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**POSTER PRESENTATION**

## Potassium optically pumped magnetometer for shielded and partly shielded biomagnetic measurements

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Potassium optically pumped magnetometer (POPM) was assembled with the aim to obtain a very sensitive magnetometer for static (dc) and low frequency (up to 1MHz) magnetic fields. This magnetometer uses tunable solid state diode laser for the excitation of potassium atoms in the sensing cell of about 10 cm<sup>3</sup> volume. The second perpendicularly oriented tunable solid state diode laser is used to detect the alteration of polarization plane rotation, which is proportional to the alteration of measured magnetic field. The sensitivity of our magnetometer is about 5 fT/(sqrt Hz) in the white noise region. Tests were performed in a noisy laboratory in the town. Here, a 3 layer mu-metal shielding was applied. Subsequent measurements were completed in the magnetically quiet laboratory out of town. Here, the experiments were conducted either with only copper shielding or with both: copper and mu-metal shielding. As expected, the signal/noise was about 10 times better. Biomagnetic MCG measurements were completed on healthy subjects. Measurements of the response of electrically excited large plant cells (*Chara corallina*) were also undertaken. It looks that the POPM can be in some biomagnetic applications a complement for the more used SQUID magnetometer.

**Conference:** Biomag 2010  
17th International Conference on Biomagnetism . Dubrovnik, Croatia (Hrvatska), March 28 – April 01, 2010.

**Citation:** Begus S, Jazbinsek V and Trontelj Z (2010). Potassium optically pumped magnetometer for shielded and partly shielded biomagnetic measurements. . Conference Abstract: Biomag 2010  
17th International Conference on Biomagnetism . doi: 10.3389/conf.fnins.2010.06.00418

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