News

International Workshop

"Physical Effects of Pulsed RF Fields at Microscopic and Molecular Dimensions (Microdosimetry)"

On December 17-19, 2001, an international scientific seminar on the above mentioned topic will be held at the "Akademie für Arbeitssicherheit und Gesundheitsschutz" (Academy for Occupational Safety and Health Protection) in Dresden. The event has been planned and funded by the Radio Association for Radio Applications and will take place on the premises of, and is supported by, the "Berufsgenossenschaft der Feinmechanik und Elektrotechnik (BGFE)." Moreover, the workshop is supported by the Action "Cooperation in Science and Technology (COST) 281" of the European Union.

The planned workshop is a follow-up of two preceding scientific meetings held last December in Bad Münstereifel and this May in Washington, D.C. (see the reports in Newsletter 1/01, pp. 1 and 2/01, pp. 26, http://www.fgf.de).

During the seminar, about 20 biophysics experts from Germany, England, Finland, Italy and the United States will deal with the question of whether there are *reproducible biophysical mechanisms* causing a definite interaction between radio frequencies and biological systems. Here, particular interest lies in possible modulation-dependent effects caused by exposure to pulsed fields as used in mobile radio. In addition, about 30 invited guests, in part coming from related work areas, may participate in discussions.

The disussions are divided into five topic areas:

- the dielectric structure and the properties of cells and membranes relevant for radio frequencies
- energy absorption in tissues
- heating of microstructures
- energy absorption and transfer in molecular systems
- demodulation of radio frequencies by non-linearities of biological systems.

The meeting will deliberately omit the usual prepared lectures, so that the entire time is available for discussion guided by the topic list above. After the seminar, a meeting report prepared by the participants to summarise results will be published.

Project commissioning of a study on the autonomic nervous system exposed to fields in the high-GHz range

Only one proposal was submitted in response to the public call for tender made by the Research Association for Radio Applications in spring 2001. After a thorough review of this offer, the project with a two-years' deadline now has been awarded to a renowned institute at a German university.

The laboratory study will measure typical medical parameters controlled by the autonomic nervous system (i.e. not directly affected by willpower and consciousness). To this end, 50 test persons will be exposed to a multi-frequency signal. The signal will consist of a sequence of 7 frequencies in the range between 5.8 GHz and 110 GHz, each with a single pulse duration of 5 ms.

The future application of these frequencies is, for example, planned by automobile manufacturers to be used in various applications (e.g. spacing-distance radar).

During the entire experiment, the significant autonomic parameters such as heart rate, blood pressure, skin temperature, skin conductivity, and so on, will be recorded.

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The 90-min. experiment will be divided into a initial resting phase, a first possible field-exposure phase, a further resting phase, and a second possible field-exposure phase. The test will be performed as a so-called double-blind test at which neither the person examined nor the scientists performing the test will know when field-exposure takes place. That means that the transmission set-up will be automatically activated by the control unit via a random generator for 15 min., during either the first or the second field-exposure phase.

By comparison of data from non-exposure and exposure phases using statistical methods, possible effects of microwaves on the autonomic nervous system will be investigated. Subsequently, the results of the study will be documented.

As soon as the final report is submitted, the Research Association will report on project results.

COST 281 comments on the so-called "Hyland Paper"

The increased use of mobile phones and base stations has led to public concern on possible health effects of the emitted electromagnetic fields. The main reason for these worries are contradictory results from scientific studies and their interpretation presented by concerned individuals and some scientists.

In response to a request of the Irish Ministry for Economics to comment on a draft of G. Hyland addressed to the European Parliament, the recently initiated Action COST 281 of the European Union (COST = Coordination of Science and Technology) has prepared a discussion paper on the topic "Possible Health Impairments caused by Mobile Communication Systems" aiming to foster an objective scientific debate. On the whole, the discussion paper reflects the concern that opinions which are not representative of the views and convictions of leading scientists in this area will be accepted as accurate by the general public.

Apart from fostering the exchange of scientific views, COST 281 has the aim to create a basis for discussion on risks for decision-makers. It addresses the European Commission and the members of the European Parliament introducing common opinionsof a renowned group of experts in this area.

The commentary of the COST Action may be found on the web site http://www.cost281.org/activities.php. The Hyland paper is available at http://www.europarl.eu.int/stoa/publi/pdf/00-07-03_eu.pdf.

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