CURRICULUM VITAE



Chang-Hee Han

Assistant Professor, College of Software Convergence, Dongseo University

Position: Research Professor

Birth date and place: 29th June 1987; Seoul, South Korea

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SHORT BIOGRAPHY

Dr. Chang-Hee Han graduated from the Department of Biomedical Engineering, Yonsei University in 2011. He received his M.S. and Ph.D. degrees from the Department of Biomedical Engineering at Hanyang University in 2014 and 2018, respectively. He had worked as a postdoctoral associate at Machine Learning Group, Technical University of Berlin, Germany, from 2018 to 2020 (Supervisor: Klaus-Robert Müller). He also worked at Hanyang University as a research professor until February in 2020. He currently works at Dongseo University as an assistant professor from March in 2021.

His research interests cover various fields of neuroengineering including brain-computer interfaces (BCI), neurorehabilitation, noninvasive brain stimulation, and neural signal decoding based on machine learning and deep learning. He has authored 22 articles in peer-reviewed international (SCI-indexed) journals (including 2 submissions), 8 domestic patents, 19 international conference proceeding papers, and 1 research funding (principal researcher).

EDUCATION AND CAREER

2021.02 ~ Present	Assistant Professor, Department of Software, College of Software Convergence,
	Dongseo University
2020.09 ~ 2021.02	Research Assistant Professor, Department of Electronic Engineering, Hanyang
	University
2018.03 ~ 2020.08	Postdoctoral Associate, Machine Learning Group, Technical University of Berlin
	(Supervisor: Klaus-Robert Müller)
2014.03 ~ 2018.02	Ph.D., Dept. of Biomedical Engineering, Hanyang University, Korea
2012.03 ~ 2014.02	(Thesis title: Development of Electroencephalography-based Brain-Computer
	Interface for Communication of Patients with Severe Neuromuscular Diseases)
	M.S., Dept. of Biomedical Engineering, Hanyang University, Korea
	(Thesis title: Mechanisms of Neurorehabilitation Techniques Revealed Using
	Functional Near-Infrared Spectroscopy)
2006.03 ~ 2011.08	B.S., Dept. of Biomedical Engineering, Yonsei University, Korea

EDITORIAL ACTIVITIES

Guest Editor, Special issue: "The challenges in brain-computer interface (BCI) -

Toward practical BCI", Electronics (SCIE-indexed)

2019.03 ~ Present Review Editor, Frontiers in Human Neuroscience (SCIE-indexed)

RESEARCH INTERESTS

■ Brain-Computer Interface : Development of practical BCI systems and experimental paradigms

Neural Signal Processing : Analysis of EEG and fNIRS signals and its applications to clinical science

Neurofeedback
 Development of various neurofeedback strategies using EEG or fNIRS

: Development of deep and machine learning algorithms for biomedical

• Deep and Machine Learning

engineering

AWARDS

2013.11.01	Best Poster Award, Conference of the Korean Society for Human Brain Mapping (Poster title: Single-Trial Classification and Evaluation of The Hemodynamic Responses during Simultaneous Execution of Passive and Active Exercises)
2013.11.08	Best Poster Award, Conference of the Korean Society of Medical & Biological Engineering (Poster title: Single-Trial Classification and Evaluation of The Hemodynamic Responses during Simultaneous Execution of Passive and Active Exercises)
2014.05.09	Best Poster Award, Conference of the Korean Society of Medical & Biological Engineering (Poster title: Data-Driven User Feedback: An Improved Neurofeedback Strategy Considering Individual Variability of EEG Features)

PUBLICATIONS

Peer-Reviewed International Journal Papers (SCI/SCIE-Indexed Journals)

- 25. <u>Chang-Hee Han</u>, Jeong-Hwan Lim, Jun-Hak Lee, Seonghun Park, and Chang-Hwan Im, "Development of an Individualization Process Considering Test-Retest Reliability of EEG Attention Features", <u>In preparation</u>
- 24. <u>Chang-Hee Han</u>, Eujin Kim, and Chang-Hwan Im, "A Survey of Patients with Amyotrophic Lateral Sclerosis for Development of Human-Computer Interface Systems", In preparation

- 23. <u>Chang-Hee Han</u>, Eujin Kim, and Chang-Hwan Im, "Development of an HCI/BCI-Based Environmental Control System for Patients in the Locked-in State", Journal of NeuroEngineering and Rehabilitation, <u>In</u> preparation
- 22. <u>Chang-Hee Han</u> and Han-Jeong Hwang, "Improved Drowsiness Detection Based on Ear-EEG Using a Convolutional Neural Network", Sensors, In submission
- 21. Ga-Young Choi, <u>Chang-Hee Han</u>, Hyung-Tak Lee, Nam-Jong Paik, Won-Seok Kim, and Han-Jeong Hwang, "An Artificial Neural-Network Approach for Motor Hotspot Identification Based on Electroencephalography: A Proof-of-Concept Study", *Journal of NeuroEngineering and Rehabilitation*, 2020, In submission
- 20. <u>Chang-Hee Han</u>, Klaus-Robert Müller, and Han-Jeong Hwang, "Enhanced Performance of a Brain Switch by Simultaneous Use of EEG and NIRS Data for Asynchronous Brain-Computer Interface", *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, (ISSN: 1534-4320), vol. 28(10), pp 2102-2112, 17 August 2020, (IF: 3.340; Q1, Rank = 7/68 in Rehabilitation, Top 10%)
- 19. Seonghun Park, <u>Chang-Hee Han</u>, and Chang-Hwan Im, "Design of Wearable EEG Devices Specialized for Passive Brain-Computer Interface Applications", *Sensors*, *(eISSN: 1424-8220)*, vol. 20(16), Art.No. 4572, 13 August 2020, (IF: 3.275; Q1, Rank = 15/64 in Instruments & Instrumentation)
- 18. <u>Chang-Hee Han</u>, Klaus-Robert Müller, and Han-Jeong Hwang, "Brain-Switches for Asynchronous Brain-Computer Interfaces: A Systematic Review", *Electronics (eISSN: 2079-9292)*, vol. 9(3), Art.No. 422, 02 March 2020, (IF: 2.412; Q2, Rank = 125/266 in Engineering, Electrical & Electronics)
- 17. Ho-Seung Cha, <u>Chang-Hee Han</u>, and Chang-Hwan Im, "Prediction of Individual User's Dynamic Ranges of EEG Features from Resting-State EEG Data for Evaluating Their Suitability for Passive Brain-Computer Interface Applications", *Sensors (eISSN: 1424-8220)*, vol. 20(4), Art.No. 988, 12 February 2020, (IF: 3.275; Q1, Rank = 15/64 in Instruments & Instrumentation)
- 16. <u>Chang-Hee Han</u>, Eujin Kim, and Chang-Hwan Im, "Development of a Brain-Computer Interface Toggle Switch with Low False-Positive Rate Using Respiration-Modulated Photoplethysmography", *Sensors (eISSN: 1424-8220)*, vol. 20(2), Art.No. 348, 08 January 2020 (IF: 3.275; Q1, Rank = 15/64 in Instruments & Instrumentation)
- 15. Ga-Young Choi, <u>Chang-Hee Han</u>, Young-Jin Jung, and Han-Jeong Hwang, "A Multi-Day and Multi-Band Dataset for a Steady-State Visual-Evoked Potential Based Brain-Computer Interface", *GigaScience (ISSN: 2047-217X)*, vol. 8(11), pp. 1-11, 25 November 2019 (IF: 5.993; Q1, Rank = 10/71 in Multidisciplinary Science)
- 14. <u>Chang-Hee Han</u>, Yong-Wook Kim, Do Yeon Kim, Seung Hyun Kim, Zoran Nenadic, and Chang-Hwan Im, "Electroencephalography-Based Endogenous Brain-Computer Interface for Online Communication with a Completely Locked-in Patient", *Journal of NeuroEngineering and Rehabilitation (eISSN: 1743-0003)*, vol. 16, Art.No. 18, 30 January 2019 (**IF: 3.519;** Q1, Rank = 5/68 in Rehabilitation, Top 7%)

- 13, Soo-In Choi, <u>Chang-Hee Han</u>, Ga-Young Choi, Jaeyoung Shin, Kwang Soup Song, Chang-Hwan Im, and Han-Jeong Hwang, "On the Feasibility of Using an Ear-EEG to Develop an Endogenous Brain-Computer Interface", *Sensors (eISSN: 1424-8220)*, vol. 18(9), Art.No. 2856, 29 August 2018 (**IF: 3.275;** Q1, Rank = 15/64 in Instruments & Instrumentation)
- 12, Do Yeon Kim, <u>Chang-Hee Han</u>, and Chang-Hwan Im, "Development of an Electrooculogram-Based Human Computer Interface Using Involuntary Eye Movement by Spatially Rotating Sound for Communication of Locked-in Patients", *Scientific Reports (ISSN: 2045-2322)*, vol. 8, Art.No. 9505, 22 June 2018 (**IF: 3.998;** Q1, Rank = 17/71 in Multidisciplinary Sciences)
- 11. <u>Chang-Hee Han</u>, Han-Jeong Hwang, Jeong-Hwan Lim, and Chang-Hwan Im, "Assessment of User Voluntary Engagement during Neurorehabilitation Using Functional Near-Infrared Spectroscopy: A Preliminary Study", *Journal of NeuroEngineering and Rehabilitation (eISSN: 1743-0003)*, vol. 15, Art.No. 27, 23 March 2018 (**IF: 3.519;** Q1, Rank = 5/68 in Rehabilitation, Top 7%)
- 10. <u>Chang-Hee Han</u>, Jun-Hak Lee, Jeong-Hwan Lim, Yong-Wook Kim, and Chang-Hwan Im, "Global Electroencephalography Synchronization as a New Indicator for Tracking Emotional Changes of a Group of Individuals during Video Watching", *Frontiers in Human Neuroscience (ISSN: 1662-5161)*, vol. 11, Art.No. 577, 01 December 2017 (**IF: 2.673;** Q2, Rank = 24/78 in Psychology)
- 9. Jeong-Hwan Lim, Yong-Wook Kim, Jun-Hak Lee, Kwang-Ok An, Ho-Seung Cha, <u>Chang-Hee Han</u>, and Chang-Hwan Im, "An Emergency Call System for Patients in Locked-in State Using an SSVEP-Based Brain Switch", *Psychophysiology (ISSN: 0048-5772)*, vol. 54, pp. 1632-1643, 11 July 2017 (**IF: 3.692;** Q1, Rank = 11/78 in Psychology)
- 8. Han-Jeong Hwang, <u>Chang-Hee Han</u>, Jeong-Hwan Lim, Yong-Wook Kim, Soo-In Choi, Kwang-Ok An, Jun-Hak Lee, Ho-Seung Cha, Seung Hyun Kim, and Chang-Hwan Im, "Clinical Feasibility of Brain-Computer Interface Based on Steady-State Visual Evoked Potential in Patients with Locked-in Syndrome: Case Studies", *Psychophysiology (ISSN: 0048-5772)*, vol. 54, pp. 444-451, 03 December 2016 (**IF: 3.692;** Q1, Rank = 11/78 in Psychology)
- 7. <u>Chang-Hee Han</u>, Jung-Hwan Lim, Jun-Hak Lee, Kangsan Kim, and Chang-Hwan Im, "Data-driven user feedback: An improved neurofeedback strategy considering the interindividual variability of EEG features", *BioMed Research International (ISSN: 2314-6133)*, vol. 2016, Art.No. 3939815, 18 Aug 2016 (**IF: 2.276**; Q3, Rank = 92/156 in Biotechnology & Applied Microbiology)
- 6. Jeong-Youn Kim, Kun-Il Kim, <u>Chang-Hee Han</u>, Jeong-Hwan Lim, and Chang-Hwan Im, "Estimating Consumer's Subjective Preference Using Functional Near-Infrared Spectroscopy: A Feasibility Study" *Journal of Near Infrared Spectroscopy (ISSN: 0967-0335)*, vol. 24, pp. 433-441, 6 Aug 2016 (**IF: 1.198;** Q3, Rank = 48/71 in Chemistry, Applied)
- 5. <u>Chang-Hee Han</u>, Hyuna Song, Yong-Guk Kang, Beop-Min Kim, and Chang-Hwan Im, "Hemodynamic Responses in Rat Brain during Transcranial Direct Current Stimulation: a Functional Near-Infrared Spectroscopy Study" *Biomedical Optics Express (ISSN: 2156-7085)*, vol. 5, no. 6, pp. 1812-1821, 13 May 2014 (IF: 3.921; Q1, Rank = 17/97 in Optics)

- 4. <u>Chang-Hee Han</u>, Han-Jeong Hwang, and Chang-Hwan Im, "Classification of Visual Stimuli with Different Spatial Patterns for Single Frequency, Multi-Class SSVEP BCI: A Preliminary Study" *Electronics Letters (ISSN: 0013-5194)*, vol. 49, Issue 22, pp. 1374-1376, 24 October 2013 (**IF: 1.316;** Q3, Rank = 199/266 in Engineering, Electrical & Electronic)
- 3. Han-Jeong Hwang, Dong Hwan Kim, <u>Chang-Hee Han</u>, and Chang-Hwan Im, "A New Dual-Frequency Stimulation Method to Increase the Number of Visual Stimuli for Multi-Class SSVEP-Based Brain-Computer Interface (BCI)" *Brain Research (ISSN: 0006-8993)*, vol. 1515, pp. 66-77, 17 June 2013 (IF: 2.733; Q3, Rank = 157/272 in Neuroscience)
- 2. Jeong-Hwan Lim, Han-Jeong Hwang, <u>Chang-Hee Han</u>, and Chang-Hwan Im, "Classification of Binary Intentions for Individuals with Impaired Oculomotor Function: "Eyes-closed" SSVEP-Based Brain-Computer Interface (BCI)" *Journal of Neural Engineering (ISSN: 1741-2560)*, vol. 10, Art.No. 026021, 26 March 2013 (**IF: 4.141;** Q1, Rank = 16/87 in Engineering, Biomedical)
- 1. Dong-Hyun Baek, <u>Chang-Hee Han</u>, Ha-Chul Jung, Seon Min Kim, Chang-Hwan Im, Hyun-Jik Oh, James Jungho Pak, and Sang-Hoon Lee, "Soldering-Based Easy Packaging of Thin Polyimide Multichannel Electrodes for Neuro Signal Recording," *Journal of Micromechanics and Microengineering (ISSN: 0960-1317)*, vol. 22(11), Art.No. 115017, 26 September 2012 (**IF: 1.739;** Q3, Rank = 33/64 in Instruments & Instrumentation)

INTERNATIONAL CONFERENCE PROCEEDING PAPERS

International Conference Proceeding Papers

- 19. Ga-Young Choi, <u>Chang-Hee Han</u>, Hyunmi Lim, Jeonghun Ku, Won Seok Kim, and Han-Jeong Hwang, "Electroencephalography-Based Motor Hotspot Detection", The 13th International Conference on Bio-Inspired Systems and Signal Processing, February 24-26, 2020
- 18. <u>Chang-Hee Han</u> and Han-Jeong Hwang, "Onset Detection of a Hybrid EEG-NIRS Brain-Computer Interface", The 41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, July 23-27, 2019
- 17. <u>Chang-Hee Han</u>, Jinuk Kwon, Han-Jeong Hwang, and Chang-Hwan Im, "Classification of Functional Near-Infrared Spectroscopy Signals during Passive and Combinatory Exercises for Neurorehabilitation", The 7th International Winter Conference on Brain-Computer Interface (BCI), February 18-20, 2019
- 16. <u>Chang-Hee Han</u>, and Chang-Hwan Im, "EEG-based Brain-Computer Interface for Real-Time Communication of Patients in Completely Locked-in State", The 6th International Conference on Brain-Computer Interface, January 11-15, 2018
- 15. <u>Chang-Hee Han</u>, Yong-Wook Kim, Do Yeon Kim, and Chang-Hwan Im, "EEG-Based Brain-Computer Interface for Real-Time Binary Communication of Patients in Completely Locked-in State", The 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, July 11-15, 2017

- 14. Do-Yeon Kim, <u>Chang-Hee Han</u>, and Chang-Hwan Im, "A Novel EOG-Based Binary Communication Paradigm using Sound Rotation for Patients with Locked-in Syndrome", The 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 25-29, 2016
- 13. Seonghun Park, Do-Won Kim, <u>Chang-Hee Han</u>, and Chang-Hwan Im, "A Method for Estimating Emotional Arousal Changes of a Group of Individuals during Movie Screening Using SSVEP", The 6th International Brain-Computer Interface Meeting, May 30 June 3, 2016
- 12. <u>Chang-Hee Han</u>, Jun-Hak Lee, Jeong-Hwan Lim, and Chang-Hwan Im, "Extracting Emotional Highlights from Video Clips by Tracking Global Electroencephalography Synchronization", The 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 25-29, 2016
- 11. <u>Chang-Hee Han</u>, Jeong-Hwan Lim, Jun-Hak Lee and Chang-Hwan Im, "Individualization Strategy for EEG-based Passive Brain-Computer Interfaces Considering Test-Retest Reliability of EEG Features", International Biomedical Engineering Conference 2015, November 12-14, 2015
- 10. Jeong-Hwan Lim, Yong-Wook Kim, <u>Chang-Hee Han</u>, Ho-Seung Cha, and Chang-Hwan Im, "An Emergency Call System for Patients with Severe ALS Using Less-Stimulating SSVEP-Based Brain Switch", The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 25-29, 2015
- 9. Yong-Wook Kim, Jeong-Hwan Lim, <u>Chang-Hee Han</u>, and Chang-Hwan Im, "Towards BCI-Controlled Augmented Reality: Integration of Computer Vision with BCI for Hands-Free Communication and Control", The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 25-29, 2015
- 8. <u>Chang-Hee Han</u>, Han-Jeong Hwang, Jeong-Hwan Lim, and Chang-Hwan Im, "Assessment of Users' Cognitive Engagement during Passive and Active Exercises for Neurorehabilitation Using NIRS", The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 25-29, 2015
- 7. Jeong-Youn Kim, <u>Chang-Hee Han</u>, Jeong-Hwan Lim, and Chang-Hwan Im, "Estimation of Consumer's Subjective Preference Using fNIRS", International Biomedical Engineering Conference 2014, November 20-22, 2014
- 6. Jun-Hak Lee, Jeong-Hwan Lim, <u>Chang-Hee Han</u>, Yong-Wook Kim, and Chang-Hwan Im, "Global EEG Synchronization as an Indicator of Emotional Arousal and Its Application for Tracking Emotional Changes during Video Watching", The 6th International Brain-Computer Interface Conference, September 16-19, 2014 (<u>oral presentation</u>)
- 5. <u>Chang-Hee Han</u>, Han-Jeong Hwang, Jeong-Hwan Lim, and Chang-Hwan Im, "Single-Trial Classification and Evaluation of Hemodynamic Responses during Passive and Active Exercises for Neurorehabilitation", The 6th International Brain-Computer Interface Conference, September 16-19, 2014 (<u>oral presentation</u>)

- 4. <u>Chang-Hee Han</u> and Chang-Hwan Im, "Development of an Data-Driven User Feedback: An Improved Neurofeedback Strategy Considering Individual Variability of EEG Features", The 18th IEEE International Symposium on Consumer Electronics, June 22-25, 2014
- 3. Jeong-Youn Kim, <u>Chang-Hee Han</u>, Jeong-Hwan Lim, and Chang-Hwan Im, "Estimation of consumer's Subjective Preference from NIRS Signals: a Preliminary Investigation", Organization of Human Brain Mapping, June 08-12, 2014
- 2. <u>Chang-Hee Han</u>, Han-Jeong Hwang, Jeong-Hwan Lim, and Chang-Hwan Im, "Development of an "Eyes-Closed" Brain-Computer Interface System for Communication of Patients with Oculomotor Impairment", The 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, July 03-07, 2013
- 1. <u>Chang-Hee Han</u>, Han-Jeong Hwang, and Chang-Hwan Im, "Modified Pattern-Reversal Visual Checkerboard stimuli with Dual Alternating Frequencies for Multi-Class SSVEP-based Brain-Computer Interfaces", 2013 IEEE International Winter Workshop on Brain-Computer Interface, February 18-20, 2013

DOMESTIC CONFERENCE PROCEEDING PAPERS

Domestic Conference Proceeding Papers

- 24. 박성훈, <u>한창희</u>, 임창환, "Design of Portable EEG Headsets Based on Database", IBEC 2016 추계학술 대회(International Biomedical Engineering Conference), 2016.11.12
- 23. 박성훈, 김도원, <u>한창희</u>, 임창환,"A Method for Estimating Emotional Arousal Changes of a Group of Individuals during Movie Screening using SSVEP", 2016년 대한뇌기능매핑학회 추계 학술대회, 2016.11.04
- 22. 박성훈, 김도원, <u>한창희</u>, 임창환,"정상상태시각유발전위를 이용한 영화 상영 중 집단의 감정 변화 추적 기술", 2016년 제51회 대한의용생체공학회 춘계학술대회, 2016.05.14
- 21. 김도연, <u>한창희</u>, 임창환,"회전 음원을 이용하는 안구전도 기반의 새로운 이진 의사소통 패러다임 ",2016년 제51회 대한의용생체공학회 춘계학술대회, 2016.05.14
- 20. 김도원, <u>한창희</u>, 심미선, 임창환, "Classification of Selective Attention to Spatially Separated Auditory Stimuli Using Near-Infrared Spectroscopy (NIRS)", 제7회 한국계산뇌과학회 정기학술대회, 2015.08.19
- 19. 임정환, 김용욱, 차호승, <u>한창희</u>, 임창환, "An Emergency Call System for Patients with Severe ALS Using Less-Stimulating SSVEP-Based Brain Switch",제7회 한국계산뇌과학회 정기학술대회, 2015.08.19

- 18. 김용욱, 임정환, <u>한창희</u>, 임창환, "SSVEP 기반 BCI를 이용한 증강현실 시스템에서의 타겟 선택 기술 ", 2015년 제50회 대한의용생체공학회 춘계학술대회, 2015.05.08-09
- 17. 임정환, 김용욱, 이준학, <u>한창희</u>, 차호승, 임창환, "색체 자극을 이용한 정상 상태 시각 유발 전위 기반의 저자극 뇌-스위치 시스템 개발", 2015년 제50회 대한의용생체공학회 춘계학술대회, 2015.05.08-09
- 16. 이준학, 임정환, <u>한창희</u>, 김용욱, 임창환, "Global EEG Synchronization as an Indicator of Emotional Arousal and Its Application for Tracking Emotional Changes during Video Watching", 대한뇌기능매핑학회추계학술대회, 2014.11.07
- 15. 김정연, <u>한창희</u>, 임정환, 임창환, "Estimation of Consumer's Subjective Preference Using fNIRS", 대한뇌 기능매핑학회 추계학술대회, 2014.11.07
- 14. 이준학, 임정환, <u>한창희</u>, 김용욱, 임창환, "미래병사체계 적용이 가능한 정상상태 시각 유발전위를 이용한 뇌-스위치 시스템 개발",제22회 지상무기학술대회, 2014.09.25
- 13. <u>한창희</u>, 임창환, "Data-Driven User Feedback : An Improved Neurofeedback Strategy Considering Individual Variability of EEG Feature", International Symposium on Consumer Electronics, 2014.06.22-25
- 12. 이준학, 임정환, <u>한창희</u>, 김용욱, 임창환, "전역 뇌파 동기화를 이용한 비디오 시청 시 감정 변화 추적 ", 대한의용생체공학회 춘계학술대회, 2014.05.09-10
- 11. 차호승, 임정환, 황한정, **한창희**, 임창환, "CTVEP를 이용한 뇌 스위치 시스템 개발", 대한의용생체공학회 춘계학술대회, 2014.05.09-10
- 10. <u>한창희</u>, 임창환, "데이터베이스 기반의 사용자 피드백: 뇌파 특징의 개인 편차를 고려한 향상된 뉴로 피드백 전략", 대한의용생체공학회 춘계학술대회, 2014.05.09-10
- 9. 차호승, 임정환, 황한정, <u>한창희</u>, 임창환, "일시적 시각유발전위에 기반한 뇌 스위치 시스템 구현", 제 49회 대한의용생체공학회 추계학술대회, 2013.11.08
- 8. 이준학, 임정환, 황한정, <u>한창희</u>, 임창환, "정상상태 시각 유발전위를 이용한 뇌-스위치 시스템 개발: 예비 연구", 제49회 대한의용생체공학회 추계학술대회, 2013.11.08

- 7. <u>한창희</u>, 황한정, 임창환, "수동 운동과 능동 운동(운동 심상) 동시 수행 시 혈류역학 반응 변화 비교 및 단독 시행 분류", 제49회 대한의용생체공학회 추계학술대회, 2013.11.08
- 6. <u>한창희</u>, 송현아, 강용국, 김법민, 임창환, "Changes of Hemodynamic Responses in Rat Brain during Transcranial Direct Current Stimulation: A Functional Near-Infrared Spectroscopy Study", 2013 대한뇌기능매 핑학회 추계학술대회, 2013.11.01
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