QBiC
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QBiC SEMINAR

Speaker

Andreas Hierlemann, Ph.D.

ETH Zurich, Department of Biosystems Science and Engineering

Date & Location

Thursday, October 22, 2015
14:00 - 15:00

CDB Building A7F N701-703
(2-2-3 Minatojima-minamimachi, Chuo-ku, Kobe)
*There will be a video broadcast in RIKEN Osaka 1F lounge

Title

Highly integrated CMOS microsystems to interface with neurons at subcellular resolution

Abstract

To understand, how functions and characteristics of neuronal networks arise from the concerted interactions of the involved neurons, it is necessary to have methods that allow for interacting with neuronal functional subunits and ensembles - somas, axons, dendrites, single neurons, and entire networks - at high spatiotemporal resolution and in real time. It will be demonstrated how CMOS high-density microelectrode array systems, featuring several thousands of electrodes at densities of more than 3'000 electrodes per mm^2, can be used to record from or stimulate potentially any individual neuron or subcellular compartment on the CMOS chip.

Host

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