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Emeritus Professor of Casting Technology

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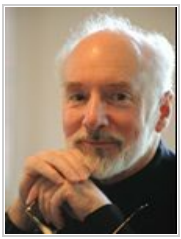
Contact details



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About

John Campbell is Emeritus Professor of Casting Technology in the Department of Metallurgy and Materials.

He has published over 200 papers in scientific journals, and is author of several casting textbooks including “Castings” 1991, 2nd Edition 2003, “Castings Practice – The 10 Rules of Casting” 2004, “Complete Casting Handbook” 2011, all published by Elsevier, and “Concise Castings” 2010 published by the American Foundry Society.

He is well known for his day-long training courses and workshops, and spends much of his time on the shop floor of foundries getting castings right.

Qualifications

- OBE, for Services to Industry 1993
- Fellow of the Royal Academy of Engineering 1991
- DEng Birmingham in casting science 1988
- Fellow of the Institute of Materials 1985
- Fellow of the Institute of Cast Metal Engineers 1985
- Chartered Engineer 1985
- PhD, Birmingham, in castings 1967
- MMet, Sheffield, in lattice defects in metals 1964
- MA, Cambridge, Natural Sciences 1962

Biography

John’s first degree from Cambridge specialised in physics and metallurgy, and this training was consolidated by the Masters course in Physical Metallurgy at Sheffield University. His PhD at Birmingham researched the origin of porosity in cast metals, particularly cast turbine blades, which were only just beginning to be accepted at that time.

He started work in the steel industry, but later moved to foundry work, being responsible for the development and management of the Cosworth Casting Process which at that time was revolutionary in its use of counter-gravity filling of precision sand moulds using an electromagnetic pump for the liquid aluminium alloy.

He since worked in the USA assisting to set up Alotech Inc, a light alloy foundry using the revolutionary new ‘Ablation Casting Process’ in which the highest cooling rates achievable create the highest properties in shaped castings.

The Institute of Cast Metal Engineers in the UK has set up the “John Campbell Medal” to be awarded each year for significant advances in the casting industry world wide.

Publications

- JC
  “Stop Pouring; Start Casting”
  The Hoyte Lecture, American Foundry Soc Annual Congress, April 2012
- JC and M Tiryakioglu
  “Bifilm Defects in Ni-Based Alloy Castings”
  Metals & Materials Transactions B 2012 April
- JC
  “The origin of Griffith cracks”
  Metals & Materials Transactions B 2011 42B (6) 1091-1097
- M Tiryakioglu, JC and C Nyahumwa
  “Fracture Surface Facets and Fatigue Life Potential of Castings”
  Metals & Materials Trans B 2011 42B (Dec) 1098-1103
- JC and M Tiryakioglu;
  “Review of the Effect of Sr on Porosity in Al-Si Alloys”
  Materials Science and Technology 2010 26 (3) 262-268
- M Tiryakioglu and JC
  “Weibull Analysis of Mechanical Data for Castings:

A Guide to the Interpretation of Probability Plots."
Metals & Materials Transactions 2010 41A (12) 3121-3129

- JC and R L Naro
  "Lustrous carbon in grey iron"
  Trans Amer Foundry Soc 2010 114 paper 10-36 pp 6
- JC
  "Fatigue crack initiation mechanism for cast 319-T7 Al Alloy"
  Metals & Materials Transactions 2010 41A (1) 18 only
- JC
  "Microstructural and stress corrosion cracking characteristics of austenitic stainless steels containing Si"
  Metals & Materials Transactions 2010 41A (5) 1101 only
- JC
  "The deformation behavior of lead-free solders."
  J of Metals 2010 62 (11) p 3 only
- JC.
  "Incipient grain boundary melting"
  Materials Science & Technology 2009 25 (1) 125-126
- M Tiryakioglu, JC and N D Alexopoulos;
  "On the ductility potential of cast Al-Cu-Mg (206) alloys."
  Mater Sci Engineering A 2009 506 23-26
- M Tiryakioglu, JC and N D Alexopoulos;
  "On the ductility of cast Al-7PctSi-Mg Alloys"
  Metals & Materials Transactions A 2009 40A 1000 – 1010
- JC
  "A Hypothesis of Graphite Formation in Cast Irons"
  Metals & Materials Transactions B 2009 40B (6) 786-801
- M Tiryakioğlu and J Campbell
  "Ductility, structural quality, and fracture toughness of Al-Cu-Mg-Ag (201) alloy castings"
  Materials Science and Technology 2009 25 (6) 784-789
- JC
  "On the Role of β Particles in Stress Corrosion Cracking of Mg-Al Alloys"
  Metallurgical and Materials Transactions A: 2009 40A, (7) 1510-1511.
- JC
  Discussion of "Effect of Sr and P on Eutectic Al-Si Nucleation and Formation of □-Al5FeSi in Hypoeutectic Al-Si Foundry Alloys"
  Metals & Materials Transactions A 2009 40A 1009-1010
- JC
  Discussion of "Fatigue Crack Initiation for Cast 319-T7 Al alloy"
  Metals & Materials Transactions A 2010 41A (1) 18-21
- M. Emamy, R. Abbasi, S. Kaboli and J. Campbell
  "The fluidity of Al-based metal matrix composites containing Al2O3 and SiC particles"
  Internat J Cast Metals Research 2009 22 (6) 430-437
- M Tiryakioglu, JC, N D Alexopoulos
  "Quality indices for Aluminum Alloy Castings: A Critical Review"
  Metals & Materials Transactions B 2009 40B (Dec) 802-811
- R. Hadian, M. Emamy, and J Campbell
  "The modification of cast Al-Mg2Si metal matrix composite by Lithium."
  Metals & Materials Transactions B 2009 40 (6) 822-832
- J. Grassi, JC, M Hartlieb, F Major
  "Ablation casting up-date"
  Shape Casting; 3rd Internat Symp TMS 2009. Editors: J Campbell, P N Crepeau, M Tiryakioglu.

Books

- "**Castings**" 1991, 2nd Edition 2003, Elsevier, Oxford, UK
- "**Castings Practice – The 10 Rules for Casting**" 2004, Elsevier, Oxford, UK
- "**Concise Castings**" 2010 American Foundry Soc, Schaumburg, IL, USA.
- "**Complete Casting Handbook**" 2011, Elsevier, Oxford, UK

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