

COmputational NeuroEngineering (CoNE) Lab.

Dept. Biomed. Eng., Hanyang University



Computational NeuroEngineering Laboratory (CoNE)

Department of Biomedical Engineering, Hanyang University

한양대학교 전기생체공학부 생체공학전공
계산신경공학연구실

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Lab. Director

Chang-Hwan Im, Ph.D.

Associate Professor

Department of Biomedical Engineering, Hanyang University

Ph.D. course students

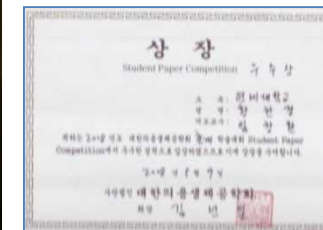
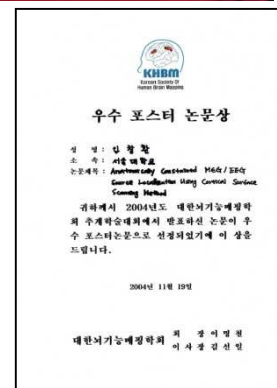
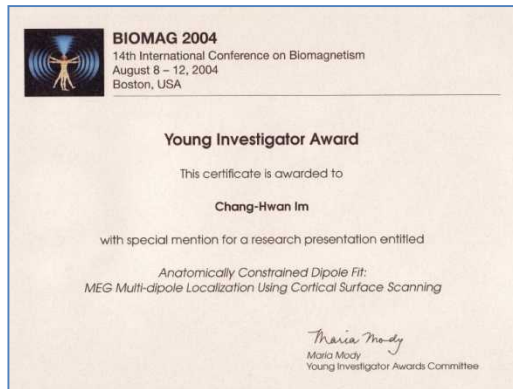
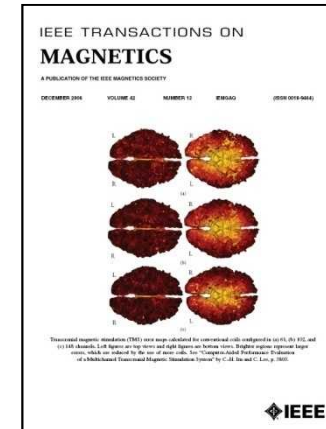
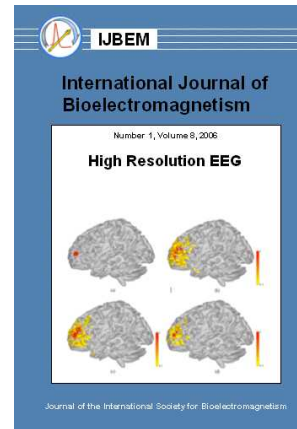


M.S. course students


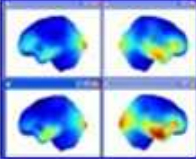
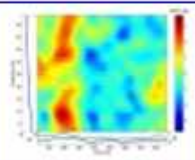
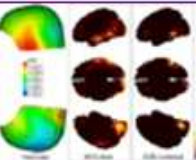

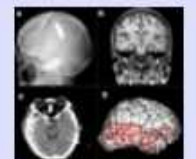

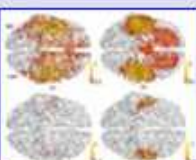


67 papers have been published in SCI(E) journals

- Journal of Neuroscience Methods
- Physics in Medicine and Biology
- Neuroscience Research
- Brain Research
- Human Brain Mapping
- Optics Express
- NeuroImage
- Schizophrenia Research



Research Interests

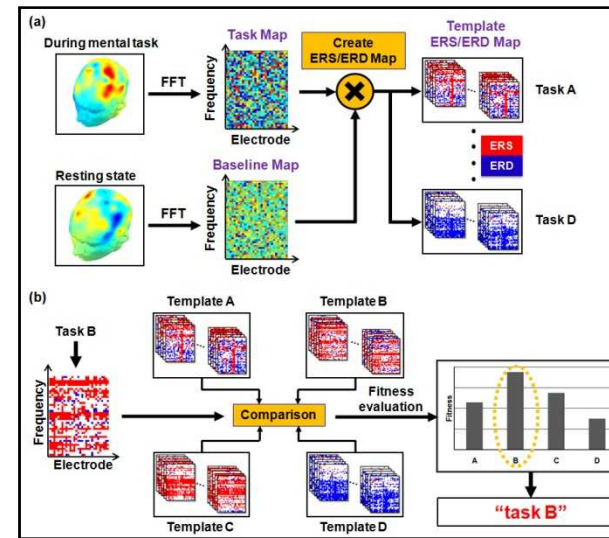
	<p><u>EEG-Based Brain Computer Interface (BCI) System</u></p> <p>뇌파 기반 뇌-컴퓨터 인터페이스 시스템</p>		<p><u>Real-time Brain Activation Monitoring & Imaging System</u></p> <p>실시간 뇌 활동 영상 시스템</p>
	<p><u>Diagnosis of Psychiatric Brain Diseases Based on Quantitative Analysis of EEG Data</u></p> <p>신경정신질환의 비침습적 진단 기술</p>		<p><u>Multimodal Neuroimaging integrating fMRI and EEG/MEG</u></p> <p>다중모달 신경영상</p>
	<p><u>Human Brain Mapping: Connectivity and Causality</u></p> <p>뇌 기능 매핑: 기능적 연결성</p>		<p><u>Precise Noninvasive Localization of Epileptogenic Foci</u></p> <p>간질 신호원의 정확한 국지화 기술</p>
	<p><u>Transcranial Electromagnetic Stimulation (TMS/tDCS)</u></p> <p>경두개 전기자기 자극 시스템</p>		<p><u>Functional Electromagnetic Source Imaging</u></p> <p>기능적 전자기 신호원 영상</p>

Toward the World Best NeuroEngineering Laboratory!

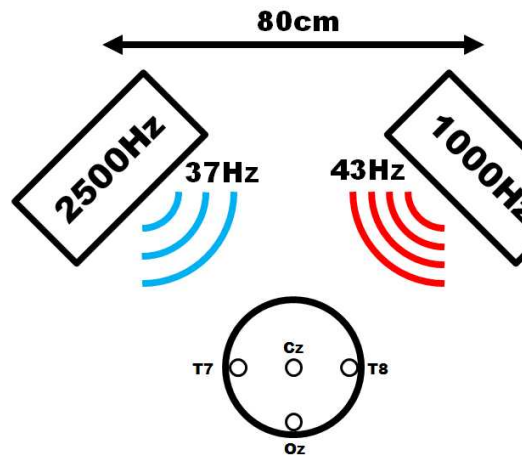
Brain-Computer Interface (BCI)



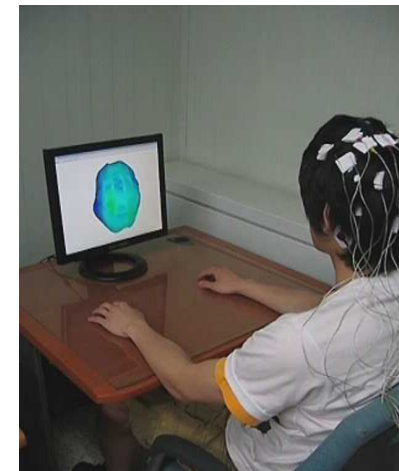
Control of a robotic arm (Hwang et al., 2011)



Mind Reading (Hwang et al., 2011)

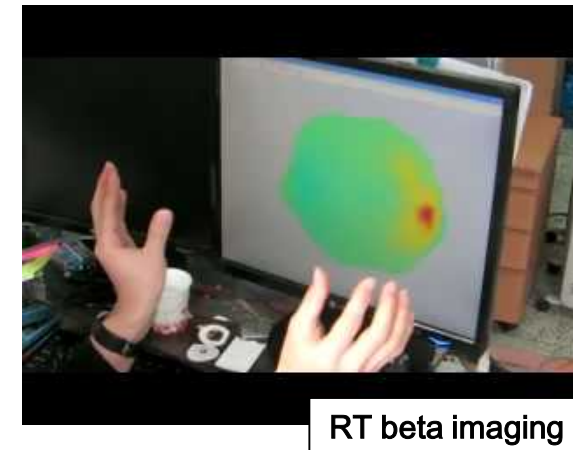
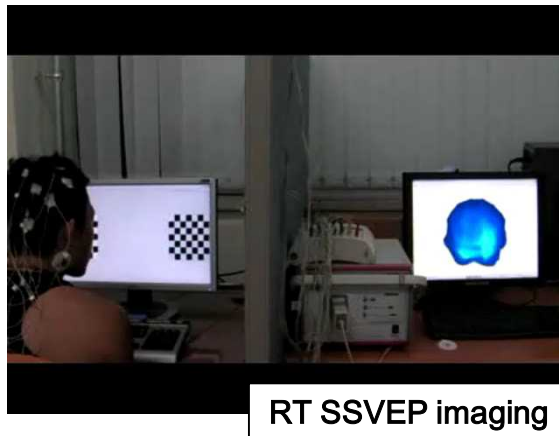
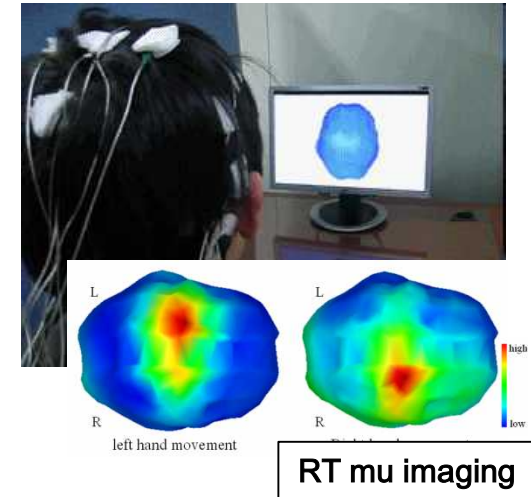
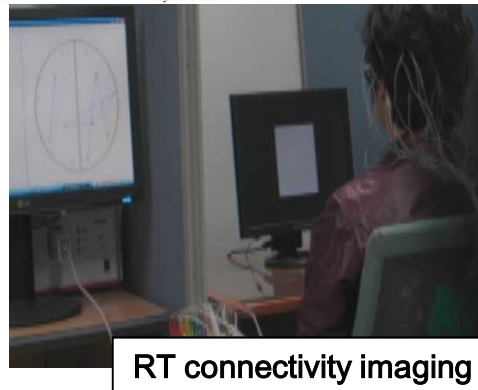
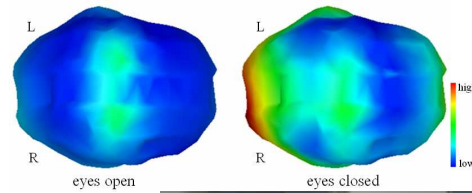


Auditory BCI (Kim et al., 2011)



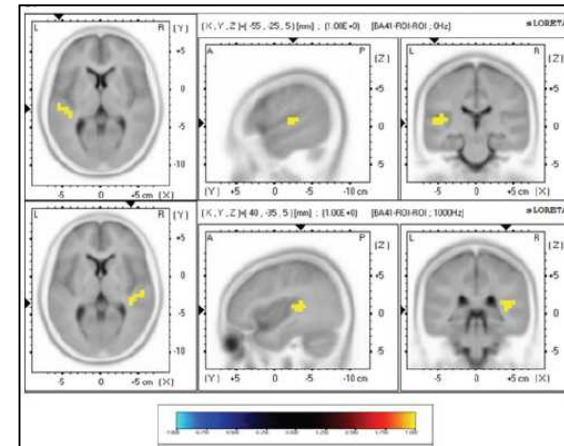
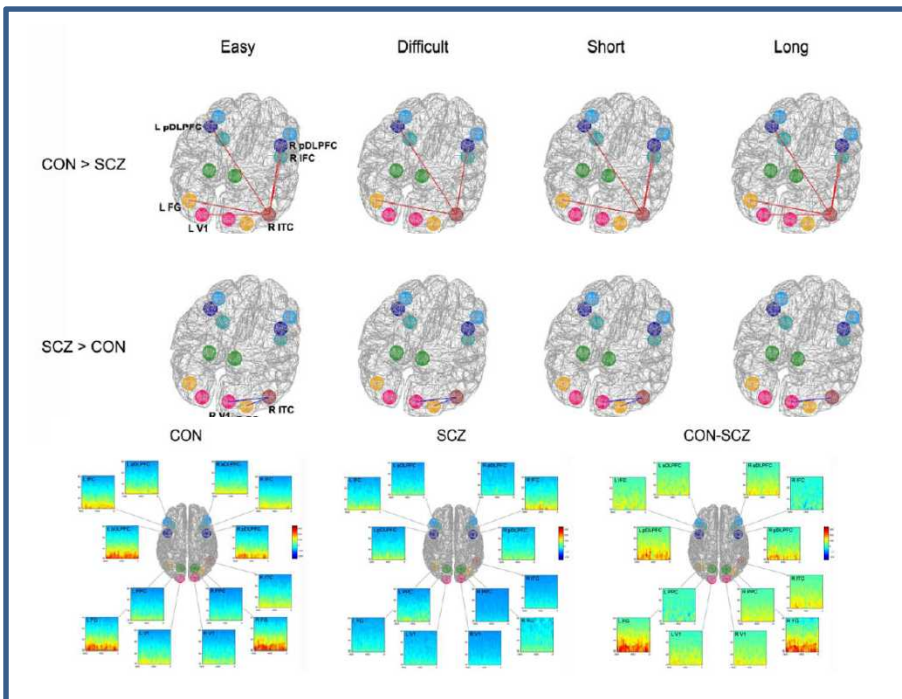
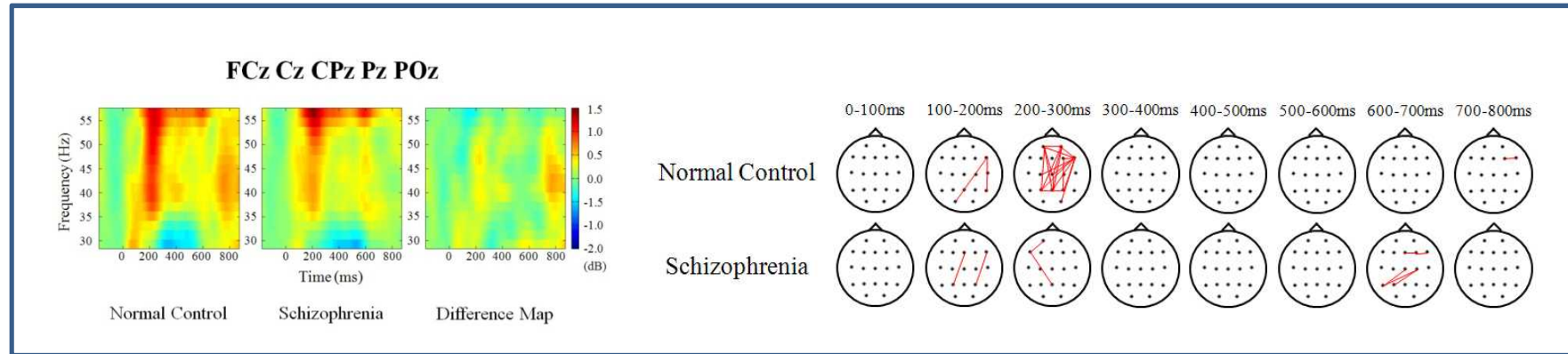
Motor imagery training (Hwang et al., 2009)

Real-time Dynamic Neuroimaging



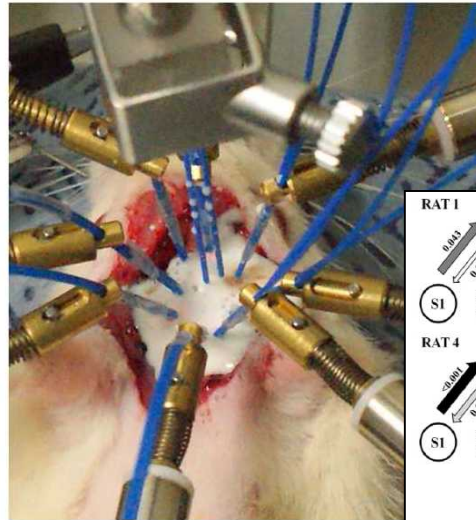
Results have been published in *Physiol. Meas.* (2007), *J. Neurosci. Meth.* (2009), *Med. Biol. Eng. Compt.* (2011), and *Arch. Phys. Med. Rehab.* (2011)

Noninvasive Diagnosis of Neuropsychiatric Diseases

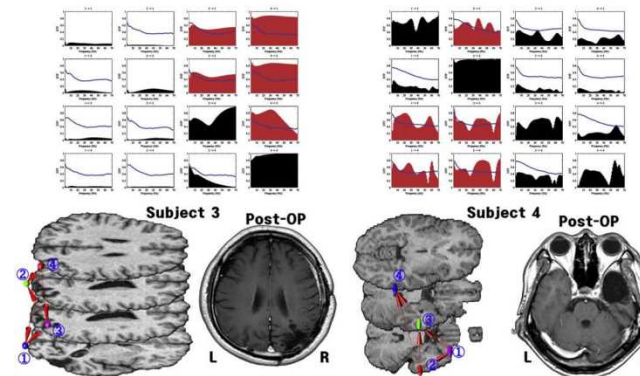
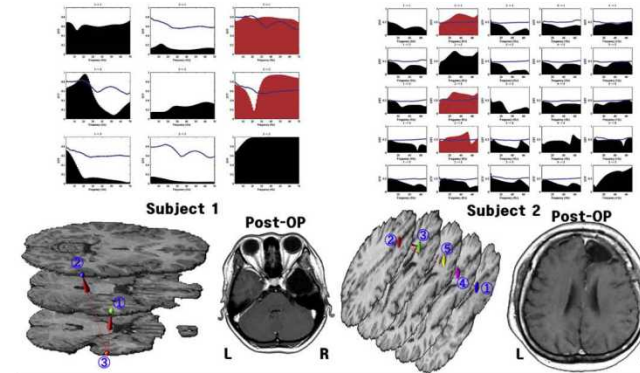
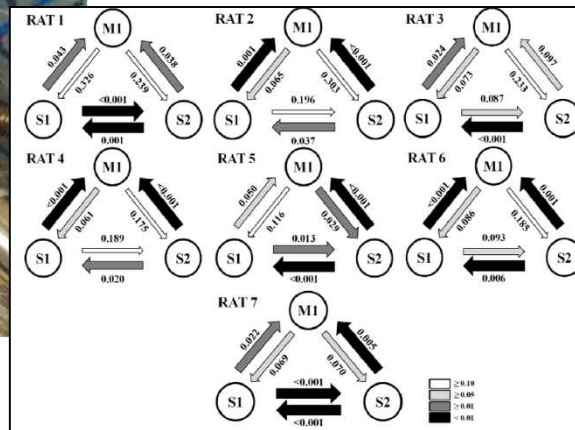


Noninvasive diagnosis of various neuropsychiatric diseases such as schizophrenia, Alzheimer's disease, Post-traumatic stress disorder, anxiety disorder, etc.

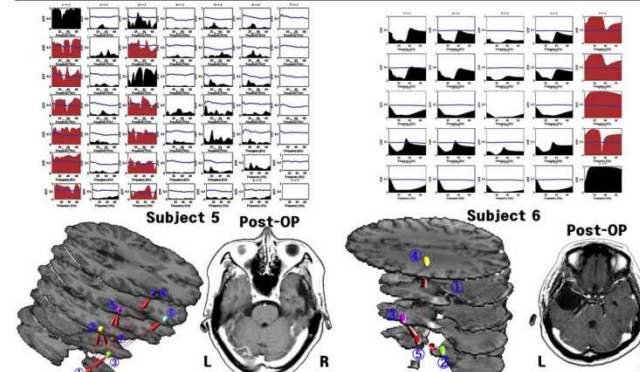
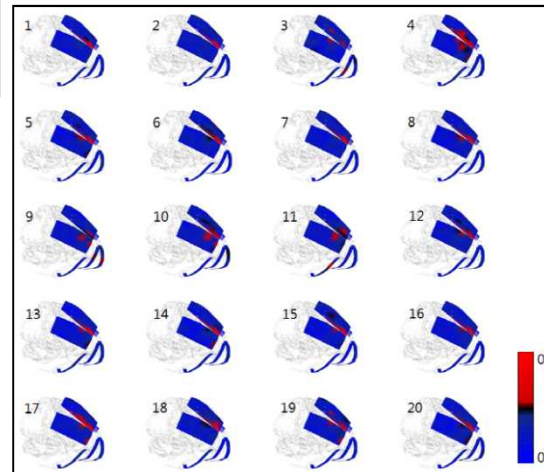
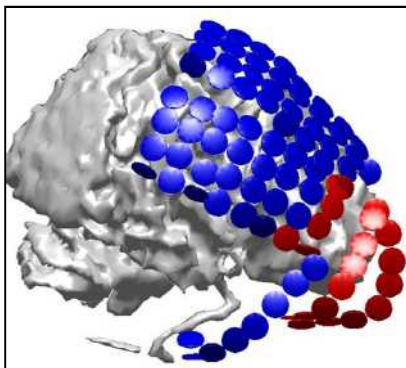
Functional Brain Mapping – Causality Analysis



Causality analysis using NIRS
(Im et al., Opt. Express, 2010)

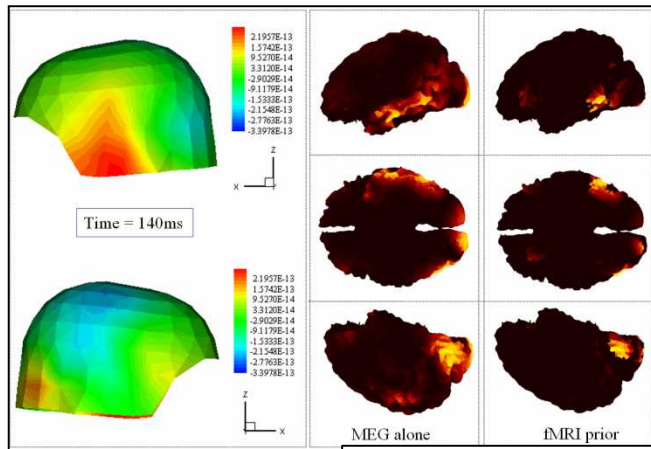


Localization of epileptogenic zone in LGS patients
(Jung et al., Seizure, 2011)

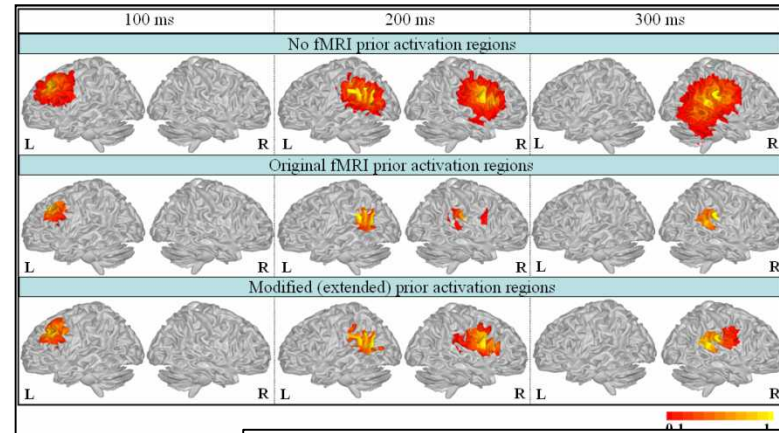


Localization of ictal epileptogenic zones
(Kim et al., Neuroimage, 2010)

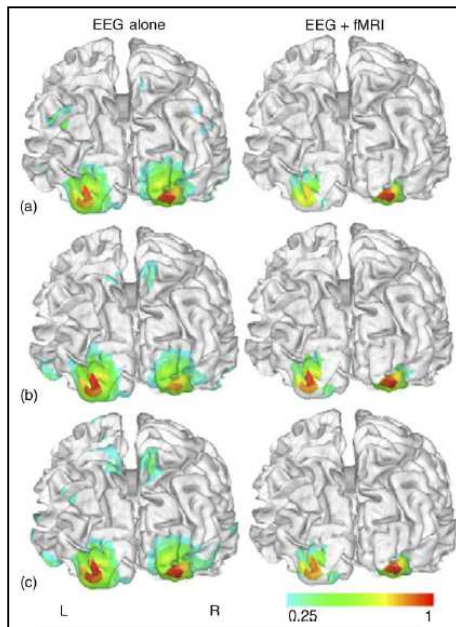
Multimodal Neuroimaging



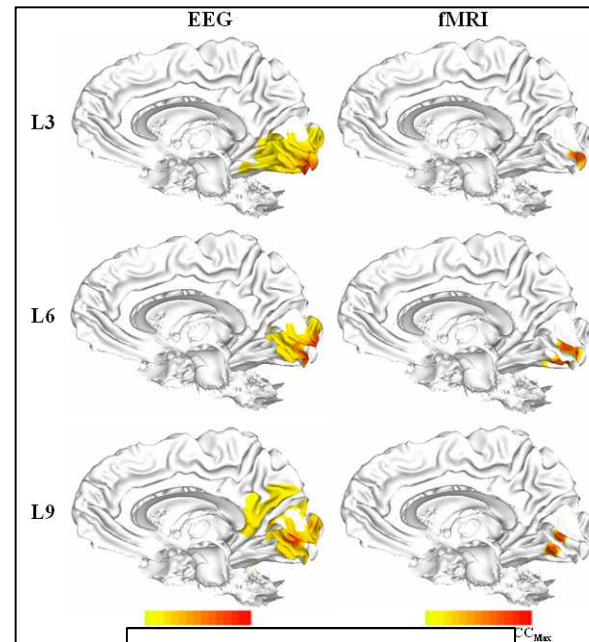
Hum. Brain Mapp. 2005



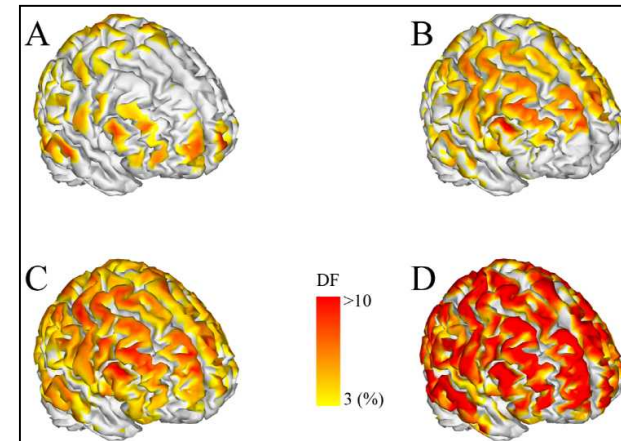
Phys. Med. Biol., 2006; MBEC, 2007



J. Neurosci. Meth., 2006

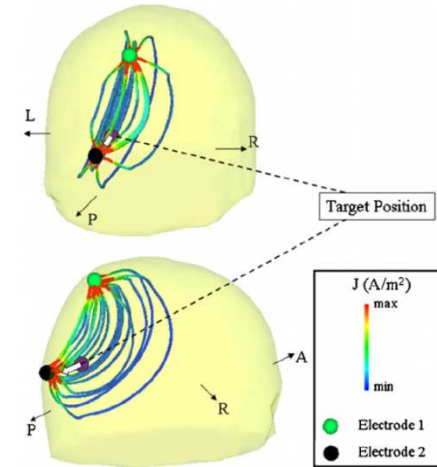
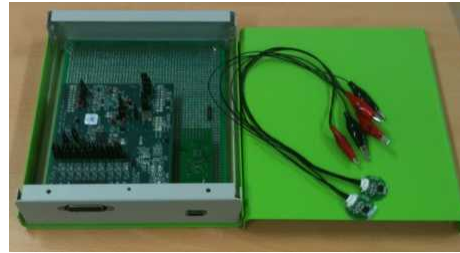


J. Neurosci. Meth., 2007

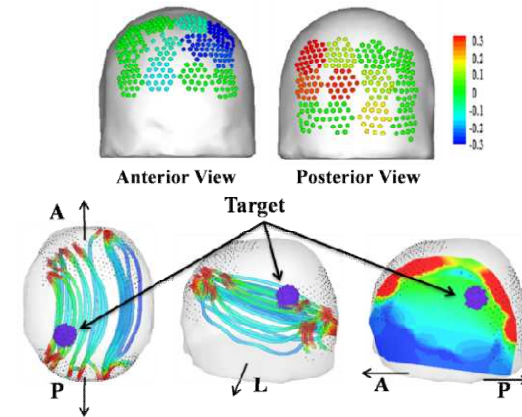
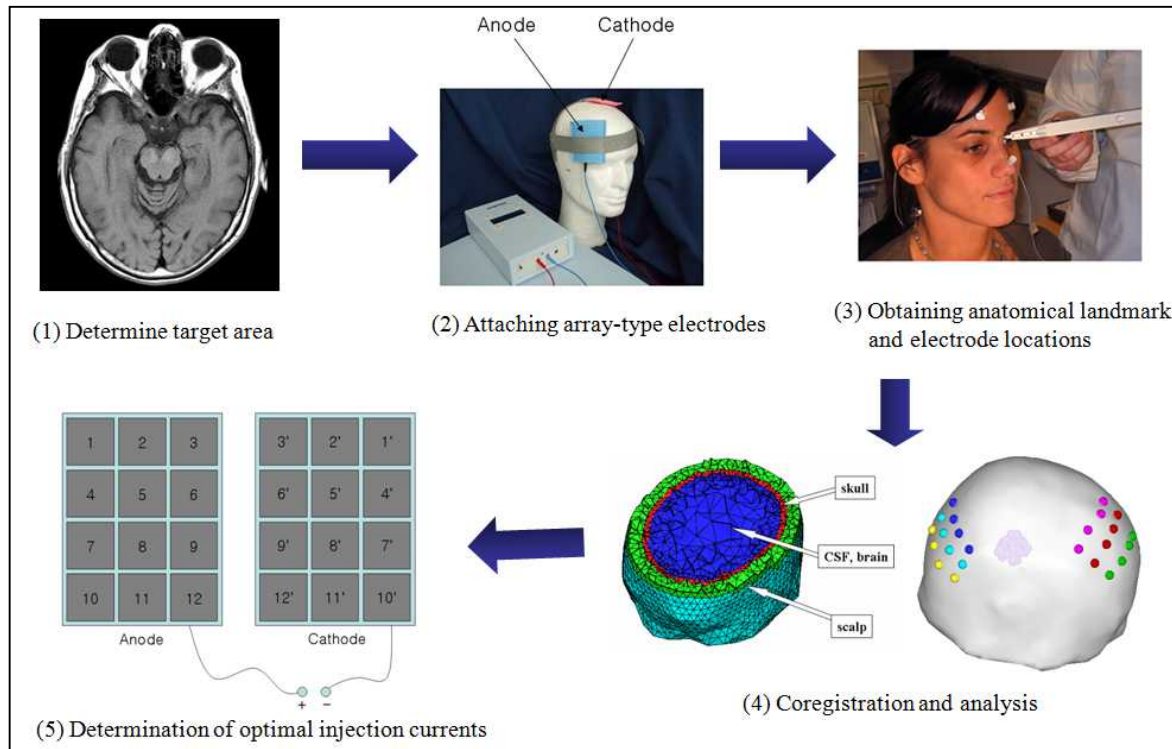


Simultaneous EEG+MEG submitted

Noninvasive Brain Stimulation



(Im et al., Phys. Med. Biol., 2007)



(Park et al., IEEE, in press)

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Dept. Biomed. Eng., Hanyang University




since 2006



한양대학교 계산신경공학연구실은 2011년 한양대학교 전기생체공학부 생체공학전공에 설립되었으며 <뇌-컴퓨터 인터페이스 기술 개발>, <간질, 치매, 정신분열증 등 뇌신경정신 질환의 비침습적 조기 진단 기술 개발>, <신경 재활을 위한 비침습적 뇌 자극 기술 개발>, <뇌파, 뇌자도 신호원 영상 기반 뇌의 기능적 기전 규명> 등의 **신경공학 분야 첨단 연구 주제에 대해 활발한 연구**를 수행하고 있습니다. 본 연구실은 현재, 서울대병원, 세브란스병원, 고려대병원, 인제백병원, 삼성서울병원, 한림성심병원 등 국내 우수 병원의 신경과, 정신과, 재활의학과와 공동연구를 수행하고 있으며 미국 미네소타주립대, 오를라호마주립대, 일본 미화학연구소, 통신기술연구소 등과도 국제협력연구를 수행하고 있습니다.

Further Information on CoNE @ HYU

 영문 홈페이지	 랩 소식	 Lab Archives	 Lab Products
 연락 정보	 찾아오시는 법	 Job Posting	 같이 게시판

CoNE - IntraNet

 Members Only	 사진 갤러리
 Lab 웹하드	 Lab FTP

061763_visits since 05-19-2007
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의생명공학전대학원 생체의공학과



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