Short-term Mobility Program
Applicant: Prof. Karel Vokurka

A report on the results of scientific activity carried out in the CNR IDACS during a 10 days stay in September 2010

In September 2009 a series of measurements has been initiated in the CNR IDACS with financial support provided by CNR under short-term mobility program for K. Vokurka. In these experiments light emission (the so called sonoluminescence) from spark generated bubbles has been studied. For these first measurements a relatively simple optic sensors based on photodiodes have been used.

These early results from September 2009 experiments have been processed, analyzed and presented at a conference DAGA 2010 organized by the German Acoustical Society in Berlin in March this year. Financial support from the CNR short term mobility program has been acknowledged at the paper published at the conference proceedings:

Vokurka K., Buogo S.: Experimental study of light emission from spark generated bubbles. *36. Jahrestagung für Akustik, DAGA 2010*, Berlin 15.–18.3.2010 (conference proceedings on CD-ROM, Deutsche Gessellschaft für Akustik 2010, ISBN: 978-3-9808659-8-2, Michael Möser, Brigitte Schulte-Fortkamp a Martin Ochmann, editors, pp. 671-672).

For September 2010 we have planned continuing in this promising research from September 2009 using an improved optical apparatus. We have concentrated on collecting statistically significant number of records to allow determining correlation among different parameters as, for example, intensity of optic radiation and intensity of bubble oscillation. We believe we have obtained scientifically interesting data. These data will be processed now, analyzed and prepared for submitting to a high impact international scientific journal. The CNR financial support for the short term mobility of K. Vokurka will be acknowledged in the paper.

Liberec, 9th November 2010

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