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First name: Nabil Ahmed



Birthday: October 22nd, 1965.

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Education and Current Position

1986-1990: Graduated in Physics from the University of Chouaïb Doukali, El jadida (MOROCCO)

1990-1992: Master Graduate in Optoelectronic's From the University of Liège
Honors thesis: "Thermal conductivity: application to magnetic rare-earth compounds"

1992-1997: PhD student in the Solid State Group of the University of Liège. Thesis research supervised by Professor Marcel Ausloos
Thesis title: "Theory of the Thermal Conductivity of Metallic Magnetic Systems: The case of $REAl_2$ compounds" obtained on 29th January 1998.

February 1998 – June 2001: Postdoctoral Researcher in the department of Electrical Engineering and Computer Science (ELAP, Electrotechnics)

July 2001 – May 2007: Research Associate in the department of Electrical Engineering and Computer Science (ELAP, Electrotechnics)

May 2007 – Present: Research Director in the department of Aerospace and Mechanics (MMS)

July 2004 – December 2014: Research Associate, Thixo Unit Director (Pôle d'Ingénierie des Matériaux de Wallonie, University of Liège)

January 2015 – Present: Research Director, VERDIR project coordinator and COST GH support

Mai – June 2015: Training on additive Manufacturing at the Aristotle University of Thessaloniki

March 2016 – Present: Business development Unit Manager, Energy, Recycling and Advanced Manufacturing

Research Interests

Sustainable growth
Renewable energies
Energy efficiency
Advanced Manufacturing
Recycling

Teaching Interests

Manufacturing processes and systems
Fluid dynamics
Applied thermodynamics

Publications:

- 1/ **A. Rassili** and M. Ausloos, **Theory of the thermal conductivity of RE Al₂ compounds**, J. Magn. Magn. Mat. 147 (1995) 341
- 2/ **A. Rassili** and M. Ausloos, **Theory of the thermal conductivity of metallic localized spin compounds in a magnetic field**, J. Magn. Magn. Mat. 163 (1996) 153
- 3/ **A. Rassili** and M. Ausloos, **Critical behavior of the thermal conductivity near a magnetic phase transition** in Magnetic Hysteresis in Novel Magnetic Materials, Series E: Applied Sciences - vol. 338 ed. G. C. Hadjipanayis, (Kluwer Academic Publishers, Dordrecht, 1997) p. 187.
- 4/ **A. Rassili**, K. Durczewski and M. Ausloos, **Crystal field effects on the thermal conductivity of localized spin metallic compounds**, Physical Review B 58 (1998) 5665 - 5671.
- 5/ P. Dular, **A. Rassili**, B. Meys, F. Henrotte, H. Hedia, A. Genon and W. Legros **A software environment for the treatment of discrete coupled problems and its application to magneto-thermal coupling**, the 4th International Workshop on « Electric and Magnetic Fields, from numerical models to industrial applications » Marseilles 12-15 May 1998 pp. 547-552
- 6/ **A. Rassili**, Ch. Geuzaine, W. Legros, M. Bobadilla, A. Cucatto, M. Robelet, S. Abdelfattah, J. Dohmann and Ch. Hornradt **Simulation of adequate Inductive Heating Parameters and The Magneto-Thermal coupling involved in the SSM Processing of Steels**, the 6th International Conference on Semi-Solid Processing of Alloys and Composites, Torino, September 27-29 (2000)
- 7/ **A. Rassili**, Ch. Geuzaine, P. Dular, W. Legros, M. Bobadilla, A. Cucatto, M. Robelet, S. Abdelfattah, J. Dohmann and Ch. Hornradt **Magneto-Thermal Coupling Simulations “Application to the SSM Processing of Steels”**, the 5th International Symposium on Electric and Magnetic Fields, 17-19 May 2000, Gent Belgium.

8/ E. Doege, S. Abdelfattah, Ch. Hornradt, J. Dohmann, M. Robelet, **A. Rassili**, A. Cucatto and E. Bobadilla

Thixoforging of Steels - Inductive Reheating and Basic Investigations, the 6th International Conference on Semi-Solid Processing of Alloys and Composites, Torino, September 27-29 (2000)

9/ **A.Rassili**, C. Geuzaine, W.Legros, M.Bobadilla, A.Cucatto, M.Robelet, J. Demurger, S.Abdelfattah, J.Hass, S.Andersson, B. Speisser ***Numerical Simulations and Experimental Investigations of the Semi-Solid Metal Processing of Steels***, the 7th International Conference on Semi-Solid Processing of Alloys and Composites S2P September 2002 in Tsukuba, Japan

10/ **A.Rassili**, L. Adam, W.Legros, D. Fischer, A.Cucatto and M.Robelet, ***Improvement of materials and tools for thixoforging of steels***, the 8th International Conference on Semi-Solid Processing of Alloys and Composites S2P September 2004 in , Cyprus

11/ D. Fischer, **A.Rassili**, A.Cucatto and M.Robelet, ***Introduction of a fully automated process for the production of automotive steel parts***, the 8th International Conference on Semi-Solid Processing of Alloys and Composites S2P September 2004 in , Cyprus

12/ M. Robelet, **A.Rassili**, D. Fischer and A.Cucatto, ***Determination of the semi-solid behaviour of steels***, the 8th International Conference on Semi-Solid Processing of Alloys and Composites S2P September 2004 in , Cyprus

13/ J. Lecomte-Beckers , **A. Rassili**, and M. Robelet, ***Characterisation of thermophysical properties of semi-solid steels for thixoforging***, the 8th International Conference on Semi-Solid Processing of Alloys and Composites S2P September 2004 in , Cyprus

14/ **A. Rassili**, P. Dular, M. Robelet, J. Demeurger and D. Fischer, Semi-solid forming of steels, the 8th Esaform Conference on Material Forming (April 2005), Romania

15/ **A. Rassili**, C. Geuzaine, P. Dular, M. Robelet, J. Demeurger and D. Fischer, ***Semi-solid metal forming, modelling and investigations***, the Coupled Problems conference (May 2005), Greece

16/ J. Lecomte-Beckers, **A. Rassili**, M. Robelet, C. Poncin and R. Koeune, ***Determination of solidification parameters used for the prediction of the thixoformability of several steel alloys***, Solid State Phenomena, Vols. 116-117 (2006) pp 54-57

17/ M. Robelet, **A. Rassili** and D. Fischer, ***Steel grades adapted to the thixoforging process: metallurgical structures and mechanical properties***, Solid State Phenomena, Vols 116-117 (2006) pp 712-716

18/ D. Fischer, A. Rassili and M. Robelet, ***Series Production of thixoforged Steel Parts***, Solid State Phenomena, Vols 116-117 (2006) pp 686-689

- 19/ G. Vaneetveld, **A. Rassili**, J. Lecomte-Beckers, J.-C. Pierret, Z. Fan and H. V. Atkinson, ***Thixoforging of 7075 aluminium alloys***, Solid State Phenomena, Vols 116-117 (2006) pp 762-765
- 20/ J.-C. Pierret, **A. Rassili** and P. Cézard, ***Simulation of semi-solid thixoforging, comparison of classical and micro-macro modelling***, Solid State Phenomena, Vols 116-117 (2006) pp 618-621
- 21/ **A. Rassili**, M. Robelet and D. Fischer, ***Thixoforging of Carbon Steels: Inductive heating and process control***, Solid State Phenomena, Vols 116-117 (2006) pp 717-720
- 22/ J. Lecomte-Beckers, **A. Rassili**, M. Carton, M. Robelet and R. Koeune, ***Study of the liquid fraction and thermophysical properties of semi-solid steels and application to the simulation of inductive heating for thixoforging***, Advanced Methods in Materials Forming pp 321-347, (2007), Ed. Banabic D. ISBN 978-3-540-69844-9 (Springer)
- 23/ **A. Rassili**, M. Robelet, R. Bigot and D. Fischer, ***Thixoforging of Steels and Industrial Applications***, the 10th Esaform Conference on Material Forming (April 2007), Saragoza, Spain
- 24/ P. Cezard, R. Bigot, E. Becker, S. Mathieu, J.-C. Pierret and **A. Rassili**, ***Thixoforging of Steel: New Tools Conception to Analyse Thermal Exchanges and Strain Rate Effects***, the 10th Esaform Conference on Material Forming (April 2007), Saragoza, Spain
- 25/ **A. Rassili**, J.-C. Pierret, P. Cezard, R. Bigot and V. Favier, ***Simulation of thixoforging: comparison of different constitutive equations***, the Coupled Problems conference (May 2007), Ibiza, Spain
- 26/ J. C. Pierret, **A. Rassili**, G. Vaneetveld, J. Lecomte-Beckers, P. Cezard and R. Bigot, ***Steel thixoforging, influence of forming parameters on the microstructure***, Springer Editions, International Journal of Material Forming (2008), Vol.1, pp 1011-1014
- 27/ G. Vaneetveld, **A. Rassili**, J.-C. Pierret and J. Lecomte-Beckers, ***Extrusion tests of 7075 aluminium alloy at high solid fraction***, Springer Editions, International Journal of Material Forming (2008), Vol.1, pp 1019-1022
- 28/B.A. Behrens, D. Fischer, **A. Rassili**, "Strategies for re-Heating Steel Billets for Thixoforging", **Solid State Phenomena** Vols. 141-143 (2008) pp 121-126
- 29/J.-C. Pierret, **A. Rassili**, G. Vaneetveld, J. Lecomte-Beckers, R. Bigot, "Robustness of a Thixoforging Production Line", **Solid State Phenomena** Vols. 141-143 (2008) pp 207-212
- 30/**A. Rassili**, M. Robelet, R. Bigot, "Thixoforging of Steel : Parameters and Means for Industrialization", **Solid State Phenomena** Vols. 141-143 (2008) pp 213-218
- 31/G. Walmag, P. Naveau, **A. Rassili**, M. Sinnave, "A New Processing Route for As-Cast Thixotropic Steel", **Solid State Phenomena** Vols. 141-143 (2008) pp 415-420

32/A. **Rassili**, J.C. Pierret, G. Vaneetveld, P. Cezard, R. Bigot, M. Robelet, "Influence of the Pre and Post Treatment Operations on the Properties of the Thixoformed Steel Parts", **Solid State Phenomena** Vols. 141-143 (2008) pp 689-694

33/G. Vaneetveld, **A. Rassili**, J.C. Pierret, J. Lecomte-Beckers, "Improvements in Thixoforging of 7075 Aluminium Alloys at High Solid Fraction", **Solid State Phenomena** Vols. 141-143 (2008) pp 707-712

34/G. Vaneetveld, **A. Rassili**, H. V. Atkinson, "Influence of Parameters during Induction Heating Cycle of 7075 Aluminium Alloys with RAP Process", **Solid State Phenomena** Vols. 141-143 (2008) pp 719-724

35/G. Vaneetveld, **A. Rassili**, J. Lecomte-Beckers, H.V. Atkinson, Electron backscattered diffraction of aluminium alloy 7075 samples after heat treatment, **Springer Editions Int J Mater Form** (2009) Vol. 2 Suppl 1: pp. 771-780

36/J.C. Pierret, **A. Rassili**, G. Vaneetveld, J. Lecomte-Beckers, and G. Walmag "Influence of the chemical composition on the Thixoforability of steels", **Springer Editions Int J Mater Form** (2009) Vol. 2 Suppl 1: pp 765-768

37/J.C. Pierret, **A. Rassili**, G. Vaneetveld, R. Bigot, J. Lecomte-Beckers, "Friction coefficients evaluation for steel thixoforging" **Springer Editions Int. J Mater Form** (2010) Vol.3

38/G. Vaneetveld, **A. Rassili**, J.C.Pierret, J.Lecomte-Beckers, Benefits of thixoforging hot-crack-sensitive aluminium alloys at high solid fraction, **Springer Editions Int. J Mater Form** (2010) Vol.3.

39/H. V. Atkinson, **A. Rassili**, "A Review of the Semi-Solid Processing of Steel", Springer Editions *Int. J Mater Form* (2010) Vol.3.

40/ A.FORN, G. VANEETVELD, J.C. PIERRET, S. MENARGUES, M.T. BAILE, M. CAMPILLO, **A. RASSILI** "Thixoextrusion of A357 aluminium alloy" *Transactions of Nonferrous Metals Society of China, Volume 20, Supplement 3, September 2010, Pages s1005-s1009*

41/G. VANEETVELD, **A. RASSILI**, J.C. PIERRET, J. LECOMTE-BECKERS "Conception of tooling adapted to thixoforging of high solid fraction hot-crack-sensitive aluminium alloys" *Transactions of Nonferrous Metals Society of China, Volume 20, Issue 9, September 2010, Pages 1712-1718*

42/**A. RASSILI**, H.V. ATKINSON "A review on steel thixofforming" *Transactions of Nonferrous Metals Society of China, Volume 20, Supplement 3, September 2010, Pages s1048-s1054*

43/J.C. PIERRET, **A. RASSILI**, G. VANEETVELD, J. LECOMTE-BECKERS "Stability of steel thixofforming process" *Transactions of Nonferrous Metals Society of China, Volume 20, Supplement 3, September 2010, Pages s937-s942*

44/A. **RASSILI**, J.C. PIERRET, G. VANEETVELD, J. HALLEUX, G. WALMAG, J. LECOMTE-BECKERS "X38CrMoV5 hot-work tool steel as tool material for thixoforming of steel: Numerical and experimental evaluation" *Transactions of Nonferrous Metals Society of China, Volume 20, Supplement 3, September 2010, Pages s713-s718*

45/K.P. SOLEK, **A. RASSILI**, J.C. PIERRET, G. VANEETVELD "Characterization of thixoforming process of 100Cr6 steel" *Transactions of Nonferrous Metals Society of China, Volume 20, Supplement 3, September 2010, Pages s916-s920*

46/A. **Rassili**, S. Falzone, J. Lecomte-Beckers, "Tooling materials and solutions for thixoforming of steel", *Solid State Phenomena Vols. 192-193 (2012) pp 527-532*

47/ **A. Rassili**, J. Lecomte-Beckers, "Tooling materials and solutions for thixoforming of steel", the Coupled Problems conference (May 2013), Ibiza, Spain

48/ **A. Rassili**, J. Lecomte-Beckers, Tooling Materials and Solutions for Thixoforming Steel: A key to the process industrialization, *Solid State Phenomena Vols. 217-218 (2015) pp 374-380*

Books:

Instrument Engineers Handbook: Process Software and Digital Networks, Fourth Edition: Control Systems and Automation in Steel Thixoforming Production (chapter 6), ISBN 9781439817766 CRC Press (2011)

Thixoforming Steel: Editors Helen Atkinson and Ahmed RASSILI, ISBN 978-3-8322-9133-4, Shaker Verlag Publications (2010).

NVH Analysis Techniques Techniques for Design and Optimization of Hybrid and Electric Vehicles: Editors Nuria Campillo-Davo and Ahmed Rassili, ISBN 978-3-8440-4356-3, Shaker Verlag Publications (2016).

Academic activities

November 1996: Invited researcher at the Institute of Low Temperatures, Wrocław, Poland.

1998/1999: Electrotechnics laboratories monitor at ELAP, University of Liège.

2000/2004: Electrotechnics laboratories manager at ELAP, University of Liège.

1998 – 2001: financial and technical manager of two European Brite Projects under contracts: BRPR-CT.97-0504 and BE-CT98-0632 on thixoforming of steels: basic research and mass production.

2001 – 2002: Negotiation and elaboration of an European project in the Fifth Framework Program "Competitive and Sustainable Growth" under contract: GRD1-2001-40260 Adapted steel parts.

2002 – 2006: financial and technical manager of an European Project in the Fifth Framework Program "Competitive and Sustainable Growth" under contract: G5RD-CT-2002-00684 Adapted steel parts.

2002 – 2006: financial and technical manager of an European Project in the Fifth Framework Program "Competitive and Sustainable Growth" under contract: G4RD-CT-2002-00860 "Virtual evaluation and robust detection for engine component non destructive Testing"

Since September 2004: Coordinator and Chair of the European Thixosteel Consortium.

Since September 2004: Director of the research unit on Thixoforming of the Engineering School of the University of Liège, "TU2".

July 2006 - January 2011: Chairman of the COST action 541 “Thixosteel”

MC and WG Member of the COST action 542 “Supercapacitors”

2002 – 2009: Professor of Fluid Mechanics (Master degree), Applied Thermodynamics (Master degree) and General Electricity (Bachelor) at Institut Saint Laurent (evening courses)

October 2009 – December 2014: Member of the University of Liège Board of Directors and Executive Bureau

Since October 2000: Member of the Engineering School Council

Since October 2010: Lecturer of Applied Thermodynamics Course and Materials and Processes for automotive applications.

October 2013 – October 2014: Fly-in Professor of Fluid Mechanics and Applied Thermodynamics at the German University of Technology of Oman.

Since December 2014: Fly-in Professor of Applied Thermodynamics at EUROMED University, Fes, Morocco

May 2011 – June 2015: MC, WG member and STSM coordination of the COST MP 1004 “Hybrid Energy Storage Devices and Systems for Mobile and Stationary Applications”

Since April 2012: MC, WG member, Grant Holder and Short Time Scientific Missions Coordinator of COST Action TU1105 “NVH analysis techniques for design and optimization of hybrid and electric vehicles”

Symposia and Conferences

July 1994: International Conference on Magnetism ICM94 Wroclaw, Poland

1995-1997: *Belgian Society of Physics*

June 1996: NATO, advanced studies institute, Mykonos, Greece

Mai 2000: 5th International Symposium on Electric and Magnetic Fields, Gent Belgium.

September 2000: 6th International Conference on Semi-Solid Processing of Alloys and Composites, Torino, Italy

September 2002: 7th International Conference on Semi-Solid Processing of Alloys and Composites, Tsukuba, Japan

September 2004: 8th International Conference on Semi-Solid Processing of Alloys and Composites, Limassol, Cyprus.

April 2005: 8th Esaform Conference on Material Forming, Cluj, Romania

May 2005: Coupled Problems conference, Santorini, Greece

April 2006: 9th Esaform Conference on Material Forming, Glasgow, United Kingdom.

September 2006: 9th International Conference on Semi-Solid Processing of Alloys and Composites, Busan, South Korea

April 2007: 10th Esaform Conference on Material Forming, Saragoza, Spain

May 2007: 2nd Coupled Problems conference, Ibiza, Spain

April 2008: 11th Esaform Conference on Material Forming, Lyon, France

September 2008: 10th International Conference on Semi-Solid Processing of Alloys and Composites, Liège (BE) – Aachen (DE), Co-Chairman

April 2009: 12th Esaform Conference on Material Forming, Twente, the Netherlands

April 2010: 13th Esaform Conference on Material Forming, Brescia, Italy

September 2010: 11th International Conference on Semi-Solid Processing of Alloys and Composites, Bijing (China), Member of the scientific committee and invited lecturer

April 2011: 14th Esaform Conference on Material Forming, Belfast Ireland

June 2011: Coupled Problems conference, Kos, Greece

October 2012: 12th International Conference on Semi-Solid Processing of Alloys and Composites, Cape Town (South Africa), Member of the scientific committee

June 2013: Coupled Problems conference, Ibiza, Spain

September 2014: 13th International Conference on Semi-Solid Processing of Alloys and Composites, Muscat (Oman), Member of the scientific and organising committee's

November 2014: 17th International Conference on Advances in Materials and Processing Technologies, Dubai (UAE), Invited lecture.

October 2016: 14th International Conference on Semi-Solid Processing of Alloys and Composites, Salt Lake City (USA), Chairman of the organizing committee and Member of the scientific and organising committee's

Parallel scientific activities

1996-1999: President of the Moroccan Association of Physicists in Belgium (PHYMABEL)

2000-2001: 1st Vice-president of PHYMABEL

From 1996: Chairman of the scientific committee of PHYMABEL

Organizer of "Journée Scientifique de Physique" JSP

JSP96: Multidisciplinary

JSP97: Multidisciplinary

JSP98: Telecommunications on the eve of 21st century

JSP2000: Energy, Environment and Health

Sponsored by the University of Liège and the French Community of Belgium

June 2004 – 2009: President and Vice-President of MASTeR association (Moving Ahead Scientific and Technological Research)

Since September 2004: Member of the Scientific Committee of the International Conference on the Semi-Solid Processing of Alloys and Composites: S2P

September 2006 – September 2008: Co-Chairmen of the Scientific Committee of the International Conference on the Semi-Solid Processing of Alloys and Composites: S2P

Member of the Coordination Group of the minisymposium on Semi-Solid processing of ESAFORM 2005 – 2016 conferences.

Co-Chairmen of the organizing committee of the 10th International Conference on Semi-Solid Processing of Alloys and Composites, September 2008, (Euregio, Aachen-Liège)

September 2005 – September 2014: Member of the Management Committee of "Pôle d'Ingénierie des Matériaux de Wallonie" PiMW

2000: Formation de sensibilisation à la création d'entreprises du Professeur Surlemont (ULg).

June 2009 – Present: Project Advisor in Solar energy, energy efficiency and sustainable growth. ELIOSYS SA.

September 2014 – November 2016: Co-Chairmen of the Scientific Committee of the International Conference on the Semi-Solid Processing of Alloys and Composites: S2P 2016 organised in conjunction with MS&T 2016

Reviewer of many international journals:

- Journal of Materials Processing Technology
- Ironmaking and Steelmaking: Processes, Products and Applications
- Journal of Microscopy
- Simulation Modelling Practice and Theory

PhD Supervision:

Grégory Vaneetveld: Thixoforming of Aluminium Alloys. September 2009

Jean-Christophe Pierret: Thixoforming of Steels and modelling. September 2009

Research Grants

2005 – Present ~ 5.5M €

Language

Arabic, French and English (Fluent)

Dutch (smattering)

Computing and Programming in several language's and operating systems

Easy manipulation several software's

Hobbies:

Walking, Movies and Music