

2016 4th International Winter Conference on Brain-Computer Interface (BCI 2016)

**Gangwon Province, South Korea
22-24 February 2016**



**IEEE Catalog Number: CFP16BCI-POD
ISBN: 978-1-4673-7843-7**

**Copyright © 2016 by the Institute of Electrical and Electronic Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP16BCI-POD
ISBN (Print-On-Demand):	978-4673-7843-7
ISBN (Online):	978-4673-7842-0

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Oral Session

1	Domain Knowledge and Feature Representation Mark S. Cohen	1
2	Investigating Colour's Effect in Stimulating Brain Oscillations for BCI Systems Artur Szalowski, Dorel Picovici	4
3	Brain-Controlled Devices: The Perception-Action Closed Loop José del. R. Millán	8
4	Review on Multi-Wavelength Quantitative Phase Microscopy Behnam Tayebi, Ji-hyun Kim, Jae-Ho Han	10
5	Machine Learning for BCI: Towards Analysing Cognition Klaus-Robert Müller	12
6	BCI Classification based on Signal Plots and SIFT Descriptors Rodrigo Ramele, Julia Villar, Juan Miguel Santos	14
7	ERS Differences between Stroke Patients and Healthy Controls after Hand Movement Suji Kim, Jonghwan Lee, Laehyun Kim	18
8	Learning a New Sense by Sensory Augmentation Peter König, Sabine U. König	21
9	Hand Motion Reconstruction using EEG and EMG Jacobo Fernández-Vargas, Tapio Veli Juhani Tarvainen, Kahori Kita, Wenwei Yu	24
10	Common Neural Mechanism for Reaching Movements Hong Gi Yeom, June Sic Kim, Chun Kee Chung	28
11	Development of an Open Source Platform for Brain-Machine Interface: OpenBMI Min-Ho Lee, Siamac Fazli, Keun-Tae Kim, Seong-Whan Lee	31
12	Motor Imagery Detection with Wavelet Analysis for NIRS-based BCI Bonkon Koo, Hanh Vu, Hwan-gon Lee, Hyung-cheul Shin, Seungjin Choi	33

13	High Performance with Tactile P300 BCIs	37
	Andreas Herweg, Andrea Kübler	
14	P300-BCI-Based Authentication System	39
	Moonwon Yu, Netiwit Kaongoen, Sungho Jo	
15	Decoding Details of Human Function using Electrocorticography	43
	Gerwin Schalk	
16	Finger Flexion Imagery: EEG Classification through Physiologically-Inspired Feature Extraction and Hierarchical Voting	45
	Daniel Furman, Roi Reichart, Hillel Pratt	
17	Interfacing Brain and Computer in Neurorehabilitation	49
	Donatella Mattia, Laura Astolfi, Jlenia Toppi, Manuela Petti, Floriana Pichiorri, Febo Cincotti	
18	Adaptation in Motor Imagery Brain-Computer Interfaces and Its Implication in Rehabilitation	51
	Cuntai Guan	
19	Dimensionality Reduction with Isomap Algorithm for EEG Covariance Matrices	53
	Egor Krivov, Mikhail Belyaev	
20	An Empirical Suggestion for Collaborative Learning in Motor Imagery-based BCIs	57
	Eun Song Kang, Bum-Chae Kim, Heung-Il Suk	

Poster Session

- 1 **Space-Time Portraits of Brain Dynamics** 60
Sang Wan Lee
- 2 **Movement Intention Decoding based on Deep Learning for Multiuser Myoelectric Interfaces** 63
Ki-Hee Park, Seong-Whan Lee
- 3 **EEG-based Decoding of Declarative Memory Formation** 65
Taeho Kang, Yiyu Chen, Doyeon Kim, Siamac Fazli
- 4 **BCI based Hybrid Interface for 3D Object Control in Virtual Reality** 68
Jinsung Chun, Byeonguk Bae, Sungho Jo
- 5 **Deep Feature Learning for Pulmonary Nodule Classification in a Lung CT** 72
Bum-chae Kim, Yu Sub Sung, Heung-Il Suk
- 6 **Design of an Asynchronous Brain-Computer Interface for Control of a Virtual Avatar** 75
Hye-Soo An, Jeong-Woo Kim, Seong-Whan Lee
- 7 **Neurodrawing: Neurofeedback for Enhancing Attention by Drawing** 77
Jae-Hee Moon, Ki-Hee Park, Seong-Whan Lee
- 8 **A Study on Automated Segmentation of Retinal Layers in Optical Coherence Tomography Images** 79
Lua Ngo, Geown Yih, Seungbae Ji, Jae-Ho Han
- 9 **Steady-State Visual Evoked Potential based Brain-Computer Interface with Viewing Distance Changes** 81
Heejin Park, Keun-Tae Kim, Seong-Whan Lee