Dr Chen Yuan

Research Fellow

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About

Dr. Chen Yuan is a Research follow working on investment casting shell and core development. She also had 10 years working experiences in ceramic microstructure design focusing on materials with porous, microcracked and laminated structures.

In early 2000, after obtaining her Ph.D. in Materials at University of Cambridge, she joined the University of Birmingham and has been working in the investment casting area since then. She is the author of over 25 papers and is an investigator on the EPSRC's speculative engineering grant 'Novel Core Design in Investment Casting'(EP/C509722/1).

Her main area of expertise has been in the field of developing non-silica based core and shell system for casting high temperature reactive alloy.

Qualifications

- Fellow of the Institute of Cast Metals Engineers (FICME), 2007
- PhD in Material Science and Metallurgy, University of Cambridge, 1999
- BEng (Hons) in Material Science and Engineering, Tianjin University, 1991

Teaching

Undergraduate:

- Ceramic Filler Production
- Supervision on Final year projects
- A study of inert refractory systems for casting Ti-Al alloys
- Optimisation of Processing of Y_2O_3 Shells for TiAl casting
- Refractory Mould Systems for casting of Titanium Aluminide Alloys

Postgraduate supervision

- Novel Shell Design in for TiAl Casting (Ph.D)
- Novel Core Design in Investment Casting (MPhil)
- Control of investment casting shelling process (MEng)
- Towards Inert Cores for Investment Casting (MPhil)

Publications

C. Yuan, S. Jones, and S. Blackburn, "Development of a New Ferrous Aluminosilicate Refractory Material for Investment Casting of Aluminium Alloys" Metallurgical and Materials Transactions A, in press

C. Yuan, L. J. Vandeperre, R. J. Stearn, and W.J. Clegg, "The Effect of Porosity in Thermal Shock", J. OF MATERIALS SCIENCE Volume: 43 Issue: 12 Pages: 4099-4106, 2008.

S. Jones, C. Yuan, S. Blackburn, "Rapid Shell Build For Investment Casting: Revolutionising An Ancient Process", 67thWorld Foundry Congress, Harrogate, UK, 5th-7th June 2006 - Best technical paper Award

C. Yuan, S. Jones and S. Blackburn. "The influence of Autoclave Steam on Polymer and Organic Fibre Modified Ceramic Shell", J. of European Ceram. Soc. 25 (7) 1081-1087, 2005

C. Yuan and S. Jones, "Investigation of Fibre Modified Ceramic Moulds for Investment Casting"J. of European Ceram. Soc. 2003, 23, 399-407

C. Yuan, S. Jones, P. Withey and P.M. Marquis " Development of Alumina Primary Coat For Single Crystal Investment Casting Ceramic Mould", Br. Ceram. Trans. 2002, **101** ,No 2, pp 59-64

C. Yuan and W.J. Clegg, "Effect of Particle Size on the Thermal Shock Behaviour of a Zirconia Refractory Partially Stabilised with Magnesia", Key Engineering Materials, 1997, 132-136, pp627-63

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