

**ISN (International Society for Neurochemistry) Symposium on
Optogenetic control of Motion and Motivation**

The winter conference in Soelden 2013 (April 9-13) which built the framework for the ISN symposium on optogenetics, had an attendance of 145 people from 23 countries (Brazil, Germany, USA, Switzerland, Israel, France, Austria, Finland, Saudi Arabia, Spain, Thailand, Sweden, Italy, Belgium, Czech Republic, UK, Croatia, Republic of Korea, Denmark, Kenya, Canada, Russian Federation, Japan), among them PIs using cutting edge technologies like Karl Deisseroth, Botond Roska, and Michael Brecht. Thus, the symposium on optogenetic control of motion and motivation fitted well into the conference.

The symposium which was announced as an ISN symposium in the meeting's brochure, was held on Thursday, April 11 from 9-11AM. Ilka Diester gave a brief introduction into the topic of the symposium during which the ISN got credited for the financial support (please see also the ISN logo on introductory slide on the picture with the four speakers). The idea of the symposium was to provide an overview of what is currently possible with optogenetic manipulations. Thus, the scope of the symposium ranged from technological aspects to applications of optogenetics. Further a variety of widely used animal models were discussed (mice, rats, zebrafish and non-human primates) and a broad range of areas of the central nervous system were included. This, and the fact that some of the leading scientist in the field presented, might have been reasons for why the symposium was exceptionally well attended and had fruitful Q&A sessions.

The symposium comprised a series of four talks. Ofer Yizhar from the Weizmann Institute (Rehovot, Israel) covered the basics of the technique and showed examples of new tool developments. Afterwards he moved on to the influence of the balance between neural excitation and inhibition which he studies with optogenetic tools in the prefrontal cortex of mice. His talk ended with an outlook with very new data about 2-photon imaging from his own lab. The second talk was given by Ilka Diester from the Ernst-Strüngmann-Institute for Neuroscience (Frankfurt, Germany) who presented data about a direct comparison of optogenetic manipulations in the motor cortex of rats and monkeys. Afterwards, she reported on a detailed analysis of the effects of electrical and optogenetic stimulations on a neural and behavioral level, thus allowing an evaluation of what technique to use for which purpose. With Claire Wyart's talk (Centre de Recherche de l'Institut du Cerveau et de la Moelle épinière, Paris, France) the topic of the symposium stayed in the motor system but in a completely different animal model and brain structure, namely the spinal cord of zebrafish larvae. Dr. Wyart described her new method for tracking the behavior of these animals, which she uses in order to quantify their locomotion. Afterwards she described how she applies optogenetic manipulations to influence locomotion. With the last talk of the symposium given by Christian Lüscher (Friedrich Miescher Institute, Geneva, Switzerland) the topic of the symposium returned to the mouse model. In contrast to Dr. Yizhar's studies, Prof. Lüscher talked about the mesolimbic system: he presented data about inhibitory interneurons in the nucleus accumbens which interact with neurons in the ventral tegmental area. He described how he probes this interaction with optogenetic tools showing its causal role in cocaine addiction. Overall, the symposium run very

smoothly and resulted in enthusiastic feedback about the quality of the talks and lively discussions during the rest of the meeting.



Picture of the four speakers of the ISN symposium on optogenetic control of motion and motivation. From left to right: Ofer Yizhar, Ilka Diester (symposium organizer), Claire Wyart, and Christian Lüscher.

Financial report

Participant	Christian Lüscher	Claire Wyart	Ofer Yizhar	Ilka Diester
Travel costs (in Euro) (flight/train + taxi)	648.47 €	461.10 €	680.69 €	354.20 €
meals/accommodation costs (in Euro)	533.60 €	201.59 €	661.40 €	513.60 €
registration costs (in Euro)	390.00 €	390.00 €	390.00 €	0.00 €
TOTAL (in Euro)	1,572.07 €	1,052.69 €	1,732.09 €	867.80 €

Total (in USD) 6,839.07 USD
+ Difference 160.93 USD
Total (in USD) 7,000.00 USD

The remaining difference will cover the estimated fees for the transfers to the bank accounts of the participants and for potential differences in the currency rates.