Recent scientific publications relevant to mobile telephony

January 2016

Details

Belgium: Fast Assessment of Power Absorption in Indoor Environments by Room Electromagnetics Theory, Bamba et al., *Radiation Protection Dosimetry*, Published online: November 14, 2015

> '*…Whole-body power absorption ranges from 23.5 to 85.9 μW kg−1 with a median deviation of ~3.1 dB (51 %). While this difference may appear large, it is outbalanced by a calculation time of less than a second for the proposed method compared with ~17.5 h for a single full-wave electromagnetic simulation...'*

Iran: The Fundamental Reasons Why Laptop Computers should not be Used on Your Lap Mortazavi et al., *Journal of Biomedical Physics and Engineering*, 2015.

> '*…not only the heat from a laptop computer can warm men's scrotums, the electromagnetic fields generated by laptop's internal electronic circuits as well as the Wi-Fi Radiofrequency radiation hazards (in a Wi-Fi connected laptop) may decrease sperm quality. Furthermore, due to poor working posture, laptops should not be used on the lap for long hours...'*

Iran: GSM 900 MHz Microwave Radiation-Induced Alterations of Insulin Level and Histopathological Changes of Liver and Pancreas in Rat, Mortazavi et al., *Journal of Biomedical Physics and Engineering*, 2015.

> *'…RF radiations emitted from mobile phone could not alter insulin release in rats. However, mild to severe inflammatory changes in the portal spaces of the liver of rats as well as damage in the cells of islet of Langerhans were observed. These changes were linked with the duration of the exposures…'*

Netherlands: Novel exposure units for at-home personalized testing of electromagnetic sensibility, Huss et al., *Bioelectromagnetics*, Published Online: 11 December 2015

> '*…No cues as to exposure conditions were reported. We aim to use these units in a future experiment with subjects who wish to test their personal hypothesis of being able to sense or experience when being exposed to EMF. The new units allow for a high degree of flexibility regarding choice of applied electromagnetic signal, output power level and location (at home or another environment of subjects' choosing).'*

Netherlands: Do car-mounted mobile measurements used for radio-frequency spectrum regulation have an application for exposure assessments in epidemiological studies?, Bolte et al., *Environment International*, 86(75-83), January 2016.

> '*…exposure assessments through the car-mounted measurements are at least of similar quality to exposure modelling and better than the body worn exposimeter data due to the absence of the shielding effect. The main conclusion is that the mobile measurements provide an efficient and low cost alternative particularly in mapping large areas.'*

Serbia: Statistical analysis of electromagnetic radiation measurements in the vicinity of indoor microcell GSM/UMTS base stations in Serbia, Koprivica et al., *Bioelectromagnetics*, Published online: 11 December 2015

> '*…Although microcell base stations with antennas installed indoors typically emit less power than outdoor macrocell base stations, the fact that people can be found close to antennas requires exposure originating from these base stations to be carefully considered…'*

Switzerland: Novel Sensor Model Calibration Method for Resistively Loaded Diode Detectors, Meyer et al., *IEEE Transactions on Electromagnetic Compatibility*, 57(6):1345-1353, December 2015.

> '*…The method was tested on various probes for over 200 modulations, resulting in a linearity uncertainty of less than <0.4 dB (k=2) for a dynamic range of >50dB. The proposed method will improve the precision of measurements, reduce calibration costs, increase the flexibility for application of diode-loaded sensors, and enable the use of real-time information for automated probe linearization during or after measurements.'*

United Kingdom: Variation in dielectric properties due to pathological changes in human liver Peyman et al., *Bioelectromagnetics*, 36(8):603-612, December 2015.

> '*…Knowledge of dielectric properties is vital for mathematical calculations of local electric field distribution inside electroporated tissues and can be used to optimize the process of electroporation for treatment planning procedures.'*
