College of Engineering

Department of Biomedical Sciences

Seminar

Brain Plasticity in Macroscale

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Date: 28 May 2019 (Tuesday)
Time: 12:00 nn – 1:30 pm (Reception with light sandwiches at 11:55am, talks start at 12nn. To facilitate the order of sandwiches, please register through email chchung33@cityu.edu.hk.)
Venue: B6605, Yeung Kin Man Acad. Bldg., City University of Hong Kong

Abstract

The shaping and responsiveness of brain map, an indicative of cognitive status, is drastically influenced by experience. The mapping tools such as penetrating electrodes and brain imaging techniques have limitation to clinical use largely due to pervasiveness and undesirable spatiotemporal resolution, respectively. Here, graphene-based surface electrodes that we have recently developed are integrated into an electrocorticography (ECoG) array, therein having a large scale, real-time, and biocompatible recording/stimulation with desirable resolution. This system enables us to construct brain mapping. Furthermore, a long-term sensory enhancement is observed when cortical surface is stimulated in a large scale. This result demonstrates activity-dependent plasticity of brain map by electrical rehabilitation. We propose that this technology heralds a new generation of brain-machine interfaces for investigating brain map plasticity and map-related diseases.

About the speaker

Dr Sungchil Yang achieved PhD in the department of molecular and integrative physiology, University of Illinois at Urbana & Champaign. His research interest is on brain mapping, synapatic plasticity, perceptual learning, and psychiatry disorders.

Besides research presentation, there will be discussions on research collaborations for major grants.

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