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QUALIFICATION

Current position

Since 1993

Professor at Dept. of EM Field, FEE - CTU

Former positions

1993 – 1997

Vice-Rector of the CTU for development

2000 - 2002

Chancellor of the Rector of the CTU

Qualification

1993

Professor, specialization: Radioelectronics, CTU

1991

Docent, specialization: Radioelectronics, CTU

1976

PhD. (CSc.), specialization: Radioelectronics, CTU

1972

Ing., specialization: Communication Technique, CTU

Professional Path

Since 1993

Professor, Dept. of EM Field, FEE - CTU

1991 – 1993

Associate Professor, Dept. of EM Field, FEE - CTU

1977 – 1991

Assistant Professor, Dept. of EM Field, FEE - CTU

PROFESSIONAL ACTIVITIES

Research

Studies of interactions between EM Field and biological systems oriented to medical diagnostics and therapy. Our results are used in real clinics (i.e. treatment of oncological patients) at Inst. of Radiation Oncology in Prague (since 1981), further for basic research at Medical Faculty of the Charles University and at Microbiological Inst. of the Czech Academy of Sciences.

Chairman

2014

Czechoslovakia Section IEEE (Vice-Chairman in 2015, 2016 and 2017)

2006 – 2013

Founder and chairman of the **EMBS** chapter, Czechoslovakia Section IEEE

2004 – 2005

Czechoslovakia Section IEEE

Since 2016

URSI – member of the Czech National Committee,

Vice-Chairman of the Czech National Committee in 2016

Czech representative in URSI Commission K

Membership

Since 1991

ESHO - European Society for Hyperthermic Oncology

Award 2015

“ESHO-Pyrexar Award” for contribution to physical base of hyperthermia used for cancer patient treatment.

(<http://www.pyrexar.com/vrba-takes-home-2015-esho-pyrexar-award>)

INTERNATIONAL RESEARCH PROJECTS

- [01] Technological and Clinical Progress in the Area of Medical Microwave Imaging (MiMed), COST, registration number TD1301, 2013–2017. (Member of Management Committee)
- [02] Development of an energy-efficient pressurised microwave heating process to produce 3D-shaped REnewable BIO-polymer FOAMs for a novel generation of transportation packaging (REBIOFOAM), EU project FP7 – NMP3-SE-2009-214425.

SELECTED WOS JOURNAL PAPERS (2010 to 2015)

- [01] DŘÍŽDAL, T. – PAULIDES, M.M. - VRBA, J. – van RHOON, G.C.: Waveguide-based Applicators for Superficial Hyperthermia Treatment: is tuning really required? *Journal of EM Waves and Applications*, 2013, vol. 6, no. 27, p. 682-690. ISSN 0920-5071. **IF₂₀₁₃ = 1,395** .
- [02] POKORNÝ, J. – FOLETTI, A. - VRBA, J. - et al.: Biophysical Insights into Cancer Transformation and Treatment. *Scientific World Journal*, 2013, vol. 2013, ISSN 1537-744X. **IF₂₀₁₃ = 1,219** .
- [03] VRBOVÁ, B. - VRBA, J.: Microwave Thermotherapy in Cancer Treatment: Evaluation of Homogeneity of SAR Distribution. *Progress In Electromagnetics Research*. 2012, vol. 129, p. 181-195. ISSN 1559-8985. **IF₂₀₁₂ = 5,298** .
- [04] DOBŠÍČEK-TREFNÁ, H. VRBA, J. - PERSSON, M.: Design of a Wideband Multi-channel System for Time Reversal Hyperthermia. *Int. Journal of Hyperthermia*. 2012, vol. 28, no. 2, p. 175-183. ISSN 0265-6736. **IF₂₀₁₃ = 2,769** .
- [05] POKORNÝ, J. – VRBA, J. - et al.: Targeting mitochondria for cancer treatment. *Europ. Journal of Oncology* 2012, vol. 17, no. 1, p. 23-36. ISSN 1128-6598. **IF₂₀₁₃ = 0,220** .
- [06] Franconi, C. - Vrba, J. - Micali, F. - Pesce, F.: Prospects for Radiofrequency Hyperthermia Applicator Research. *International Journal of Hyperthermia*. 2011, vol. 27, no. 2, p. 187-198. ISSN 0265-6736. **IF₂₀₁₃ = 2,769** .
- [07] Havelka, D. - Cifra, M. - Kučera, O. - Pokorný, J. - Vrba, J.: High-frequency electric field and radiation characteristics of cellular microtubule network. *Journal of Theoretical Biology*. 2011, no. 286, p. 31-40. ISSN 0022-5193. **IF₂₀₁₃ = 2,303** .
- [08] DOBŠÍČEK-TREFNÁ, H. - VRBA, J. - PERSSON, M.: Evaluation of a Patch Antenna Applicator for Time Reversal Hyperthermia, *International Journal of Hyperthermia*. 2010, vol.26, no.2, p. 185-197. ISSN 0265-6736., 2010. **IF₂₀₁₃ = 2,769** .
- [09] DOBŠÍČEK-TREFNÁ, H. - VRBA, J. - PERSSON, M.: Time -reversal Focusing in Microwave Hyperthermia for Deep-seated Tumors. In: *Physics in Medicine and Biology*. 2010, vol. 55, no. 8, p. 2167-2185. ISSN 0031-9155. **IF₂₀₁₃ = 2,902** .
- [10] Dřížd'al, T. - Togni, P. - Víšek, L. - Vrba, J.: Comparison of Constant and Temperature Dependent Blood Perfusion. *Radioengineering*. 2010, vol. 19, no. 2, p. 281-289. ISSN 1210-2512. **IF₂₀₁₃ = 0.796**
- [11] Togni, P. - Vrba, J. - Vannucci, L.: Microwave Applicator for Hyperthermia Treatment on in Vivo Melanoma Model. *Medical and Biological Engineering and Computing*. 2010, vol. 48, no. 3, p. 285-292. ISSN 0140-0118. **IF₂₀₁₃ = 1.500**.