

• **IATP Executive**

1. Professor William A. Wakeham
2. Professor Marc J. Assael
3. Dr Anthony Goodwin\*
4. Professor Alfred Leipertz
5. Professor Akira Nagashima
6. Professor Carlos A. Nieto de Castro
7. Professor Jan V. Sengers

• **IATP Members**

1. Professor Mikhail A. Anisimov
2. Dr Scott Bair
3. Dr Michael Bannish
4. Dr Antoine Baylaucq
5. Dr Robert F. Berg
6. Dr Eckard Bich
7. Professor Christian Boned
8. Professor Fernando Caetano
9. Dr John H. Dymond
10. Professor Joao M.N.A. Fareleira
11. Professor Josefa Fernandez
12. Professor Andreas Fröba
13. Dr Peter Gaal
14. Dr Guillaume Galliero
15. Dr. Ulf Hammerschmidt
16. Professor Ken Harris
17. Dr Robert Hellmann
18. Dr Marcia A. Huber
19. Dr Arno Laesecke
20. Professor Maria José V. Lourenço
21. Dr Kenneth N. Marsh
22. Dr. Jurgen Millat
23. Professor Yuji Nagasaka
24. Professor Carla Oliveira
25. Dr Agilio A.H. Padua
26. Dr Richard A. Perkins
27. Professor Sergio E. Quinones-Cisneros
28. Dr Bernd Rathke
29. Dr Michael H. Rausch
30. Dr Nicolas Riesco
31. Dr Fernando J.V. Santos
32. Professor Yusuro Sato
33. Dr Daniela Stroe
34. Professor J.P.Martin Trusler
35. Professor Velisa Vesovic
36. Professor Eckhard Vogel
37. Professor Libor Vozar
38. Professor Stephan Will
39. Professor Jochen Winkelmann
40. Professor Jiangtao Wu
41. Dr Kemal Tusat Yucel

• **The Aims**

The International Association for Transport Properties (IATP) is a non-profit group of scientists devoted to the advancement of the transport properties of materials. In particular, the association is engaged in the preparation of representations of the transport properties that are of value to engineering process design, and to the description of natural processes in the environment where international collaboration and agreement is especially significant. These developments consider the underlying science with the intention of improving out understanding.

IATP was formerly known as the Subcommittee on Transport Properties of the International Union of Pure and Applied Chemistry (1981 - 2001).

Further info at : <http://transp.cheng.auth.gr>

2001 - 2014 Chairman : Professor Sir W.A. Wakeham

Secretary : Professor M.J. Assael

• **List of Scientific Meetings**

1. 2001 Chalkidiki, Greece
2. 2002 Imperial College, London, U.K.
3. 2003 Boulder, Colorado, U.S.A.
4. 2004 Pau, France
5. 2005 Bratislava, Slovakia
6. 2006 Boulder, Colorado, U.S.A.
7. 2007 Istanbul, Turkey
8. 2008 Pau, France
9. 2009 Boulder, Colorado, U.S.A.
10. 2010 Santiago de Compostela, Spain
11. 2011 Thessaloniki, Greece
12. 2012 Boulder, Colorado, U.S.A.
13. 2013 Bremen, Germany
14. 2014 Porto, Portugal

• **Books Published**

1. *Experimental Thermodynamics. Vol.III. Measurement of the Transport Properties of Fluids.*  
Eds. A. Nagashima, J.V. Sengers, W.A. Wakeham.  
Blackwell Scientific Publications (1991).
2. *Transport Properties of Fluids. Their Correlation, Prediction and Estimation.*  
Eds. J.H. Dymond, J. Millat and C.A. Nieto de Castro.  
Cambridge University Press (1996).
3. *Experimental Thermodynamics. Vol.IX. Advances in Transport Properties of Fluids.*  
Eds. M.J. Assael, A.R.H. Goodwin, V. Vesovic, W.A. Wakeham.  
Royal Society of Chemistry (2014).

# 15th Meeting of the International Association for Transport Properties

(former Subcommittee on Transport Properties  
of IUPAC Commission I.2: Thermodynamics)



Sunday, June 21<sup>st</sup>, 2015

Room ECCR 1B51, Engineering Center  
Engineering Building, University of Colorado, Boulder



*in honor of Tony Goodwin*

## Program

Local Organising Committee

Dr. Richard Perkins ([richard.perkins@nist.gov](mailto:richard.perkins@nist.gov))

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- All presentations are informal and are followed by a discussion period.

09:00 Opening remarks.  
*W.A. Wakeham (UK).*

### Scientific Session A.

09:30 Thermophysical Properties of [C<sub>4</sub>mpyr][DCA] + H<sub>2</sub>O and [P<sub>6,6,6,14</sub>][DCA] + H<sub>2</sub>O  
*M.C. Melgarejo, L.C.S. Nobre, A.F. Santos, I.M.S. Lampreia, M.S.C.S. Santos, F.J.V. Santos, H. Segura, C.A. Nieto de Castro (Portugal).*

09:50 Dynamic Light Scattering for the Determination of Thermal and Mass Diffusivities of Binary and Ternary Fluid Mixtures in Chemical and Energy Engineering.  
*A. Heller, Th.M. Koller, M.H. Rausch, A. Leipertz, A.P. Fröba (Germany).*

10:10 Correlation and Estimation of the Viscosity and Self-diffusivity of Dialkyl Adipates.  
*H.M.N.T. Avelino, F.J.P. Caetano, J.C.F. Diogo, J.M.N.A. Fareleira*

10:30 Reference Correlation of the Viscosity of Toluene from the Triple Point to 675 K and up to 500 MPa.  
*S. Avgeri, M.J. Assael (Greece), M.L. Huber, R. Perkins (USA).*

10:50 Coffee

### Scientific Session B. High-Viscosity Liquids

11:10 Viscosity and Density of Krytox Fluids at Pressure up to 200 MPa  
*J.P.M. Trusler, M. Malami (U.K.)*

11:30 On the Viscosity Behaviour on Krytox GPL102: Effect of Temperature and Pressure.  
*M.J.P. Comuñas, F.M. Gaciño, J. Fernandez (Spain), J.-P. Bazile, Ch. Boned, G. Galliero (France), K.R. Harris (Australia), S.K. Mylona, M.J. Assael (Greece).*

11:50 Proposing TOTM as an Industrial Reference Fluid for Viscosity at High Temperatures and High Pressures  
*F.J.P. Caetano, J.C.F. Diogo, H.M.N.T. Avelino, J.M.N.A. Fareleira (Portugal), W.A. Wakeham (UK)*

12:10 Update on the High Pressure Viscosity and Thermal Conductivity Measurements at UWA with Pure Fluids and Mixtures  
*E. May (Australia)*

### Scientific Session C.

12:30 On the Enhancement of the Apparent Thermal Conductivity of Liquids Containing Multi-Wall and Double-Wall Carbon Nanotubes.  
*G. Tertsinidou, S.K. Mylona, M.J. Assael (Greece), W.A. Wakeham (U.K.).*

12:50 Thermophysical property research at the Helmut-Schmidt-University in Hamburg  
*K. Meier (Germany)*

13:10 Lunch

### Scientific Session D.

15:00 Rheology and Morphology Analysis of Water in Oil Emulsions  
*O. Pérez-Sandoval, J.S. Rodríguez-León, S.E. Quiñones-Cisneros (Mexico)*

### Business Session.

15:20 Announcements.

- Projects Concluded
- Continuing Collaborative Projects
  1. Reference correlations for the viscosity and thermal conductivity of fluids over extended temperature and pressure ranges.  
*C.-M. Vassiliou, S. Avgeri, S.K. Mylona, M.J. Assael (Greece), M.L. Huber, R.A. Perkins (USA)*
  2. High-temperature high-pressure viscosity standards  
*J.M.N.A. Fareleira, F. Caetano (Portugal), W. A. Wakeham, J.P.M. Trusler (UK), A.P. Froba, A. Leipertz, B. Rathke (Germany), K. Harris (Australia), A.R.H. Goodwin<sup>+</sup>, A. Laesecke (USA), J. Fernandez (Spain), K. Schmidt (Canada), Chr. Boned (France)*
  3. Two new volumes on experimental thermodynamics series published under the auspices of IUPAC Editor in Chief, W.Wakeham
    - Vol. X. Non-equilibrium Thermodynamics  
*Eds. S. Kjelstrup, D. Bedeaux, J.V. Sengers (USA)*
    - Vol. XI.  
*Eds. W.A. Wakeham, V. Vesovic A. Goodwin<sup>+</sup>, M. Huber, E.May..*
  4. Round Robin project on ionic liquids viscosity, and thermal conductivity measurements.  
*J.M.N.A. Fareleira, C.A. Nieto de Castro (Portugal), A. Leipertz, A. Fröba, U. Hammerschmidt, B. Rathke (Germany), J. Fernandez (Spain), R. Perkins (USA), K. Harris (Australia), M.J. Assael (Greece)*
  5. Diffusion nomenclature in the IUPAC Definitions of Symbols & Units  
*A.R.H. Goodwin<sup>+</sup> (USA), W.A. Wakeham (UK), C.A. Nieto de Castro (Portugal), J. Fernandez (Spain), K. Harris (Australia), M.J. Assael (Greece).*

- New Collaborative Projects

16:30 Coffee

- Future Collaborative Projects: Proposals
- Membership - Future Meetings

17:00 Meeting Adjourn