PLEXON®

Neurotechnology Research Systems

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NEW V-PROBE, CINEPLEX® 3.4 RELEASE AND WORKSHOP SPEAKERS ANNOUNCED

ANNOUNCING THE NEW V-PROBE

Plexon is pleased to announce the new V-Probe multi-site, linear array! The V-Probe takes the best of the very popular U-Probe to the next level. As you have come to expect, it is exceptionally durable, highly customizable, and often used in acute research with medium to large animals. Uniquely, the probe shaft has been redesigned to further minimize trauma to the brain tissue upon insertion through the implementation of a conical-shaped tip.

The V-Probe is available in 8, 16, 24 and 32 channel configurations, in lengths up to 150mm, and with a choice of 15, 20, 25 or 40µm diameter recording sites. You also have the flexibility of integrating a fluid channel or an optic fiber at various locations.

V-Probes are compatible with Plexon's PlexDrive™ Microdrive for advancing a single or multiple probes if ordered accordingly. Contact info@plexon.com for more information.

CINEPLEX® 3.4 NOW RELEASED

Great news for CinePlex® Behavioral Research System users – the newest software release is now available! CinePlex Studio now permits recording from the ATV Pike 100c camera with 960 x 960 resolution at up to 60 frames per second, and CinePlex Editor now accommodates those files.

•• CinePlex Tracking has been significantly enhanced via advanced color marker tracking algorithms for greater tracking accuracy, and advanced detail filtering for whole body tracking.

•• In CinePlex Basic Behavior, a) thresholds for events are now in frames instead of milliseconds for more specificity, b) researchers now have the ability to change dwell time thresholds for events while recording, and c) the angle can be computed between any two custom vectors for angle-based events.

•• CinePlex 3D now accommodates LED tracking and expands the possible camera positions to include recording from beneath the experimental area or from the sides.

The new release installation files are available online.

SPEAKERS FOR THE ANNUAL WORKSHOP ANNOUNCED

April 29 - May 2, 2013; Dallas, Texas, USA.

Plexon is thrilled to announce many of the guest speakers for the 4th Annual Plexon Neurophysiology Workshop as follows with more to come:

•• **Douglas Weber** – Rehab Neural Engineering Lab, Department of Physical Medicine & Rehabilitation at the University of Pittsburgh; Keynote Speaker

•• **Cyril Herry** – Mangendie Neurocenter, Pathophysiology of Neural Plasticity Department at the Université Bordeaux Segalen; PlexBright™ Optogenetic Stimulation System workshop

•• **Matthew Bauman** – Rehab Neural Engineering Lab, Department of Physical Medicine & Rehabilitation at the University of Pittsburgh; OmniPlex® Neural Data Acquisition System workshop

•• **Sanjay Anand** – Regenerative Neurobiology Lab, Department of Bioengineering at the University of Texas at Arlington; CinePlex Behavioral Research System workshop

••**Luca Bonini** – Brain Center for Social and Motor Cognition, Istituto Italiano di Tecnologia (IIT); U-Probe workshop

Details and Registration Form are now posted online. To ensure an extensive, hands-on experience, registration is limited to 40 people with several seats set aside for MAP System users. The workshop is already **30% SOLD OUT in the first 3 weeks** of open registration, so do not wait to register!

We looking forward to seeing you there!

PLEXON FEATURED IN *NEUROTECH BUSINESS REPORT* - FEB 2013

Check out this month's issue of *Neurotech Business Report*. Plexon and our 30th Anniversary are the subjects of the vendor profile – with a full page spread. For the record, bear in mind that we were not asked to proof read for accuracy and the authors might have taken some artistic license.

WIN A *JOVE* PUBLICATION GRANT

Don't miss the deadline for Plexon's first *JoVE* Publication Grant contest on March 13, 2013. The contest is open to all research that utilized the OmniPlex System for data acquisition.

Who knows, maybe your research will entice more than 10,000 views in the first year like other *JoVE* publications referencing Plexon equipment! Send questions and entries to publications@plexon.com. Good luck!

OFFLINE SORTER™ PROMOTION

Get in on our 30th Anniversary specials for Offline Sorter™ (OFS) version 3! When you purchase OFS v3, choose either special pricing (~$1,000 savings) or an extra license ($2,000+ savings). Email info@plexon.com to request a quote or place an order.

UPCOMING EVENTS

•• **Computational and Systems Neuroscience (Cosyne)**, February 28-March 3, Salt Lake City, Utah, USA

•• **10th Göttingen Meeting of the German Neuroscience Society,** March 13-16, Göttingen, Germany

•• **4th Annual Plexon Neurophysiology Workshop**, April 29-May 2, Dallas, Texas, USA

RESEARCH SPOTLIGHT

Let us know about your 2013 publication citing Plexon and our equipment, and we will send you a thank you award with a mug and a T-shirt! Send notices, address and T-shirt size to publications@plexon.com.

All articles listed are alphabetical based on first author within two categories: articles published online in electronic-only journals or ahead of print, and articles published in full print.

Recent articles published online in electronic-only journals or ahead of print:

•• Cui, Guohong, Sang Beom Jun, Xin Jin, Michael D. Pham, Steven S. Vogel, David M. Lovinger, and Rui M. Costa. "Concurrent activation of striatal direct and indirect pathways during action initiation." *Nature* (2013).

•• Fujita, Satoshi, Risako Kato, Yilong Cui, Masanori Terakado, Kurando Suga, Noriaki Koshikawa, and Masayuki Kobayashi. "Apomorphine-induced modulation of neural activities in the ventrolateral striatum of rats." *Synapse* (2013).

•• Furukawa, Yuriko, Akiyoshi Shimada, Koichi Kato, Hiroo Iwata, and Keiichi Torimitsu. "Monitoring neural stem differentiation using PEDOT-PSS based MEA." *Biochimica et Biophysica Acta (BBA)-General Subjects* (2013).

•• Gupta, Kishan, Nathan J. Beer, Lauren A. Keller, and Michael E. Hasselmo. "Medial Entorhinal Grid Cells and Head Direction Cells Rotate with a T-Maze More Often During Less Recently Experienced Rotations." *Cerebral Cortex* (2013).

•• Lignani, Gabriele, Andrea Raimondi, Enrico Ferrea, Anna Rocchi, Francesco Paonessa, Fabrizia Cesca, Marta Orlando et al. "Epileptogenic Q555X SYN1 Mutant Triggers imbalances in release dynamics and short-term ." *Human Molecular Genetics* (2013).

•• Ma, Rui, He Cui, Sang-Hun Lee, Thomas J. Anastasio, and Joseph G. Malpeli. "Predictive encoding of moving target trajectory by neurons in the parabigeminal nucleus." *Journal of Neurophysiology* (2013).

•• Maier, Joost X., and Donald B. Katz. "Neural dynamics in response to binary taste mixtures." *Journal of Neurophysiology* (2013).

•• Maris, Eric, Thilo Womelsdorf, Robert Desimone, and Pascal Fries. "Rhythmic neuronal synchronization in visual cortex entails spatial phase relation diversity that is modulated by stimulation and attention." *NeuroImage* (2013).

•• Medert, Rebekka, Anne Schuster, Lukas Kristoffer Schwarz, Tanja Schwab, and Karl-Herbert Schaefer. "Spiking rate of myenteric neurons recorded from multi-electrode arrays depending on local microenvironment." *physica status solidi* (c) (2013).

•• Misra, A., P. Kondaveeti, J. Nissanov, K. Barbee, P. Shewokis, L. Rioux, and K. A. Moxon. "Preventing neuronal damage and inflammation in vivo during cortical microelectrode implantation through the use of Poloxamer P-188." *Journal of Neural Engineering* 10, no. 1 (2013): 016011.

•• Peck, Christopher J., Brian Lau, and C. Daniel Salzman. "The primate amygdala combines information about space and value." *Nature Neuroscience* (2013).

•• Suyatin, Dmitry B., Lars Wallman, Jonas Thelin, Christelle N. Prinz, Henrik Jörntell, Lars Samuelson, Lars Montelius, and Jens Schouenborg. "Nanowire-Based Electrode for Acute In Vivo Neural Recordings in the Brain." *PLOS ONE* 8, no. 2 (2013): e56673.

Recent articles published in full print:

•• Aton, Sara J., Christopher Broussard, Michelle Dumoulin, Julie Seibt, Adam Watson, Tammi Coleman, and Marcos G. Frank. "Visual experience and subsequent sleep induce sequential plastic changes in putative inhibitory and excitatory cortical neurons." *Proc Natl Acad Sci USA*. 2013 Feb 19;110(8):3101-6.

•• Burbaud, Pierre, Anne-Hélène Clair, Nicolas Langbour, Sara Fernandez-Vidal, Michel Goillandeau, Thomas Michelet, Eric Bardinet et al. "Neuronal activity correlated with checking behaviour in the subthalamic nucleus of patients with obsessive–compulsive disorder." *Brain* 136, no. 1 (2013): 304-317.

•• Hung Cao, Ling Gu, S. K. Mohanty, and J.-C. Chiao. "An Integrated µLED Optrode for Optogenetic Stimulation and Electrical Recording." *IEEE Transactions on Biomedical Engineering* 60, no. 1 (2013): 225-229.

•• Cardoso-Cruz, Helder, Deolinda Lima, and Vasco Galhardo. "Impaired Spatial Memory Performance in a Rat Model of Neuropathic Pain Is Associated with Reduced Hippocampus–Prefrontal Cortex Connectivity." *The Journal of Neuroscience* 33, no. 6 (2013): 2465-2480.

•• Chen, Shih-Kuo, Kylie S. Chew, David S. McNeill, Patrick W. Keeley, Jennifer L. Ecker, Buqing Q. Mao, Johan Pahlberg et al. "Apoptosis Regulates ipRGC Spacing Necessary for Rods and Cones to Drive Circadian Photoentrainment." *Neuron* 77, no. 3 (2013): 503-515.

•• Chubykin, Alexander A., Emma B. Roach, Mark F. Bear, and Marshall G. Hussain Shuler. "A Cholinergic Mechanism for Reward Timing within Primary Visual Cortex." *Neuron* 77, no. 4 (2013): 723-735

•• Fukuda, Mitsuhiro, Alberto L. Vazquez, Xiaopeng Zong, and Seong-Gi Kim. "Effects of the -2-adrenergic receptor agonist dexmedetomidine on neural, vascular and BOLD fMRI responses in the somatosensory cortex." *European Journal of Neuroscience* 37, no. 1 (2013): 80-95.

•• Hall, Nathan, and Carol Colby. "Psychophysical definition of S-cone stimuli in the macaque." *Journal of Vision* 13, no. 2 (2013).

•• Hok, Vincent, Ehsan Chah, Etienne Save, and Bruno Poucet. "Prefrontal Cortex Focally Modulates Hippocampal Place Cell Firing Patterns." *The Journal of Neuroscience* 33, no. 8 (2013): 3443-3451

•• Huang, Xin, and Stephen G. Lisberger. "Circuit mechanisms revealed by spike-timing correlations in macaque area MT." *Journal of Neurophysiology* 109, no. 3 (2013): 851-866.

•• Luk, Chung-Hay, and Jonathan D. Wallis. "Choice Coding in Frontal Cortex during Stimulus-Guided or Action-Guided Decision-Making." *The Journal of Neuroscience* 33, no. 5 (2013): 1864-1871.

•• Nguyen, Minh Nui, Etsuro Hori, Jumpei Matsumoto, Anh Hai Tran, Taketoshi Ono, and Hisao Nishijo. "Neuronal responses to face--ike stimuli in the monkey pulvinar." European *Journal of Neuroscience* 37, no. 1 (2013): 35-51.

•• Oby, Emily R., Christian Ethier, and Lee E. Miller. "Movement representation in the primary motor cortex and its contribution to generalizable EMG predictions." *Journal of Neurophysiology* 109, no. 3 (2013): 666-678.

•• Ramalingam, Nirmala, Justin NJ McManus, Wu Li, and Charles D. Gilbert. "Top-Down Modulation of Lateral Interactions in Visual Cortex." *The Journal of Neuroscience* 33, no. 5 (2013): 1773-1789.

•• Samuelsen, Chad L., Matthew PH Gardner, and Alfredo Fontanini. "Thalamic Contribution to Cortical Processing of Taste and Expectation." *The Journal of Neuroscience* 33, no. 5 (2013): 1815-1827.

•• Thomson, Eric E., Rafael Carra, and Miguel AL Nicolelis. "Perceiving invisible light through a somatosensory cortical prosthesis." *Nature Communications* 4 (2013): 1482.