Diamond and Related Materials*, to be submitted.
53. Y.-K. Hong, M. Choi, J. Park, and **C.-D. Yeo**^{a)}, “Mossbuer study of ferromagnetic Fe_3Se_4 ,” to be submitted to *Journal of Applied Physics*.
54. M. Choi, Y.-K. Hong, H. Won, S. Li, W. Lee, and **C.-D. Yeo**, “The Role of Coercivity in Spoke-Type Permanent Magnet Synchronous Motor (PMSM) Performance,” to be submitted to *IEEE Magnetics Letters*.
55. M. Choi, Y.-K. Hong, H. Won, W. Lee, H. Lee, and **C.-D. Yeo**^{a)}, “Electronic structure of carbon substituted τ -phase MnAl ,” to be submitted to *Journal of Applied Physics*.

3. Peer-Reviewed Conference Proceedings, Bulletins, or Reports – In Print/Accepted

1. B. Dankesreiter*, **C.-D. Yeo**^{a)}, “*Simulation of Rough Electrodes Coupled with Structural Dynamics*,” The 68th Holm IEEE Holm Conference on Electrical Contact.
2. M. Choi, Y.-K. Hong, H. Won, S. Li, S. Rahman, M. Nurunnabi, W. Lee, **C.-D. Yeo**, “The Effect of the Ratio of Remanent Flux Density to Coercivity of Magnet on Spoke-Type Permanent Magnet Synchronous Motor (PMSM) Performance,” The 11th International Conference on Power Electronics - ECCE Asia (ICPE 2023-ECCE Asia).
3. C.-L. Kim, H.-J. Kim, H.-J. Kim, **C.-D. Yeo**, K.-H. Chung, I.-H. Sung, “A Review of Tribology R&D Trends : Prospects of Future Challenges and Issues,” Korean Tribology Society Conference 2019, 136-137 (2019).
4. H. Chang, J. Song, **C.-D. Yeo**, J. Kim, “Exploring factors influencing perceived quality on sportswear fabric,” International Textile & Apparel Association Proceedings, Santa Fe, NM.
5. S.A. Lee and **C.-D. Yeo**^{a)}, “Thermo-Mechanical Contact and Micro-Wear in Head Disk Interface,” ASME/STLE International Joint Tribology Conference 2011, 317-319 (2011).
6. **C.-D. Yeo** and A.A. Polycarpou, “Elastic Contact Model Accounting for Both Asperity and Substrate Compliance With Application to Patterned Media,” ASME/STLE International Joint Tribology Conference 2007, 1121-1122 (2007).
7. **C.-D. Yeo**, D.-E. Kim, and J. Yoon, “Torque Measurement and Tribological Characteristics of the Cam / Tappet System in an I . C . Engine,” Korean Tribology Society Conference 1997, 25, 19-24 (1997).
8. **C.-D. Yeo**, D.-E. Kim, and J. Yoon, “Run-in behaviour and wear characteristics of tappet in valve train,” The Korean Society of Mechanical Engineers (KSME) Conference 1997,803-808 (1997).

4. Formally Invited Seminars and Presentations

1. “Impacts of Structural Vibration and Electrodes’ Roughness on Electrical Contact Resistance,” Mechanical Engineering Department Seminar Series at The University of Alabama (Tuscaloosa, AL), September 21, 2022.

2. "Advanced Contact Mechanics of Structural and Electromechanical Components – Multiphysics Model and Experiment," Aerospace Distinguished Lecture Series at Seoul National University (Seoul, Korea), September 16, 2022.
3. "Electrical Contact Resistance under Structural Vibration," BK21 Lecture Series at Yonsei University (Seoul, Korea), June 6, 2022.
4. "Rough Surface Contact Model to Investigate Electrical Contact System," Sandia National Laboratory (Albuquerque, NM), August 19, 2020.
5. "Experimental Study on Material Degradation and damage of Amorphous Alloy under Sliding Contact," Mechanical Engineering Department Seminar, Guizhou University, China, May 23, 2019.
6. "Friction and Wear of Pd-rich Amorphous Alloy under Dry and IL-Lubricated Conditions," Mechanical Engineering Department Seminar Series, Seoul National University of Science and Technology, May 30, 2018.
7. "Magnetic Property Change of Recording Media by Mechanical Contact and Temperature Rise," Seagate Technology RMO, May 12, 2017.
8. "Thermomechanical/chemical Degradation of Thin Carbon Film under High Speed Surface Contact," IEEE Magnetics Society Distinguished Lectures jointly sponsored by MINT and IEEE Alabama Chapter, November 18, 2016.
9. "Thermo-mechanical/chemical Degradation of Thin Carbon Film under High Speed Surface Contact," Material Science and Engineering Department Seminar Series, Dankook University, June 14, 2016.
10. "Bonding Preference of Hydrocarbon Molecules on a Lubricated Disk Surface," The Collaborative Conference on 3D and Materials Research (CC3DMR, Incheon/Seoul), June 19, 2016
11. "Bonding Preference of Hydrocarbon Molecules on Lubricated Disk Surface," Seagate Conclave, August 21, 2015.
12. "Thermomechanical Contact and Surface Damage in Head-Disk-Interface," Seagate Conclave, July 20, 2014.
13. "Carbon Products as a Smart Corrosion and Wear Inhibitor for Metallic Structure and Devices," Army Research Laboratory (Aberdeen Proving Ground, MD), January 31, 2014.
14. "Atomic Structure Change and Burnishing Wear of Thin Carbon Film during High-Speed Sliding Contact," Mechanical Engineering Department Seminar Series, Texas A&M University, October 23, 2013.
15. "Thermomechanical Contact between Magnetic Recording Head and Disk Defect accounting for Heat Partition Factor," IEEE The 24th Magnetic Recording Conference, August 21, 2013.
16. "Thermomechanical Contact and Surface Damage in Head-Disk-Interface," Seagate Research Center in Korea, August 14, 2013.
17. "Computational Study on the Mechanism of Friction and Wear of Rocket Sled System," Air Force Institute of Technology, January, 2013.
18. "Frictional and adiabatic heat on the wear of head carbon film." Seagate Technology (Shakopee, Minnesota), January 9, 2013.
19. "Mechanically Induced Electrical/Magnetic Degradation.", Seagate Technology (Shakopee, Minnesota), August 1, 2013.

20. "Effects of Mechanical Contact Stress on Magnetic Properties of Ferromagnetic Film," Interdisciplinary Lecture Series, College of Engineering, Texas Tech University, November 2012
21. "Rough Surface Interactions at Micro-/Nano-Scale Contact Systems," Mechanical Engineering Department Seminar, Texas Tech University, October 2012
22. "Thermo-Magneto-Mechanical Performance of a Media under High Speed HDI Contact," Seagate Technology RMO, October 12, 2012
23. "Thermo-Mechanical Contact and Micro-Wear of Head Carbon Film," Seagate Technology TCO, December 9, 2011.
24. "Pressure Induced Media Deformation," Western Digital Corporation, October 19, 2010.
25. "Adhesive Rough Surface Contact at Micro/Nano-Systems," Mechanical Engineering seminar series, Yonsei University (Seoul, Korea), July 19, 2010.
26. "Advanced Model for Rough Surface Interactions accounting for Substrate Deformation and Asperity Interactions," Brain Korea (BK) Seminar Series, SungKyunKwan University (Suwon, Korea), July 22, 2010.
27. "Nanomechanical properties of thin film through nanoindentation and nanoscratch," Intel (Phoenix, AZ), 2007
28. "Experimental study on dynamic adhesion of thin films," Qualcomm (San Jose, CA), 2007
29. "Rough surface interaction at micro/nano-scale systems," Xerox (Rochester, NY), 2007

5. Contributed Presentations

1. M. Choi, Y.-K. Hong, H. Won, **C.-D. Yeo**, N. Shah, J. Lee, T. Lee, and T. Lim, "Tuning Magnetocrystalline Anisotropy of LTP-MnBi," Paper No. KOC-04, 67th Annual Conference on 2022 Magnetism and Magnetic Materials, Minneapolis, MN, October 31-November 4, 2022.
2. M. Choi, Y.-K. Hong, H. Won, **C.-D. Yeo**, S. Kim, H. Lee, W. Lee, "Tuning Spin and Magnetocrystalline Anisotropy of L1-ordered MnAl with Transition Metal Elements," IEEE International Magnetic Conference (INTERMAG) (Virtual), April 26-30, 2021.
3. **C.-D. Yeo**^{a)}, S. Rahman, "Temperature Dependent Material Behavior of Molecularly Thin Lubricants on Magnetic Recording Media," K-TRIB 2020 (Virtual), December 2, 2020.
4. **C.-D. Yeo**^{a)}, N. Shah, Y.-K. Hong, M. Choi, J. You, S. Ali, D. Purani, J. Lee, "Effects of Thermo-Mechanical Contact on Ferromagnetic Thin Film of PMR (perpendicular magnetic recording) Media," 65th Annual Conference on Magnetism and Magnetic Materials (Virtual), November 4, 2020.
5. **C.-D. Yeo**^{a)}, C.-L. Kim, H.-J. Kim, K.-H. Chung, I.-H. Sung, "A review of tribology R&D trends: Prospects of future challenges and issues," 68th Korean Tribologist Society Conference (Pusan, Korea), October 2019.
6. **C.-D. Yeo**^{a)}, S. Rahman, "Thermomechanical degradation of DLC under lubricated condition," 46th International Conference on Metallurgical Coating and Thin Films (San Diego, USA), May 21, 2019.

7. **C.-D. Yeo**^{a)}, Y.-K. Hong, Y.-K., Choi, M., Won, H., Lee, W., Kuo, D., Thiele, J.-U., "Computational Materials Science with Special Emphasis on Magnetic Materials," 2019 MMM-IEEE Intermag (Washington DC, USA), January 2019.
8. **C.-D. Yeo**, Hong, Y.-K., "Computational Materials Science with Special Emphasis on Magnetic Materials," International Conference of Asian Union of Magnetism Societies 2018 (Jeju, Korea), June 4, 2018.
9. **C.-D. Yeo**^{a)}, J. Lee, "Friction and Wear Behavior of Metallic Glasses with Ionic Liquids as Lubricants," STLE 73rd Annual Meeting and Exhibition (Minneapolis, USA), May 21, 2018.
10. **C.-D. Yeo**, Choi, M. Hong, Y.-K. Lee, W., Won, H., Kim, S.-G., "Electronic Structures of Ferromagnetic MnAl-C Intermetallic Compound," 62nd Annual Conference on Magnetism and Magnetic Materials (Pittsburgh, USA), November 6, 2017.
11. **C.-D. Yeo**, Choi, M. Hong, Y.-K. Lee, W., Won, H., Kim, S.-G., " Electronic Structures of Ferromagnetic MnBi and MnBi-C Intermetallic Compounds," 62nd Annual Conference on Magnetism and Magnetic Materials (Pittsburgh, USA), November 6, 2017.
12. **C.-D. Yeo**^{a)}, J. Song, "Molecular Dynamics Simulations for the Bonding Preference of Hydrocarbon Contaminants in Hard Disk Drives," World Tribology Congress (Beijing, China), September 19, 2017.
13. **C.-D. Yeo**, Choi, M., Hong, Y.-K., Lee, W., Won, H., "Calculation of Magnetization and Magneto-crystalline Anisotropy for Carbon-doped Fe-Pt Ferromagnet," Advances in Functional Materials Conference 2017 (Los Angeles, USA), August 14, 2017.
14. **C.-D. Yeo**^{a)}, J. Lee, "Friction and Wear Mechanism of Metallic Glasses with Ionic Liquids as a Lubricant," STLE 72nd Annual Meeting and Exhibition (Atlanta, USA), May 21, 2017.
15. **C.-D. Yeo**^{a)}, J. Song, "Lubricant Transfer at the Head-disk Interface in Hard Disk Drive using Molecular Dynamics Simulations," STLE 72nd Annual Meeting and Exhibition (Atlanta, USA), May 21, 2017.
16. **C.-D. Yeo**^{a)}, M. He, S. Lee, J. Song "Thermomechanical Properties and Micro-Contact Performance of Oxidized DLC Film using Molecular Dynamics Simulations," WCCM XII and APCOM VI (Seoul, Korea), July 26, 2016.
17. **C.-D. Yeo**^{a)}, J. Song, "Bonding Preference of Hydrocarbon Molecules on a Lubricated Disk Surface," STLE Annual Meeting, STLE (Las Vegas, NV), May 17, 2016.
18. **C.-D. Yeo**^{a)}, M. He, S. Lee, "Thermomechanical/chemical Degradation of DLC Coating under High Speed Contact," ASME IMECE (Houston, TX), November 17, 2015.
19. H. Chang, J. Song, **C.-D. Yeo**, J. Kim, "Exploring Factors Influencing Perceived Quality on Sportswear Fabric," 2015 ITAA Annual Conference, International Textile & Apparel Association (ITAA) (Santa Fe, NM), November 11, 2015.
20. **C.-D. Yeo**^{a)}, J. Song, "Study on the Thermomechanical Properties and Contact Performance of Oxidized DLC Films Using Molecular Dynamics Simulation," STLE Tribology Frontiers, STLE (Denver, CO), October 23, 2015.

21. **C.-D. Yeo^{a)}**, J. Song, "Atomic-scale Contact Behavior of Thin Carbon Films under High Speed Sliding Contact," STLE Tribology Frontiers (Chicago, IL), October 24, 2014.
22. **C.-D. Yeo^{a)}**, J. Song, A. Palazotto, "Thermomechanical Wear of Slipper and Rail in Rocket Sled System," World Tribology Congress (Turin, Italy), September 11, 2013.
23. **C.-D. Yeo^{a)}**, S. Lee, "Burnishing Wear Mechanism of Thin Carbon Film during High Speed Sliding Contact," Society of Engineering Science (Providence, RI), July 30, 2013.
24. **C.-D. Yeo^{a)}**, S. Lee, "Effect of Contact Stress on Magnetic Properties of Ferromagnetic Materials," ASME International Joint Tribology Conference (Denver, CO), October 11, 2012.
25. **C.-D. Yeo^{a)}**, S. Lee, "Thermo-Mechanical Contact and Micro-Wear in Head Disk Interface," ASME International Joint Tribology Conference (Los Angeles, CA), October 22, 2011.
26. **C.-D. Yeo^{a)}**, S. Lee, "Mixed Effects of Localized Heating and Mechanical Contact on Head-Disk-Interface Reliability in Heat Assisted Magnetic Recording," ASME International Joint Tribology Conference (San Francisco, CA), October 2010.

B. Patents, Disclosures, and Technology Transfer

1. **C.-D. Yeo**, "Single head disk drive having backup system information and method of recording and/or reading system information thereof," US Patent 7,167,961B2 (2007).
2. **C.-D. Yeo**, J.Y. Kim, "Method of screening hard disk drive," US Patent 7,123,428 (2006).
3. J.Y. Kim, **C.-D. Yeo**, S.H. Song, G. Kim, "Methods of optimizing recording current and setting recording density of hard disk drive," US Patent 7,102,838 (2006).
4. J.Y. Kim, **C.-D. Yeo**, "Methods of measuring TPTP of magnetic head and controlling recording current," US Patent 6,999,256 (2006).
5. **C.-D. Yeo**, J.Y. Kim, C. Park, "Method and apparatus for measuring magnetic write width of magnetic head using burst pattern," US Patent 6,992,849 (2006).
6. J.Y. Yun, J.J. Kim, C.W. Cho, **C.-D. Yeo**, "Method and apparatus detecting base line popping noise in a read head and stabilizing the magnetic domain of merged magnetoresistive read-write heads using DC write current and read bias current for an assembled disk drive," US Patent 6,828,784 (2004).

C. Funded Grants and Contracts

- Title of grant: Integrating Electrical Contact Resistance Models into Nonlinear Structural Dynamic Simulations
Funding agency: DOE-Sandia National Laboratory
Dates: 3/01/2021-9/30/2024
Total amount: \$287,804
Role on project: PI
- Title of grant: Material Degradation and Surface Contamination of HDI in HAMR Technology

- Funding agency: Seagate Technology LLC
Dates: 10/01/2020-9/31/2021
Total amount: \$60,000
Role on project: PI
- Title of grant: Integrated research on material degradation and surface contamination during HAMR operation
Funding agency: Seagate Technology LLC
Dates: 10/01/2019-5/31/2021
Total amount: \$60,000
Role on project: PI
 - Title of grant: Ionic Liquids with Graphene Oxide (GO) as Lubricants at Extreme Temperature
Funding agency: Office of Research & Innovation, Texas Tech University
Dates: 12/01/2019-12/31/2020
Total amount: \$4,000
Role on project: PI
 - Title of grant: Investigating Thermo-Chemical/Mechanical Kinetics of HDI Materials under Air Bearing Shear through MD Simulations
Funding agency: Seagate Technology LLC
Dates: 10/01/2016-9/31/2018
Total amount: \$170,000
Role on project: PI
 - Title of grant: Collaborative: Effect of Microstress and Frictional/Adiabatic Heat on Magnetic Property of Ferromagnetic Thin Film
Funding agency: NSF-CMMI
Dates: 4/15/2015-4/14/2018
Total amount: \$514,812 (\$296,771 allocated to the PI)
Role on project: Leading PI
 - Title of grant: Organic Contaminants in HDI: Formation, Growth, and Mechanical Collision
Funding agency: Seagate Technology LLC
Dates: 10/01/2015-9/31/2016
Total amount: \$85,000
Role on project: PI
 - Title of grant: Organic Contaminants in HDI: Formation, Growth, and Mechanical Collision
Funding agency: Seagate Technology LLC
Dates: 10/01/2014-9/31/2015
Total amount: \$85,000

Role on project: PI

- Title of grant: Mechanical Induced Magnetic/Electrical Failures of Head and Media
Funding agency: Seagate Technology LLC
Dates: 10/01/2013-9/31/2014
Total amount: \$85,000
Role on project: PI
- Title of grant: Microwear Mechanism of Carbon Film under Extremely High-Speed Surface Contact accounting for Phase Transition and Oxidation
Funding agency: NSF-ECCS
Dates: 9/01/2012-8/31/2014
Total amount: \$169,376
Role on project: PI
- Title of grant: Thermo-magneto-mechanical Contact Performance of Ferromagnetic Thin Films
Funding agency: Texas Tech University
Dates: 9/01/2013-8/31/2014
Total amount: \$4,500
Role on project: PI
- Title of grant: Integrated Research on Thermo-Mechanical Contact Performance of Head Slider in HDD
Funding agency: Seagate Technology LLC
Dates: 9/01/2012-8/31/2013
Total amount: \$84,857
Role on project: PI

D. Equipment Acquisition

- Changdong Yeo
Equipment: Atomic Force Microscope (NanoSurf ®Mobile S)
Funding agency: Samsung Information Systems America (San Jose, CA)
Original Price: \$120,000
Role on project: PI
- Changdong Yeo
Equipment: VENA VS90 (VENA systems)
Funding agency: Seagate Technology (Bloomington, MN)
Original Price: \$200,000
Role on project: PI

III. TEACHING AND STUDENT MENTORING

A. Instruction for TTU

- Courses taught at Texas Tech University
 - ME 3311 Materials Science and Engineering, ME 3303 Mechanics of Solids, ME 2301 Statics, ME 2302 Dynamics, ME 5340 Elasticity, ME 5345 Computational Mechanics, ME 5343 Contact Mechanics of Engineering Materials
- Faculty-Led Teaching Abroad Program
 - Seville, Spain
 - Tokyo, Japan

B. Curricular Development Activity for TTU

New ME graduate course development:

ME 5343, Contact Mechanics of Engineering Materials, 2010.

IV. INSTITUTIONAL SERVICE**A. University-Level Service**

1. Search Committee for the Dean of College of Engineering, Jan. 2023 - May 2023
2. Institutional Effectiveness (IE) Committee, Sept. 2015~ Aug. 2016
3. Graduate School Dean's Representative for Doctoral Dissertation: Civil Engineering (2021), Chemical Engineering (2020, 2015), Electrical Engineering (2010, 2012, 2013)
4. Faculty Advisor, Korean Student Association in Texas Tech University: 2014 ~ 2017

B. College-Level Service

1. College T&P Committee, Sept. 2022 – Present
2. Graduate School Dean's Representative, 2010 ~ 2021
3. COE Service and Teaching Award Committee (STAC): Fall 2015
4. Invited Lecture, Interdisciplinary Lecture Series, College of Engineering: November 2012

C. Department-Level Service

1. Faculty Search Committee Chair (3 positions), May 2023 – Present.
2. Associate Chair of Graduate Program and Research Affairs, Aug. 2018 - Aug. 2019.
3. ME Graduate Program Committee, 2015~2019
4. Lead committee member for "Renovation of ME PhD Qualifying Exam", Sept. 2016 ~ May 2017.
5. ME Space Reorganization Committee member, Sept. 2015 - Dec. 2015.
6. Coordinator of Mechanical Engineering (ME) Seminar Series, Spring 2015
7. ME Award Committee: Fall 2016, Fall 2017
8. Invited Lecture, Mechanical Engineering Seminar: October 2012

V. PROFESSIONAL SERVICE

A. Editorial and Review Service for Manuscripts

Editorial Board

1. Journal of Nanomanufacturing and Metrology (Publisher: Elsevier), Guest Editor: Special Issue on "Synthesis, Manufacturing and Characterization of Nanomaterials for Advanced Engineering Applications", 2022 - present.
2. Frontiers in Mechanical Engineering: Tribology, Review Editor, 2017 - present.
3. International Journal of Mechanical Systems Engineering, Editorial Board Member, 2016 - present.
4. Korean Society of Tribology and Lubrication Engineers, Associate Editor, 2014 - present.
5. Korean Society of Tribology and Lubrication Engineers, Editorial Board Member, 2011 - present.

Journal Reviewer

1. Nature, Proceedings of the National Academy of Sciences (PNAS), Applied Physics Letters, ACS Applied Materials & Interfaces, Journal of Applied Physics, Journal of Aerospace Engineering, Review of Scientific Instruments, IEEE Transaction of Magnetics, Solar Energy, Composite Science and Technology, Transaction of ASME-Journal of Tribology, Tribology International, Polymer Composites, Tribology Letters, STLE Tribology Transactions, Journal of Aerospace Engineering, Journal of Adhesion Science and Technology, Journal of Mechanical Science and Technology Flexible and Printed Electronics, Transaction of ASME-Journal of Applied Mechanics, Lubricants

B. Service to Professional Societies

Conference Session Chair

1. Session Chair on the division of ‘actuation, shielding and levitation’, 2019 Joint The IEEE International Magnetics Conference (INTERMAG) and the Conference on Magnetism and Magnetic Materials (MMM), Washington DC, 1/14/2019 - 1/18/2019.
2. Session Chair on the division of ‘surface engineering and coatings, ASME IMECE 2015, Houston/Texas, 11/13/2015 - 11/19/2015.
3. Session Chair on the division of ‘materials and tribology, STLE Tribology Frontiers 2014, Chicago/Illinois, 10/26/2014 - 10/28/2014.
4. Session Chair on the division of ‘magnetic storage’, ASME/STLE International Joint Tribology Conference 2010, Los Angeles/California, 10/23/2011-10/26/2011.
5. Session Chair on the division of ‘magnetic storage’, ASME/STLE International Joint Tribology Conference 2010, San Francisco/California, 10/17/2010-10/20/2010.

C. Grant Review Activities

1. NSF Mechanics of Materials and Structures (MoMS)
2. DOE-Office of Basic Energy Sciences (BES)

D. Other Professional Service

Industrial Technical Consultant

1. Western Digital, 2010 ~ 2011, failure analysis and technical discussion on thin film reliability, mechanical stress and deformation of head slider due to localized air pressure.

VI. OUTREACH, COMMUNITY ENGAGEMENT AND OTHER ACTIVITIES

A. Outreach Activities

1. Technical Mentor, the Destination Imagination team in Preston Smith Elementary School (Lubbock, Texas), 2010