# Michele Chiumenti

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Date of birth: 25 September 1969
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## Current position

Associate Professor:   Universitat Politècnica de Catalunya - **UPC**
Research Staff:         International Center for Numerical Methods in Engineering - **CIMNE**
Product Manager:       **Quantech-ATZ** Software-house, consulting and marketing activities

## Education

Ph.D.:    Civil Engineering, Universitat Politècnica de Catalunya, UPC, Spain (1999)
Degree:   Civil Engineering, Politecnico di Milano, Italy (1994)

## Career

Research Staff, International Center for Numerical Methods in Engineering (CIMNE), since 1994.
Assistant Professor, Consorci Escola Industrial de Barcelona, 1998-1999.
Assistant Professor, Universitat Politècnica de Catalunya, (UPC), 1999-2004.
Associate Professor, Universitat Politècnica de Catalunya, (UPC), since 2004.

## Professional activities

Product Manager, Quantech-ATZ Software-house, consulting and marketing activities

## Teaching undergraduate

Statics and Strenght of materials, Escuela Técnica Superior de Ingenieros de Caminos, Canales y
Puertos de Barcelona, Dep. de Resistencia de Mater. y Estructuras en la Ingen., UPC, since 1999

## Teaching graduate

Ph.D. Course, Numerical Methods in Non-linear Solid Mechanics, UPC, since 2003
Ph.D. Course, Advanced Solid Mechanics, UPC, since 2006
Master Course, Master en Ingeniería Civil, UPC, since 2007
Master Course, Structural Analysis of Monuments and Historical Constructions, UPC, since 2008
Master Course, Métodos Numéricos para el Cálculo y Diseño en la Ingeniería, CIMNE, since 1999

## Membership

SEMNI, Sociedad Española de Métodos Numéricos el la Ingeniería (Spanish association for
numerical methods in engineering)

## Research Interests

- Computational methods in applied sciences and engineering.
- Finite elements methods in non-linear computational mechanics and coupled problems.
- Numerical simulation of industrial metal-forming processes such as casting, welding, metal-deposition, sheet metal forming and forging.
- Numerical simulation of food preservation processes.

## *Patents*

VULCAN: Software for the numerical simulation of metal-casting  processes
([http://www.quantech.es/vulcan.aspx](http://www.quantech.es/vulcan.aspx))

## *Participation in Financed Research Projects* (last 5 of 22)

Casting of Large Ti structures (**COLTS**)
FP7 - Aeronautics and Air Transport (AAT) - 2010 - RTD-CHINA

Magnesium New Technologies Opportunities (**MAGNO**)
Programa CENIT (CDTI)

Fusion Technology Programme (**TECNO_FUS**)
Programa CONSOLIDER-INGENIO 2010

Detailed Multi-Physics Modelling of Friction Stir Welding (**DEEPWELD**), FP6-EC Specific
Target Research Project (STREP), AST4-CT-2005-516134, 2005-2008.

Virtual Engineering for Robust Manufacturing with Design Integration (**VERDI**), FP6-EC
Specific Target Research Project (STREP), AST4-CT-2005-516046, 2005-2008.

## *Peer-reviewed journal articles* (last 5 of 22)

Mesh objective modeling of cracks using continuous linear strain and displacement
interpolations
Cervera M., Chiumenti M. and Codina R.
International Journal for Numerical Methods in Engineering, Vol. 87, Issue 10, (2011), pp.
962–987, DOI: 10.1002/nme.3148

Mixed stabilized finite element methods in nonlinear solid mechanics. Part II: Strain
localization
Cervera M., Chiumenti M. and Codina R.
Computer Methods in Applied Mechanics and Engineering, Vol. 199, (2010), pp. 2571-2589

Mixed stabilized finite element methods in nonlinear solid mechanics. Part I: Formulation
Cervera M., Chiumenti M. and Codina R.
Computer Methods in Applied Mechanics and Engineering, Vol. 199, (2010), pp. 2559-2570

Finite element modeling of multi-pass welding and shaped metal deposition processes
Chiumenti M., Cervera M., Salmi A., Agelet de Saracibar C., Dialami N. and Matzui K.
Computer Methods in Applied Mechanics and Engineering, Vol. 199, (2010), pp. 2343-2359

On the Numerical Modeling of the Thermo-mechanical Contact for Casting Analysis
Chiumenti M., Agelet de Saracibar C. and Cervera M.
Journal of Heat Transfer, Vol. 130, #6, (2008), pp. 061301 (10 pages)