Curriculum Vitae: Reza S. Abhari

#### **Biographical Summary:**

Dr. Reza S. Abhari is professor of Energy Technologies at ETH Zurich, Switzerland. He is the Head of the Laboratory for Energy Conversion (LEC) at ETH Zurich (<a href="www.lec.ethz.ch">www.lec.ethz.ch</a>). Established in 1892 with about 70 to 80 highly qualified students and staff researchers, LEC is involved in fundamental and applied research and education related to technology and economics of turbomachinery, gas turbine technology, wind energy, power generation systems, aerospace, and semiconductor industries.



Reza Abhari is a member of the Swiss National Academy of Engineering Sciences (<a href="www.satw.ch">www.satw.ch</a>). He is also a Fellow of American Society of Mechanical Engineers (ASME), as well as the recipient of many scientific awards, including election as the Christensen Fellow of St Catherine's College, Oxford University in 2010. He was a speaker and the Chairman of the Forum on Innovation on energy system in the 2010 World Future Energy Summit in Abu Dhabi.

He is the author/co-author of over 250 scientific articles and journal publications. He is currently or has been in the past a member of a number of scientific editorial boards, including the Editorial Board of Journal of Power and Energy. He was also a member of advisory committee at NASA Glenn Research Centre as well as the Swiss Representative on the Board of ISABE.

- Member of Supervisory Board of PNE Wind AG (PNE3.DE), a publicly traded company and a leader in wind energy development with headquarters in Germany. (2008- 2015), In addition, Chairman of Audit Committee (2009- 2015)
- Member and Vice-Chairman of Supervisory Board of First Climate AG, a global leader in carbon asset development (2008- 2013)
- Member of Board of Directors of ASME International Gas Turbine Institute (IGTI), (2004-2010)
- Interim Senior Vice President of Engineering and Manufacturing in an Italian optical system company. (While on sabbatical leave in 2006)
- Management and technology consulting activities for a number of multi-national corporations in Europe, USA and Japan.
- Has been in the past and present involved as a founder, director or early stage team member in a number of start-up companies in the past 20 years.
- Contributing professor to the Renewable Energy Management (REM) program at University of St Gallen executive business school (2011- present)
- Created and responsible for "New Enterprises for Engineers" at ETH Zurich. This course
  introduces and supports multiple teams of 40 Masters and PhD graduate students per year
  from all the engineering and science departments in their pursuit of the establishment of a
  technologically focused start up. (<a href="http://www.nefe.ethz.ch">http://www.nefe.ethz.ch</a>)



#### **Education**

1991 PhD in Aeronautics and Astronautics, Massachusetts Institute of Technology

1984 BA (First Class Honors), MA, Engineering Science, Oxford University

#### **Professional Career:**

#### ETH Zurich, Switzerland

1999 – present	Full Professor of Aerothermodynamics Director, Laboratory for Energy Conversion
2011 – 2014	Head, Institute of Energy Technology
2005 – 2010	Delegate of the Rector Academic and Career Advisory Program, ACAP
2003 – 2005	Department Head, Department of Mechanical and Process Engineering
2001 – 2003	Head, Institute of Energy Technology

## The Ohio State University, Columbus, Ohio, USA

1997 – 1999	Associate Professor of Aeronautical Engineering Department (with Tenure), joint appointment with Mechanical Engineering Department
1995 – 1997	Assistant Professor of Aeronautical Engineering Department (tenure track), joint appointment with Mechanical Engineering Department
1995 – 1999	Associate Director, Gas Turbine Laboratory

## Calspan Advanced Technology Center, Buffalo, NY, USA

1994 – 1995 Section Head, Propulsion and Energy Research

#### Textron Lycoming, Stratford, CT, USA

1991 – 1994 Senior Research and Development Engineer

# MIT, Cambridge, MA, USA

1985 – 1990 Research Assistant

## **Engineering Department, Oxford University, Oxford, England**

1984 – 1985 Research Engineer



#### Research

Fundamental and applied fluid dynamics and thermodynamics, turbomachinery aerothermodynamics, wind energy, fluid-structure interaction, numerical simulation, experimental techniques, measurement technology, plasma science and engineering.

#### **Teaching and Supervision**

Supervision of a total of over 300 Semester and Masters projects as well as 30 PhD theses in applied fluid dynamics, propulsion, turbomachinery, power generation, instrumentation, modeling, cycle analysis, wind energy, and plasma science. Responsible for teaching courses in Applied Thermodynamics, Aerospace Propulsion, Turbomachinery Design, Gas Turbine Mechanics and Dynamics, Wind Energy, New Enterprises for Engineers.

## **Conference Organization and selected Keynotes:**

2014	Keynote speaker ESC Swiss grid dialogue, Zurich, Switzerland
2014	Presentation to Polish Congressional committee on energy and environment, Warsaw, Poland
2014	Panel speaker, Frankfurt International Finance group, Germany
2014	Keynote speaker, Lublin, Poland
2013	Keynote speaker, Innoasia 2013, Hong Kong
2013	Opening Plenary Session Speaker, 8 <sup>th</sup> Energy Forum, EU Energy Policy: in Search of a Compromise, Sopot, Poland
2013	Plenary Session Speaker, The New Industry Congress 2013, October 16-17, Warsaw, Poland
2013	Plenary Session Speaker, Financial Times (FT) Renewable Summit, London, England
2011	Keynote Speaker, Japanese International Gas Turbine Conference (IGTC), Osaka, Japan
2010	Keynote Speaker, 1 <sup>st</sup> Asian Gas Turbine Conference, Seoul, South Korea
2009	Keynote Speaker, AIAC, Ankara, Turkey
2006 – 2007	Chair of Conferences, ASME IGTI TE07
2006	Keynote Speaker, Minnowbrook Conference on Unsteady Flows, Syracuse
2005 – 2006	Review Chair, ASME IGTI Turbo Expo 2005 Conference in Barcelona, Spain.
2005	Keynote Speaker, 1st Asia Conference on Gas Turbine (ACGT), Seoul, Korea
2003	Co-Chairman, Minnowbrook Conference on Unsteady Flows in Turbomachines, Syracuse University, USA



2003	Technical Program Chair, ASME IGTI Turbo Expo 2004 in Vienna, Austria
1997 – 1998	Point of Contact, IGTI Heat Transfer Committee, Stockholm, Sweden
1996 – 1998	Session Organizer, IGTI Conferences

#### **Honors and Awards**

2014	R. Tom Sawyer Award of ASME inscription: 'For significant contributions to the gas turbine industry in both the U.S. and Europe, and for exemplary service to the IGTI'
2013.	Wind Energy Committee, IGTI, Best Paper Award
2011	Steam Turbine, IGTI, Best Paper Award
2009	Structures & Dynamics, IGTI, Best Paper Award
2008	Measurement Science and Technology Journal, Outstanding Paper in Fluid Mechanics for 2008
2008	Controls, Diagnostics & Instrumentation, IGTI, Best Paper Award
2007	Member, Swiss National Academy of Engineering Sciences (SATW)
2001	Fellow, ASME
1993	ASME-K14 Gas Turbine Heat Transfer, Best Paper Award
1989	MIT Enterprise Forum Award
1981 – 1984	ATV Scholar, St. Catherine's College, Oxford

## **SERVICE TO PROFESSIONAL SOCIETIES**

- Member of Board of Directors of ASME International Gas Turbine Institute (GTI) (2004 2010)
- Swiss National delegate, Board of International Society of Airbreathing Engines (2005 to Present)
- Member of the International Scientific Advisory Committee of Japanese Gas Turbine Society
- Member of the International Scientific and Program Committee of Conference on Modeling Fluid Flow, Budapest, Hungary.
- Associate Editor of Journal of Turbomachinery (1999- 2004)
- Editorial Board, Journal of Power and Energy, (2001- 2006)



- IGTI, Chair of Turbomachinery Committee (2001 2003)
- IGTI, Vice-Chair of Turbomachinery Committee (1999 2001)
- ASME National Nominating Committee (NNC), (1999-2001)
- ASME NNC, Second Alternate member (98-99)
- IGTI Heat Transfer Committee, Point of Contact, Stockholm (97-98)
- ASME Central Ohio Section, Industrial Liaison, (1996-1997)
- IGTI conferences, Session Organizer, (1996, 1997 & 1998).
- IGTI Turbomachinery Committee, Member (1995 Present)
- AIAA Student Advisor, Ohio State University (1996 -1999)
- ASME Student Advisor, student section of ASME in Switzerland (2002-2004)
- Gas Turbine Heat Transfer (K14) Committee, Member (1992 Present)

#### OTHER PROFESSIONAL SERVICE

- Expert witness on energy related technologies for a number of legal proceedings and arbitral tribunals
- Committee member, Engineering Science Department Review for the Educational Policy and Standards Committee (EPSC) of Oxford University (2002)
- Member, Swiss peer review committee responsible for the evaluation of Mechanical Engineering program at the Horw University of Applied Sciences, Luzern, Switzerland. (2001)
- Organizer and Group Leader, "ETH-Industry Dialog for Future" (2001)
- "ETH-Industry Dialog for Future" (2001, 2002)
- Steering Committee Member of GUIde (US Government, University, Industry) (1992 1994).



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