

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

### **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 professorship to Material Engineering Department of Strathclyde University. (Glasgow, UK)  
**1996-cont.** Professor at St. Istvan University, Gödöllő  
**2000-cont.** Head of Biotechnics Department in St. Istvan University, Faculty of Engineering.

### **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)  
**2001-cont.** R&D director of OncoTherm ([www.oncotherm.org](http://www.oncotherm.org)) (both the Hungarian and German Branches)  
**2007-cont.** CEO of HOT-Oncotherm GmbH, Troisdorf, Germany

### **MEMBERSHIPS:**

- 1970 - cont:** Member of Eötvös Physical Society (Hungary)  
**1979 - cont:** Member of European Physical Society.  
**1994 - cont:** 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 - cont:** 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 seven books.

### **REALISED RESULTS:**

Author and co-author of 41 patents. Developed special surface coatings on metals for especially high wear- and corrosion resistance. The coatings could be made even inside of narrow (<1mm) tubes. Developed a system of high elastic metallic coatings on non-metallic substrates mainly on textiles for various applications. Based on the knowledge of surface physics, 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 high Tc Superconductivity, [19], [20], [21], [22], [23],
- work out a new conceptions for the metastabilities in living systems, [24], [25], [26], [27],
- develop a new treatment in oncology, called electro-hyperthermia applied widely in various clinics worldwide [28], [29], [30], [31], [32], [33], [34].
- develop a new model for membrane states and ionic flow [35], [36].

The main realized results are the electro-hyperthermia devices, working in many clinics all over the world, [37].

## References:

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