

CAETS Council Meeting  
 New Delhi  
 October 15, 2015

**Election of Board Members for 2016**

**ACTION:** The following persons have been nominated by their respective member academies for the positions noted. Brief bios follow. The Council is asked to elect these persons to their respective positions.

President-elect	Elias Fereres	RAIng, Spain
Member	Paul Verstraeten	BACAS, Belgium
Member	Hideaki Koizumi	EAJ, Japan
Member	Martin Philip Bendsoe	ATV, Denmark
Member	Jaime Parada	AI, Mexico

Assuming the above persons are elected, the Board membership for the period January 1, 2016 through December 31, 2016 will be:

President	Ann Dowling	RAEng, UK
President-elect	Elias Fereres	RAIng, Spain
Secretary, Treasurer	William C. Salmon	United States
Past President	Baldev Raj	INAE, India
Member <sup>1</sup>	Bruno Revellin-Falcoz	NATF, France
Member <sup>1</sup>	Petr Zuna	EA CR, Czech Republic
Member <sup>1</sup>	Karl A. Almas	NTVA, Norway
Member <sup>1</sup>	Robert L. Evans	CAE, Canada
Member <sup>2</sup>	Paul Verstraeten	BACAS, Belgium
Member <sup>2</sup>	Hideaki Koizumi	EAJ, Japan
Member <sup>2</sup>	Martin Philip Bendsoe	ATV, Denmark
Member <sup>2</sup>	Jaime Parada	AI, Mexico

<sup>1</sup> Term is 2015 and 2016

<sup>2</sup> Term is 2016 and 2017

## Nomination for 2016 CAETS President-elect

**ELIAS FERERES**

RAIng, Spain

**ELIAS FERERES** is Professor in the School of Agricultural and Forestry Engineering, University of Córdoba, Spain, and Researcher at the Institute of Sustainable Agriculture, Scientific Research Council of Spain (IAS-CSIC). Since 2006, he is also Director of the Agency for Quality Assurance of the University System and Research of Andalucía, Spain.

He was trained as an agricultural engineer (University of Madrid, 1969; doctoral degree, 1977) and has an MSc degree (Irrigation, 1974) and a Ph. D. (Ecology, 1976) from the University of California, Davis. From 1976 to 1982 he was a Lecturer at the Department of Land, Air and Water Resources, University of California, Davis, and Irrigation and Surface Water Specialist in Cooperative Extension, working on statewide extension programs on agricultural water management and conservation. In 1982 he returned to Spain as Professor at the University of Cordoba, Spain. Between 1983 and 1991, he had various advisory positions in the Ministry of Education and Science on different tasks related to the promotion of R&D. He run or participated in activities related to launching special programs in emerging scientific fields, the return of scientists from abroad, nationwide changes in study plans, and in a new system for evaluating research performance. In 1991, he was appointed President of the Higher Council of Scientific Research (CSIC), the largest research organization of Spain. In 1992, he was promoted to Secretary of State for Universities and Research of the Government of Spain where he worked until September of 1994. From 1996-2000, he was Director of the Institute of Sustainable Agriculture (CSIC, Cordoba, Spain). In 1998, he was appointed member of the Technical Advisory Committee (Science Council) of the Consultative Group of International Agricultural Research (CGIAR, Washington, DC), until 2003. He was a member of the LESC Committee of the European Science Foundation (1995-1998). He has been President of the European Society of Agronomy (2000-2002) and President (1995-2003; 2011- today) of the Royal Academy of Engineering of Spain, of which he is a founding member. He is also a member of the Academia Europaea. He has been a consultant on water, agricultural and environmental issues for national and international agencies such, as the Office of Technology Assessment of the US Congress, USAID, and several UN agencies, primarily FAO. Has worked and has had advisory assignments in Kazakhstan, Korea, Morocco, Jamaica, Jordan, Mexico, Brazil, Chile, Argentina, Italy, Holland, Portugal, Turkey, USA, and Uzbekistan, among others.

His professional area of expertise is centred around water sciences and engineering in relation to agriculture and the environment,. Current research interests are focused on the relations between water use and food production and the sustainability of water-limited agriculture, and include topics such as crop productivity as affected by water, water management at different scales, agriculture-environment interactions, soil and water conservation, irrigation water management, deficit irrigation strategies for horticultural crops, and efficient use of limited water supplies in drought situations. He has taught graduate and post-graduate courses on crop ecophysiology, water management, agricultural systems, sustainable agriculture, irrigation, and crop ecology and has directed 32 doctoral theses. He has published over 180 papers in refereed journals and book chapters, including chapters in both the American Society of Agronomy and the American Society of Agricultural Engineering irrigation monographs, and over 200 publications on technical issues and reports.

## Nominations for Members of the Board of Directors, 2016 – 2017

**PAUL VERSTRAETEN    BACAS    Belgium**



Born in Ghent, Belgium, on December 4<sup>th</sup>, 1950.

Married with Anne-Marie De Smet, medical doctor, father of Evelyn, Wim, Frank and Tom.

1974: Master of science (metallurgical engineering) at University of Ghent

1980: PhD. in materials sciences at University of Ghent (dissertation on the influence of the chemical and mineralogical properties of selected iron ores on the behavior of iron ore sinter in the blast furnace process).

Professional career:

- 1974-79: assistant at laboratory of metallurgy at University of Ghent
- 1979-83: proxy-holder at committee of planning and controlling of the Belgian steel industry (Brussels)
- 1983-85: assistant controller at Sidmar NV (steelworks in Ghent, Belgium)
- 1985-88: line manager of hot strip mill at Sidmar NV
- 1988-92: public affairs responsible at Sidmar NV
- 1992-2002: secretary general and spokesman of management board at Sidmar NV
- 2002-2006: member of the management board of Arcelor Ghent (new name of Sidmar after the merger of parent company Arbed with Usinor – France – and Aceralia – Spain -)
- 2006-2010: (after the merger of Arcelor and Mittal Steel) country manager of ArcelorMittal Belgium (Flemish part of the country) and executive secretary of ArcelorMittal Flat Carbon Steel Europe (Luxembourg)
- 2002-today: consular judge at commercial court of Ghent
- 2012-today: honorary consul of the Grand-Duchy of Luxembourg in East-Flanders

Member of the Belgian Academy Council of Applied Sciences (BACAS) since 2002.

Address: Paul Verstraeten, Nijverheidskaai 4, B9040 Sint-Amandsberg (Gent), Belgium

Phone number: + 32 9 279 82 78

Cell Phone number: + 32 495 59 79 36

e-mail address: paul.verstraeten4@telenet.be

**HIDEAKI KOIZUMI**

**EAJ Japan**



**Hideaki Koizumi**, Fellow and Corporate Officer of Hitachi, Ltd., is recognized worldwide as an early proponent and major advocate of the new trans-disciplinary field of Mind-Brain Science and the creation of noninvasive brain-function-imaging techniques. His many research contributions span from environmental measurement based on the invention and practical application of Polarized Zeeman-Effect Atomic Absorption Spectrometry to the inventions and the developments of Magnetic Resonance Angiography (MRA) and Optical Topography (fNIRS). His numerous external positions include Vice President of the Engineering Academy of Japan, Member of the Science Council of Japan (Cabinet Office of Japan), Foreign Member of the Chinese Academy of Engineering and Board Member of the University of Tokyo Research Center for Advanced Science and Technology. His work has been recognized through many honors including the Okochi Prize three times and the Prize of the Chemical Society of Japan. He was named an Honorable Member of the Japan Society for Analytical Chemistry after serving as its 55th President. He has also been a guest lecturer at many international forums and universities including OECD- and UNESCO-related forums, AAAS, Cambridge University, UCL, Harvard University, MIT, UC Berkeley (Faculty) and Southeast University (Honorable Professor). Koizumi received his B.Sc. in 1971 and his Ph.D. in Physics for the invention of PZAA Spectroscopy in 1976, both from the University of Tokyo in Japan.

**MARTIN PHILIP BENDSØE     ATV   Denmark**

Senior Vice President and Dean, Professor, dr.techn, Dr.h.c.. born 29.12.55  
Technical University of Denmark, DK-2800 Lyngby, Denmark.  
email: gdekan@adm.dtu.dk; WWW: <http://www.dtu.dk>

**DEGREES**

1979 M.Sc. (cand.scient.) (mathematics/physics), University of Copenhagen.  
1983 Ph.D. (lic.techn.), Technical University of Denmark.  
1995 Dr.techn., Technical University of Denmark.  
2010 Dr.h.c., Universié de Liege, Belgium.

**POSITIONS**

1981-82 Research fellow, Brown University, Providence, RI, USA (Rotary fellow).  
1983-96 Assistant prof., Associate prof., Docent, Dept. of Mathematics, DTU.  
1989-92, 98-01 Chairman, Dept. of Mathematics, DTU.  
1995-97 Director of Ph.D.-studies, DTU (Dean of the Graduate School). since 1996 Professor, Dept. of Mathematics, DTU. 2006-2009 Head of Department, Department of Mathematics, DTU. since 1.1.09 Senior Vice President and Dean of Graduate Studies and International Affairs, DTU.

**HONORS and AWARDS**

Direktør P. Gorm-Petersens Award, 1986; STATOIL Prize, 1992; Villum Kann Rasmussens Award, 1997.

## **OTHER**

- President (2011-2014), President-elect (2010-2011) and Vice-president (2009-2010), Danish Academy of the Technical Sciences (ATV).
- Member of the board of the COWI Foundation (since 2012, vice-chairman since 2013).
- Member of the board of SDC-DK and of the Joint Managerial Committee (since 2010), SDC (Sino-Danish Center for Education and Research, Beijing, China) (ex officio).
- President (2002-2007) and Vice-president (1999-2003), International Society of Structural and Multidisciplinary Optimization (ISSMO). Member of Executive Committee 1995-2011.
- Member of the EC of the Congress Committee, IUTAM (Int. Union of Theoretical and Applied Mechanics). 2004-2012 (member-at-large 2000-2004).
- Member, ATV Think-tank (2002-06), the Danish Academy of the Technical Sciences (chairman 2002-05).

## **RESEARCH PROJECTS**

International and national collaboration - management experience

Since 1988 main coordinator, contractor, and Danish coordinator for EU projects and other international projects (sponsored by, e.g., AGARD, ESF, NorFa, STVF, SNF) ; examples include:

- Main co-ordinator and contractor for TEMPUS JEP-0045 "Post-graduate programme in computer-aided design of structural and mechanical systems", 01.12.90 to 31.08.93. With 6 Polish, 1 Czech, 1 Slovak, 2 Danish, 2 German, 1 French, 1 Portuguese and 1 Italian universities. The project established 8 CAD-labs, organized 3 intensive courses and arranged long-term exchange visits for 33 students and 15 teachers.
- Project leader for a Danish Natural Science Foundation network "Partial differential equations ...." with participants from 6 Danish universities (DTU, KU, RUC, SDU, AU, AAU), 1997-2000, and 2000-2002.
- Co-ordinator and contractor, project on Articulated Mechanisms sponsored by Toyota CDRL, Japan, 2001-04.
- Main co-ordinator and contractor, EU-project PLATO-N (FP6 AERO-program) 2006-09. Project partners in Austria, Germany, Israel, UK and Denmark, including EADS-Germany og Airbus-UK.
- Partner in the Danish Technical Science Foundation project "INNOJOINT", 2006-2010, with Department of Mechanical Engineering, DTU.
- Danish coordinator, EU-project FlowHead (FP7 Transport-program), 2008-09. Project partners in Bulgaria, Denmark, France, Germany, Poland, and UK, including Renault og VW.

Organization of international conferences etc

Since 1992 organizer of several conferences. Examples include:

- Director of NATO Advanced Research Workshop "Optimal Topology Design of Structures", Portugal, June, 1992. Sponsorship from NATO, ARO, ONR, AFOSR, NSF (US).
- Co-organizer of Oberwolfach Seminar *Shape Optimization*, Mathematisches Forschungsinstitut Oberwolfach, Germany, November, 2004.
- Chairman (with O.Sigmund, DTU, and N. Olhoff, AAU as co-chairmen) for IUTAM Symposium "Topological Design Optimization of Structures, Machines and Materials – Status and Perspectives", Denmark, 2005.

## **INTERNATIONAL EVALUATION TASKS**

Evaluation work for NATO and for funding agencies in Austria, Denmark, Germany, Israel, Slovenia, South Africa, Sweden, Switzerland, and USA. Opponent on doctoral degrees at universities in Austria, Belgium, Denmark, Finland, France, Germany, and Sweden.

**GRADUATE THESIS STUDENTS:** Total number advised is 21 (none current).

**POST.DOCS.:** Total number advised is 15, recruited from 11 different universities in Europe and USA (none current).

## **EDITORIAL DUTIES**

Present/past member of editorial boards of 8 international journals, including: Int. Journal of Numerical Methods in Engineering; Structural and Multidisciplinary Optimization; Computers and Structures; International Journal for Computational Methods in Engineering Science and Mechanics.

## **RFEREE WORK**

Past referee work for 46 different international journals and publishers (books).

## **PUBLICATIONS and RESEARCH INTERESTS**

More than 160 publications including 6 monographs (4 as editor), 2 textbooks, and 62 papers in journals, 30 chapters in research monographs/books, and 56 papers in refereed proceedings, in the areas of optimization, computational mechanics, and homogenization, with an emphasis on design optimization. Number of citations in ISI (WoS): >8100, H-index=28 (all publications); Google Scholar: > 15700, H-index=37.

Co-Author of the most cited monograph (Google Scholar) and most cited paper (ISI plus Google) in the field

Structural Optimization. The latter paper is among the 10 most cited papers from DTU since 1988.

### **EXAMPLE PUBLICATIONS:**

#### Monographs

- "Topology Optimization - Theory, Methods, and Applications." (with Ole Sigmund) Springer Verlag, Berlin Heidelberg, 2003, xiv+370 pp. Second, revised printing, 2004.
- "Topological design optimization of structures, machines and materials - status and perspectives." (Niels Olhoff and Ole Sigmund, co-editors), Kluwer/Springer, Dordrecht/Berlin, 2006, xiii+608 pp.

#### International journals

- "Articulated Mechanism Design with a Degree of Freedom Constraint." (with A. Kawamoto and O. Sigmund) Int. J. Num. Meth. Engng., Vol. 61 (9), 2004, pp. 1520-1545.
- "Topology optimization of heat conduction problems using the finite volume method." (with A. Gersborg-Hansen and O. Sigmund), Structural and Multidisciplinary Optimization, Vol. 31 (4), 2006, pp. 251-259.
- "Optimization of friction stir welding using space mapping and manifold mapping – An initial study of thermal aspects." (with A.A.Larsen, Henrik Schmidt, and J.Hattel). Structural and multidisciplinary Optimization, Vol. 38, 2009, pp. 289-299.
- "Approximate Reanalysis in Topology Optimization." (with O. Amir and O. Sigmund). Int. J. Num. Mech. Engng., Vol: 78, 2009, pp. 1474-1491.

#### Other

- "PLATO-N : Developing Specialized Methods for Aeronautics Structural Design Applications." (with M.Stolpe) Proc. EngOpt 2008 - International Conference on Engineering Optimization, Rio de Janeiro, Brazil, 01 – 05 June 2008, 10 pp.
- "Større frihed giver højere kvalitet – om designoptimering med computeren." I Antologi i anledning af 100 årsdagen for Villum Kann Rasmussen, Villum Kann Rasmussen Fonden, 2009, 12 pp. (In Danish).

**JAIME PARADA-ÁVILA**

**AI Mexico**



Jaime Parada has over 38 years' experience in the fields of Research, Science and Technology Development, Innovation and Business Management. He currently holds the position of Director General of the Institute of Innovation and Technology Transfer of Nuevo Leon, and also is the Director of the Research and Technology Innovation Park (PIIT) of Nuevo León.

He obtained a degree on Mechanic and Electric Engineering from the Universidad Nacional Autónoma de México (UNAM), and served as a professor in the Faculty of Engineering of the same

University for over 15 years. He has also completed graduate courses on diverse subjects such as strategic planning, quality assurance systems, research and technological development. He was awarded the degree of Doctor of Engineering from the University of Sheffield, United Kingdom.

Prior to his current position, he was appointed by the Mexico's President as Director General of the National Council for Science and Technology (CONACYT), due to his renowned experience on the field. He held this position from January 2001 to September 2005.

Before that, he made a career as Chief Technology Officer in private companies such as Vitro and Cydsa, which are internationally recognized. He also held positions at director level on companies and government institutions, such as Technology director of Sidermex Group, Director General of the Mexican Institute of Manufacturing Research and Program Director of Research and Technology Centers at CONACYT.

In 2005, he founded Innovation and Competitiveness, SA de CV (Inncom), an expert consulting firm on competitiveness and innovation, advising governments and companies on issues of strategy, technology and organization, to making them more valuable through technology and innovation management. Also, he is Founder and President of the board of Nanomateriales SA de CV, high-tech company in the field of Nanotechnology.

In 2006, he was appointed as Visiting Professor at the University of Texas in the area of postgraduate science, technology and innovation studies, where he participates as a global fellow of the International Council on Competitiveness and Innovation Institute (IC2).

His contributions to the field of Science, Technology and Innovation have been acknowledged by several countries and institutions, such as the Order of Merit of the German Republic, which gave him the Decoration in the degree of Grand Officer. He is Vicepresident of the Mexican Academy of Engineering and, in recognition for his contributions to administrative and legal reforms to the science and technology and international cooperation policies, he was honored as a member of the Mexican Academy of International Law.

He is board member of several associations, research centers and councils, such as the Association of University Research Parks (AURP), 7 CONACYT's Research Centers in the areas of Mechatronics, Biotechnology, Advanced Materials, Energy, Water, and Manufacturing, the National Innovation Committee of the Ministry of Economy, the Competitiveness Council of the Manufacturing Industry Chamber CAINTRA Monterrey, and the Business Editorial Council of the prestigious regional newspaper El Norte. Member of Advisory Committee of ADIAT (Mexican Society of Directors of Applied Research and Technological Development). Member of Research and Innovation for Posgraduates Council at ITESM. Member of Laboratorios Silanes Council. Actually he is CEO at Innovation and Technology Transfer Institute in Nuevo Leon and President of Nuevo Leon, Economy and Knowledge Society Program.