

## **Curriculum Vitae (Andras SZASZ)**

### **PERSONAL**

- 1947.Nov.04.:** Born in Budapest, Hungary  
**1971-cont.** Married (dr.Csih; Zsuzsanna [Susan])  
**Two children:** Oliver (1974), Nora (1977)

### **STUDIES**

- 1954-66** Primary and secondary schools in Budapest, Hungary  
**1967-72** Studies at Eötvös University (Physics) [MS graduation, thesis: Positron annihilation]  
**1974** Doctor's degree at Eötvös University (Surface physics)  
**1983** Candidate of Mathematical and Physical Sciences of Russian Academy of Science, (Surface physics)  
**1983** Candidate of Physical Sciences of Hungarian Academy of Science (Surface physics)  
**1996** Habilitation at St.Istvan University (Hungary) (Biophysics)

### **ACADEMIC APPOINTMENTS:**

- 1972-74:** Postgraduate Student at Eötvös University on Solid State Phys.  
**1974-84:** Assistant Professor at Eötvös University on Solid State Phys.  
**1984-96:** Associate Professor at Eötvös University on Solid State Phys.  
**1987-92:** Appointed membership of Electroless Section of American Electroplaters Society, (Liaison officer)  
**1986-87:** Meanwhile appointed researcher in University of Strathclyde, Scottish Surface and Material Analysis Centre, UK.  
**1988-2004:** Appointed visiting professor to Material Engineering Department (Scottish Surface Centre) of Strathclyde University. (Glasgow, UK)  
**1996-cont.** Professor at St. Istvan University, Gödöllő, Hungary

### **ADMINISTRATIVE EXPERIENCE:**

- 1983-85:** Deputy Head of Institute for Solid State Physics. Eötvös University  
**1985-86:** Head of Institute for Solid State Physics, Eötvös University  
**1983-87:** Head of METALAB Interdisciplinary Research Association, Eötvös University  
**1987-91:** Head of Laboratory of Surface and Interface Physics, Eötvös University  
**1988-:** Founder of OncoTherm Kft (Ltd) in Hungary  
**1990-2001:** CEO of OncoTherm Ltd.

- 1991-94:** Founder and Chairman of the Council of Foundation for Talented Pupils. (Két Bolyai Alapítvány)
- 1991-95:** Founder and Chairman of the Council of INNOHELP Foundation. (INNOHELP Alapítvány)
- 1993-2000:** Founder and Technical Director of OncoTherm GmbH, Germany, (Medical instruments)
- 2007-2010** CEO of Oncotherm GmbH, Troisdorf, Germany
- 2000-cont.** Head of Biotechnics Department in St. Istvan University, Faculty of Engineering. Hungary
- 2001-cont.** R&D director of OncoTherm ([www.oncotherm.de](http://www.oncotherm.de)) (both the Hungarian and German Branches)

#### **MEMBERSHIPS:**

- 1970 - 2010:** Member of Eötvös Physical Society (Hungary)
- 1979 - 2010:** Member of European Physical Society.
- 1994 - 2010:** Member of The New York Academy of Sciences (USA)
- 1995 - cont:** Member of the European Society for Hyperthermic Oncology (ESHO)
- 1995 - cont:** Member of the Institute of Electrical and Electronics Engineers (IEEE, USA)
- 1995 - cont:** Member of the Bioelectromagnetic Society (BEMS, USA)
- 1995 - 2010:** Member of the American Institute of Physics (AIP, USA)

#### **PUBLICATIONS:**

Author and co-author of 473 publications (178 articles, 295 conference contributions/abstracts), and co-author of eight books.

#### **REALISED RESULTS:**

Author and co-author of 43 patents. Based on the knowledge of membrane/surface physics and biophysics, developed a treatment system for oncology (electro-cancer therapy, electro-hyperthermia, oncothermia), which is successfully applied in various Clinics worldwide.

#### **SCIENCE AWARD:**

**2000** Dennis Gabor Award (Hungarian Academy of Science).

#### **SELECTED RESEARCH ACHIEVEMENTS**

Research interest of Prof.Szasz is connected with the interdependence of the metastability (instability) and electronic-structure of materials, including the metastable compounds and bonds at surfaces and interfaces. In the last 20 years this study was concentrating on the membranes of biological structures.

Below are shown some selected new results in the wide field of the publications activity:

- establish a new, non-destructive depth-profile analysis for investigations the electronic structure of metastabilities in the interface regions (SXDA, nanospectroscopic range), [1],
- find the exact solution of the lattice-gas system (Ising model), [2],
- focus the attention on some specialities of the interdependence of metastability and electronic structure, supposing that the electronic structure has a major role in the localised stability. [3], [4], [5], [6], [7], [8], [9], [10], [11], [12],
- work out a new model for autocatalytic build-up process, [13], [14], [15], [16], [17], [18],
- work out a new conception on Superconductivity, [19], [20], [21], [22], [23],
- work out a new conceptions for the metastabilities in living systems, [24], [25], [26], [27], [28], [29], [30],
- develop a new treatment in oncology, called electro-hyperthermia applied widely in various clinics worldwide [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42],
- develop a new model for membrane states and ionic flow [43], [44].

The main realized results are the electro-hyperthermia devices, working in many clinics all over the world, [45].

## References:

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  - [3] Szasz A, Kertész L, Kojnok J et al (1985) The Role of the Electronic Structure in the Solid Phase in Age-Hardenable Al Alloys. Aluminium 61(7):515-517
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