



MARCH 28, 2013

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NEW LED COMMUTATOR, WORKSHOP DEADLINE AND PLEXSTIM™ SDK

NEW PLEXBRIGHT™ DUAL LED COMMUTATOR

Plexon is pleased to announce the launch of our new PlexBright™ Dual LED Commutator along with the seven new compact LED Modules and commutator specific patch cables, expanding the PlexBright LED Optogenetic Stimulation System product line. The PlexBright Dual LED Commutator is a light-weight, low-torque design that supports optogenetic experiments with animals as small as mice.

A range of specialized Compact LED Modules have been engineered for use with the commutator that mirror wavelengths available in Plexon's Table Top LED Modules – royal (450nm), blue (465nm), green (525nm), yellow (590nm), orange (615nm), red (625nm) and crimson (645nm). This commutator supports the use of either one or two compact, super intensity LED modules. When operating two compact modules simultaneously, each one may either be driven independently or they may share the same signal, such as for bilateral stimulation.

To complete the package, unique PlexBright Optical Patch Cables have been designed to maximize performance when utilizing this new commutator. Hands-on training will be provided for the PlexBright Dual LED Commutator, PlexBright Compact LED Modules and the PlexBright Optical Patch Cables for commutator use during the upcoming Annual Neurophysiology Workshop.

Contact info@plexon.com for more information.

PLEXSTIM™ ELECTRICAL STIMULATOR 2.0

Good news for PlexStim™ Electrical Stimulator 2.0 users! Not only are you now able to download the product software online, but there is a new SDK available as well. This new install includes updated drivers, so we recommend that everyone with the Stimulator 2.0 downloads this release. Additionally, the SDK is not available separately, so the complete install should be performed to gain access to the SDK. The download is available via the PlexStim Electrical Stimulator 2.0 page or in the support section of the website under Software Downloads, Product Specific, PlexStim Electrical Stimulator 2.0.

WORKSHOP EARLY REGISTRATION DEADLINE - MARCH 31

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

The Annual Plexon Neurophysiology Workshop is now 65% SOLD OUT and early registration pricing ends this weekend on March 31. To receive the early registration price, a Registration Form and payment must be received by the deadline. Registration will remain open through April at the standard registration price as long as seats are still available.

The following details the program day by day:

Monday, April 29

Welcome Reception

Tuesday, April 30

OmniPlex® Workshop

OmniPlex Guest Speaker - Matt Bauman

Keynote Speaker - Doug Weber

MAP Workshop

PlexBright Optogenetics Workshop

PlexBright Guest Speaker - Cyril Herry

Social Event

Wednesday, May 1

CinePlex® Workshop

CinePlex Guest Speaker - Sanjay Anand

Offline Sorter Workshop

PlexStim™ Electrical Stimulator Workshop

1-on-1 Coaching

Thursday, May 2

Probes and Electrodes Workshop

U-Probe Guest Speaker - Luca Bonini

NeuroExplorer® Workshop

We welcome any questions at workshop@plexon.com. We are looking forward to seeing you there!

JOVE GRANT CONTEST NOW CLOSED

Thank you all who submitted an abstract for this first JoVE Publication Grant Contest! Plexon and JoVE are currently reviewing the submissions. The winner will be contacted next week and announced afterwards.

OFFLINE SORTER™ PROMOTION

Get in on our 30th Anniversary specials for Offline Sorter (OFS) version 3! When you purchase OFS v3, choose either a 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

- **British Festival of Neuroscience**, April 7-10, London, UK
- **4th Annual Plexon Neurophysiology Workshop**, April 29-May 2, Dallas, Texas, USA

INNOVATION FOR THE NEXT 30 YEARS

Plexon continues to celebrate its 30th year serving researchers around the globe!

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:

- Belle, Anna Marie, Catarina A. Owesson-White, Natalie Rios Herr, Regina M. Carelli, and Robert Mark Wightman. "Controlled Iontophoresis Coupled with Fast-scan Cyclic Voltammetry/Electrophysiology in Awake, Freely-moving Animals." *ACS Chemical Neuroscience*.
- Bellistri, Elisa, Juan Aguilar, Jorge R. Brotons-Mas, Guglielmo Foffani, and Liset Menendez de la Prida. "Basic properties of somatosensory-evoked responses in the dorsal hippocampus of the rat." *The Journal of Physiology* (2013).
- Bonifazi, Paolo, Francesco Difato, Paolo Massobrio, Gian L. Breschi, Valentina Pasquale, Timothée Levi, Miri Goldin et al. "In vitro large-scale experimental and theoretical studies for the realization of bi-directional brain-prostheses." *Frontiers in Neural Circuits* 7 (2013).

- Burgos-Robles, Anthony, Hector Bravo-Rivera, and Gregory J. Quirk. "Prelimbic and Infralimbic Neurons Signal Distinct Aspects of Appetitive Instrumental Behavior." *PLOS ONE* 8, no. 2 (2013): e57575.
- Clements, Isaac P., Andrew G. Gnade, Alexander D. Rush, Craig D. Patten, Mark C. Twomey, and Alexxai V. Kravitz. "Miniaturized LED sources for in vivo optogenetic experimentation." *In SPIE BiOS*, pp. 85860X-85860X. International Society for Optics and Photonics, 2013.
- Hancock, Kenneth E., Yoojin Chung, and Bertrand Delgutte. "Congenital and Prolonged Adult-Onset Deafness Cause Distinct Degradations in Neural ITD Coding with Bilateral Cochlear Implants." *Journal of the Association for Research in Otolaryngology* (2013): 1-19.
- Hass, Charles A., and Gregory D. Horwitz. "V1 mechanisms underlying chromatic contrast detection." *Journal of Neurophysiology* (2013).
- Hayden, Benjamin Y., and Jack L. Gallant. "Working memory and decision processes in visual area V4." *Frontiers in Neuroscience* 7 (2013).
- Huang, Jian-Jia, Chen-Tung Yen, Tzu-Lan Liu, Hen-Wai Tsao, Ju-Wei Hsu, and Meng-Li Tsai. "Effects of dopamine D2 agonist quinpirole on neuronal activity of anterior cingulate cortex and striatum in rats." *Psychopharmacology* (2013): 1-8.
- Jarlier, Frédéric, Angelo Arleo, Geraldine H. Petit, Julie M. Lefort, Céline Fouquet, Eric Burguière, and Laure Rondi-Reig. "A Navigation Analysis Tool (NAT) to assess spatial behavior in open-field and structured mazes." *Journal of Neuroscience Methods* (2013).
- Knaack, Gretchen L., Hamid Charkhkar, Franz W. Hamilton, Nathalia Peixoto, Thomas J. O'Shaughnessy, and Joseph J. Pancrazio. "Differential Responses to ω -Agatoxin IVA in Murine Frontal Cortex and Spinal Cord Derived Neuronal Networks." *NeuroToxicology* (2013).
- Long, John D., and Jose M. Carmena. "Dynamic changes of rodent somatosensory barrel cortex are correlated with learning a novel conditioned stimulus." *Journal of Neurophysiology* (2013).
- Ma, Chaofei, Xiaochuan Pan, Rubin Wang, and Masamichi Sakagami. "Estimating causal interaction between prefrontal cortex and striatum by transfer entropy." *Cognitive Neurodynamics*: 1-9.
- Mohanty, Samarendra K., and Nitish V. Thakor. "Optogenetics: Optical Methods for Cellular Control." *In Proc. of SPIE Vol.*, vol. 8586, pp. 858601-1. 2013.
- Nassi, Jonathan J., Ali H. Cetin, Anna W. Roe, Edward M. Callaway, Karl Deisseroth, and John H. Reynolds. "A precise and minimally invasive approach to optogenetics in the awake primate." *In SPIE BiOS*, pp. 85860A-85860A. International Society for Optics and Photonics, 2013.
- Pais-Vieira, Miguel, Mikhail Lebedev, Carolina Kunicki, Jing Wang, and Miguel AL Nicolelis. "A Brain-to-Brain Interface for Real-Time Sharing of Sensorimotor Information." *Scientific Reports* 3 (2013).

- Phillips, Jessica M., Martin Vinck, Stefan Everling, and Thilo Womelsdorf. "A Long-Range Fronto-Parietal 5-to 10-Hz Network Predicts "Top-Down" Controlled Guidance in a Task-Switch Paradigm." *Cerebral Cortex* (2013).
 - Ray, Supratim, Amy M. Ni, and John HR Maunsell. "Strength of Gamma Rhythm Depends on Normalization." *PLoS biology* 11, no. 2 (2013): e1001477.
 - Richert, Micah, Thomas D. Albright, and Bart Krekelberg. "The complex structure of receptive fields in the middle temporal area." *Frontiers in Systems Neuroscience* 7 (2013): 2.
 - Srejic, Luka R., Taufik A. Valiante, Michelle M. Aarts, and William D. Hutchison. "High-frequency cortical activity associated with postischemic epileptiform discharges in an in vivo rat focal stroke model: Laboratory investigation." *Journal of Neurosurgery* (2013): 1-9.
 - Tejada, Hector, Ting Li, and Samarendra Mohanty. "Comparison between Bessel and Gaussian beam propagation for in-depth optogenetic stimulation." In *SPIE BiOS*, pp. 85860G-85860G. *International Society for Optics and Photonics*, 2013.
 - Welsh, John P., Josef Turecek, and Eric E. Turner. "Evaluating cerebellar functions using optogenetic transgenic mice." In *SPIE BiOS*, pp. 85860C-85860C. *International Society for Optics and Photonics*, 2013.
- Recent articles published in full print:**
- Arnold, Maria M., Janusz Szczepanski Noelia Montejo, Jose M. Amigo, Eliguisz Wajnryb, and Maria V. Sanchez-Vives. "Information content in cortical spike trains during brain state transitions." *Journal of Sleep Research* 22, no. 1 (2013): 13-21.
 - Berger, Theodore W., Dong Song, Vasilis Z. Marmarelis, Jeff LaCoss, Jack Wills, Greg A. Gerhardt, John J. Granacki, Robert E. Hampson, and Sam A. Deadwyler. "Reverse Engineering the Brain: A Hippocampal Cognitive Prosthesis for Repair and Enhancement of Memory Function." In *Neural Engineering*, pp. 725-764. Springer US, 2013.
 - Carroll, Michael S., and Jan-Marino Ramirez. "Cycle-by-cycle assembly of respiratory network activity is dynamic and stochastic." *Journal of Neurophysiology* 109, no. 2 (2013): 296-305.
 - Chen, Chih-Yang, and Ziad M. Hafed. "Postmicrosaccadic Enhancement of Slow Eye Movements." *The Journal of Neuroscience* 33, no. 12 (2013): 5375-5386.
 - Dzirasa, Kafui, Sunil Kumar, Benjamin D. Sachs, Marc G. Caron, and Miguel AL Nicolelis. "Cortical-Amygdalar Circuit Dysfunction in a Genetic Mouse Model of Serotonin Deficiency." *The Journal of Neuroscience* 33, no. 10 (2013): 4505-4513.
 - Hernandez, Ledia F., Yasuo Kubota, Dan Hu, Mark W. Howe, Nuné Lemaire, and Ann M. Graybiel. "Selective Effects of Dopamine Depletion and L-DOPA Therapy on Learning-Related Firing Dynamics of Striatal Neurons." *The Journal of Neuroscience* 33, no. 11 (2013): 4782-4795.
 - Kaliukhovich, Dzmitry A., Wouter De Baene, and Rufin Vogels. "Effect of Adaptation on Object Representation Accuracy in Macaque Inferior Temporal Cortex." *Journal of Cognitive Neuroscience Early Access* (2013): 777-789.
 - Khodagholi, Dion, Thomas Doublet, Pascale Quilichini, Moshe Gurfinkel, Pierre Leleux, Antoine Ghestem, Esma Ismailova et al. "In vivo recordings of brain activity using organic transistors." *Nature Communications* 4 (2013): 1575.
 - London, Brian M., and Lee E. Miller. "Responses of somatosensory area 2 neurons to actively and passively generated limb movements." *Journal of Neurophysiology* 109, no. 6 (2013): 1505-1513.
 - Pais-Vieira, Miguel, Mikhail A. Lebedev, Michael C. Wiest, and Miguel AL Nicolelis. "Simultaneous Top-down Modulation of the Primary Somatosensory Cortex and Thalamic Nuclei during Active Tactile Discrimination." *The Journal of Neuroscience* 33, no. 9 (2013): 4076-4093.
 - Rishel, Chris A., Gang Huang, and David J. Freedman. "Independent Category and Spatial Encoding in Parietal Cortex." *Neuron* 77, no. 5 (2013): 969-979.
 - Sangha, Susan, James Z. Chadick, and Patricia H. Janak. "Safety Encoding in the Basal Amygdala." *The Journal of Neuroscience* 33, no. 9 (2013): 3744-3751.
 - Smith, Matthew A., Xiaoxuan Jia, Amin Zandvakili, and Adam Kohn. "Laminar dependence of neuronal correlations in visual cortex." *Journal of Neurophysiology* 109, no. 4 (2013): 940-947.
 - Sun, Yujiao J., Young-Joo Kim, Leena A. Ibrahim, Huizhong W. Tao, and Li I. Zhang. "Synaptic Mechanisms Underlying Functional Dichotomy between Intrinsic-Bursting and Regular-Spiking Neurons in Auditory Cortical Layer 5." *The Journal of Neuroscience* 33, no. 12 (2013): 5326-5339.
 - Totah, Nelson KB, Mark E. Jackson, and Bitu Moghaddam. "Preparatory attention relies on dynamic interactions between prelimbic cortex and anterior cingulate cortex." *Cerebral Cortex* 23, no. 3 (2013): 729-738.
 - Whitt, Jessica L., Radi Masri, Nisha S. Pulimood, and Asaf Keller. "Pathological Activity in Mediodorsal Thalamus of Rats with Spinal Cord Injury Pain." *The Journal of Neuroscience* 33, no. 9 (2013): 3915-3926.
 - Wunderle, Thomas, David Eriksson, and Kerstin E. Schmidt. "Multiplicative Mechanism of Lateral Interactions Revealed by Controlling Interhemispheric Input." *Cerebral Cortex* 23, no. 4 (2013): 900-912.