

## Abstract of Presentation

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<b>Research interest:</b> Visual information processing Cortical neural circuitry Multiple single unite recording	
<b>Abstract :</b> <p>Recent advances in neurophysiological recording techniques allow one can record up to 100 or more neurons simultaneously. One of such techniques is multiprobe multiple single-unit recording techniques. Simultaneously recorded action potential or spike trains included rich information about functional neuronal circuitry, information representation and information processing in the brain. With a multiprobe multiple single-unit recording technique, we have investigated local functional neuronal circuitry and representation of visual object information in the inferior temporal (IT) cortex of monkeys. The technique has several other advantages over the conventional single-unit recoding. For example, the sampling of neurons with multiprobe multiple single-unit recordings is rather unbiased. So, we were able to record activities from neurons with highly selective stimulus preferences and with very low average firing rates. If we switch the filters of amplifiers to wide-band mode, we can simultaneously record, low-frequency local filed potentials as well as high-frequency spiking activities from multiple neurons. With the wide band recording, we analyzed input-output transformation performed in the IT cortex.</p> <p>Although the multiprobe multiple single-unit recording technique has several advantages over the conventional single-unit recoding, it causes problems, which was not obvious in the conventional techniques. I would like to emphasize that intimate collaborations between biological neuroscientist and computational neuroscientist facilitate investigations of neuronal circuitry and information processing in the brain.</p>	