

# NEWSLETTER



Dear customers,

This is our current neuroConn newsletter containing information about our work, our equipment as well as technical issues and current events.

More information can be found at:

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## Latest news

### We have moved. More space in a more modern environment

The move to our new premises has been successfully completed. The 3rd floor of a modern office building in the immediate vicinity of the Technical University of Ilmenau provides us almost 600 m<sup>2</sup> floor space - twice as much as before.

Thus, we could separate development and production from each other, significantly increase and modernize our production areas, increase the component storage and expand the space for service and customer care. In compliance with our spatial expansion we also expanded our human resources: Last year we welcomed four new employees to our team of now 21 staff members. They work in hard- and software development, production, as well as customer service for neurofeedback users.

Our new address: Albert-Einstein-Straße 3, 98693 Ilmenau, Germany



### International, national and regional research projects with our participation

We are very pleased that we can yet intensify our cooperation with partners from universities and companies in concrete research projects. There is a continuous exchange of experience and views on technical and methodological innovations and advancements in the field of neurofeedback and the non-invasive brain stimulation (NiBS). In addition to the EU projects on portable EEG systems for acute care - [EmerEEG](#) or on translational research in disorders of social behavior - [MATRICS](#), we are involved in projects for home use of neurofeedback - [NF-HOME](#), and the development of new sensor technologies - [SensEcoMed](#).

Within the [EyeTSS](#) project neuroConn will expand the already close cooperation with the Technical University of Ilmenau and the University of Göttingen in the field of NiBS by other companies in our region within. EyeTSS is part of the InnoProfile project of the German Federal Ministry for Education and Research.

### Non-invasive brain stimulation

Christoph Herrmann showed at the [NWG 2014](#) that a specific application of tACS can produce a causal relationship between the memorized brain oscillations and the cognitive performance. New modeling approaches for the distribution of electromagnetic fields in the brain were demonstrated by Alexander Opitz, Sven Wagner and Marom Bikson, who support the scientists in this field of research.

The research groups of Martin Sommer and John Rothwell presented first promising results for pulse-width controlled transcranial magnetic stimulation (cTMS - [Rogue Resolutions](#)) at the [ICCN 2014](#) in Berlin. One of the highlights of the congress was the historical symposium on the occasion of the 50th anniversary of the discovery of the Bereitschaftspotential by Kornhuber and Deecke (1964). In addition, there were numerous workshops and plenary lectures about current research topics on the application of transcranial direct current stimulation (tDCS) & transcranial alternating current stimulation (tACS), but also on issues of security and ethics, and the methodological development of non-invasive brain stimulation. Dr. Soekadar and his team of researchers from the University of Tübingen, Germany were able to demonstrate that direct current stimulation supports SMR-neurofeedback ([Abstract](#)).



However, the local effect of HD-tDCS was questioned by the working groups from Milan / London. They found that this form of motor cortex stimulation depends on its direction.

The research group of Dr. Vera Moliadze & Prof. Michael Siniatchkin from the University of Frankfurt, Germany showed that tDCS can be safely applied even in children and adolescents. They pointed out though, that the applied currents need to be lower. The same group was able to present the first results of the application of tDCS in children and adolescents with ADHD in a collaboration with the University of Marburg, Germany.

[\[ICCN2014 Abstracts\]](#)

### Can tDCS help patients regain state of consciousness after coma?

Researchers at the Coma Science Group of the University of Liège in Belgium have shown that tDCS allows patients in a minimally conscious state to recover cognitive and motor skills. This technique could offer clinicians a new way to help these patients recover, even several years after their coma. In the [study](#) twenty-minute stimulations were carried out on 55 patients, half of whom were patients in a minimally conscious state. A clinical improvement was reported in 43% of patients in a minimally conscious state. However, the positive effects appear to be temporary at this stage of research. [\[more information\]](#)

### Shaping memory accuracy by tDCS

Controlling emotional information and retrieving positive memories are important in neuropsychiatric diseases. With their [research](#) in tDCS at the University Hospital of Psychiatry and Psychotherapy in Tübingen, Germany, Prof. Plewnia and his team of researchers managed to decipher another bit of the function of the left frontal lobe.

### Medication for ADHD

#### Amount of consumed medication decreased slightly

In early April the German Federal Institute for Drugs and Medical Devices (BfArM) published the consumption rates for methylphenidate of 2013 and found a slight decline for the first time in 20 years. Between 2002 and 2012, the amounts consumed in Germany had almost tripled and reached a record level of nationwide 1839 kg in 2012. There had been an average increase by 17% over years. Do doc-

tors in Germany begin to scrutinize their procedure when it comes to the treatment of ADHD in children? Meanwhile, there is growing evidence that the use of medication for ADHD may not lead to better grades in school or social behavior in the long term.

According to [Nature](#), several studies have shown that children are indeed more adapted and can better concentrate on their tasks in the short term. Over the years though, there is no significant approximation to healthy children in both the school grades and social behavior.

The multicenter study of neurofeedback in children with ADHD by the German Research Foundation (DFG) is currently being evaluated. Maybe we can report about it in our next newsletter.

### NeuroConn workshops and conferences

#### Workshops / symposia - Q2/2014

6 – 7 May 2014: [NYC tDCS WS 2014](#) [\[read more\]](#)

24 - 27 June 2014: [Toolkit](#) CNS Transcranial Brain Stimulation, Nijmegen, The Netherlands [\[read more\]](#)

7 June 2014: TMS - Navigation with [Brain-sight 2](#), Hamburg, Germany [\[read more\]](#)

#### Exhibitions / conferences - Q2 /2014

26 April – 3 May 2014: [AAN](#), Philadelphia, USA [\[read more\]](#)

3 – 7 May 2014: [APA](#), New York, USA [\[read more\]](#)

5 – 10 May 2014: [ESCAN](#), Dortmund, Germany [\[read more\]](#)

8 – 12 June 2014: [OHBM](#) Annual Meeting, Hamburg, Germany [\[read more\]](#)

### Imprint

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