Csaba János HŐS, PhD

Curriculum Vitae

Personal data

Date and place of birth: 27th June, 1978, Budapest, Hungary

Nationality: Hungarian

Family: married (Orsolya), 4 children (Sára - 2006, Csenge - 2008, Boróka - 2010, Bodza - 2017)

Education

2001 – 2006 **PhD in Fluid Mechanics**, *Budapest University of Technology and Economics, Faculty of Mechanical Engineering (BME GPK)*, Title: Dynamic Behaviour of Hydraulic Drives, Supervisor: László Kullmann.

1996 – 2001 **MSc in Mechanical Engineering**, *BME GPK*, Degree #001663, 87/2001.

1992 – 1996 **Frigyes Karinthy High School**, *Budapest*.

1984-1992 **Mihály Vörösmarty Elementary School**, *Budapest*.

Work Experience & Positions

2019– **Vice-Dean for International and Scientic Affairs**, *BME GPK*.

2022– **Full-time professor**, *BME GPK*, Dept. of Hydrodynamic Systems (HDS).

2013–2022 **Reader**, *BME GPK*, Dept. of Hydrodynamic Systems (HDS).

2006–2013 **Assistant professor**, *BME GPK*, Dept. of Hydrodynamic Systems.

2004-2006 **Assistant lecturer**, *BME GPK*, Dept. of Hydrodynamic Systems.

Teaching

BSc courses

2013– Lecturer of course *Fluid Machinery* (>400 students) in Hungarian and English.

2011– Lecturer of courses *Introduction to Mechanical Engineering* and *Volumetric Pumps and Compressors* in English.

2002– Supervisor of more than 40 BSc Final Projects.

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MSc courses

2011– Lecturer of course *Unsteady Flow in Pipe Netwroks* in Hungarian and English.

2014– Lecturer of course *Fluid Machinery Design* in Hungarian.

2010– Supervisor of more than 10 MSc Final Projects.

PhD courses

2013– Lecturer of course *Piecewise Smooth Dynamical Systems* in Hungarian.

2011– PhD students:

- 2009 – 2013 József Bene (graduated)
- 2010 – 2016 Csaba Bazsó (graduated)
- 2010 – 2016 Péter Csizmadia (graduated)
- 2015 – 2019 István Erdődi (graduated)
- 2017 – 2021 Richárd Wéber (graduated)
- 2018 – 2022 Péter Nagy-György (graduated)
- 2019 – Ghaith Burhani
- 2019 – Tamás Huzsvár

Grants and Awards

2016 – 2017 Guest researched at the University of Bristol, Dept. of Engineering Mathematics (ERC IAA Grant)

2015 Knight of Cross from the Order of Merit of the Hungarian Republic

2015 – 2018 OTKA (Hungarian Scientific Research Fund) K grant: *Dynamics of one-degree-of-freedom oscillators in fluid flow with applications on relief valve valve stability* (OTKA #116549), 11.832M Ft

2012 – 2015 Bolyai Research Grant of the Hungarian Academy of Sciences

2012 – 2016 OTKA (Hungarian Scientific Research Fund) K grant: *Optimal design, identification and energy-efficient operation of large-scale hydraulic systems* (OTKA #106141), 15.114M Ft

2009 – 2012 OTKA (Hungarian Scientific Research Fund) PD grant: *Analysis of dynamic phenomena in hydraulic systems* (OTKA #76478), 14.665M Ft

2009 Water and Innovation Grand, Hungarian Water Utility Association

2004 One-year Research Grant from Hungarian Electricity Private Limited Company (MVM Zrt.): "Optimal Pump Scheduling for Water Distribution Systems"

2002 Hungarian State's Eötvös Scholarship for 5 months, spent as research fellow at the Dept. of Engineering Mathematics, University of Bristol.

2001 Erasmus scholarship for 5 months, writing the MSc final project at the Dept. of Engineering Mathematics, University of Bristol.

2000/2001 Hungarian State Scholarship.

Language

English — Upper-intermediate oral and written (Type "C", National Language Board, #1995/04342 (A), 20394 (B)

German — Upper-intermediate oral and written (Type "C", BME Centre of Modern Languages, #N/145/1997

Scientific Metrics

WoS journal papers: 46

Citations: 459 (WoS), 1014 (Google Scholar), 591 (MTMT)

Hirsch index: 14 (WoS), 19 (Google Scholar)

Some industrial contracts

2014 – 2016 Design of a large-capacity (3700 m^3/h) UV fertilizer, partner: Budapest Waterworks Ltd.

2012 – 2015 Stability of Direct Spring Operated Pressure relief Valves, partner: Pentair Valves and Controls, Texas, Houston

2015 – 2016 Tube impeller optimization, partner: Grundfos R&D Dept., Denmark

2012 Train journey optimization software development, partner: Knorr Bremse

2010 – 2013 Dense slurry mixer modelling, partner: GEA EGI

Scientific public activities

2015 – Secretary of the Thermal and Fluid Flow Technology Committee of the Hungarian Academy of Sciences

2013 – Responsible of the first-year PhD students of the Pattantyús-Ábrahám Géza Doctoral School (BME GPK).

2010 – Secretary of the Fluid Machinery Board of the Scientific Society for Mechanical Engineering.

Research interests

Steady-state and transient behaviour of large-scale pipe networks, sensitivity analysis, optimal sensor placement.

Optimal pump schedules.

Fluid-structure interaction, stability and dynamics of 1DoF oscillators in fluid media.

Pressure relief valve vibration and stability.

Computational Fluid Dynamics in pumping technology and non-Newtonian fluids.