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School: Mechanical and Aerospace Engineering (MAE)

Division: Manufacturing Engineering

PUBLICATIONSJournal papers (peer-reviewed): **18**Edited proceedings (peer-reviewed): **13**Conference papers (others): **22***Journal papers (peer-reviewed)*

1. X.P. Zhang, T.H. Yang, **S. Castagne**, C.F. Gu and J.T. Wang, "Proposal of Bond Criterion for Hot Roll Bonding and its Application", *Materials and Design*, Vol. 32 No. 4, pp. 2239-2245 (2011)
2. X.P. Zhang, **S. Castagne**, T.H. Yang, C.F. Gu and J.T. Wang, "Entrance Analysis of 7075 Al/Mg-Gd-Y-Zr/7075 Al Laminated Composite Prepared by Hot Rolling and its Mechanical Properties", *Materials and Design*, Vol. 32 No. 3, pp. 1152-1158 (2011)
3. X.P. Zhang, T.H. Yang, **S. Castagne** and J.T. Wang, "Microstructure, Bonding Strength and Thickness Ratio of Al/Mg/Al Alloy Laminated Composites Prepared by Hot Rolling", *Materials Science and Engineering A*, Vol. 528 No. 4-5, pp. 1954-1960 (2011)
4. X.P. Zhang, **S. Castagne**, X.F. Luo and C.F. Gu, "Effects of Extrusion Ratio on the Ratcheting Behavior of Extruded AZ31B Magnesium Alloy under Asymmetrical Uniaxial Cyclic Loading", *Materials Science and Engineering A*, Vol. 528 No. 3, pp. 838-845 (2011)
5. X.P. Zhang, **S. Castagne**, C.F. Gu and X.F. Luo, "Effects of Annealing Treatment on the Ratcheting Behavior of Extruded AZ31B Magnesium Alloy under Asymmetrical Uniaxial Cyclic Loading", *Journal of Materials Science*, Vol. 46 No. 4, pp. 1124-1131 (2011)
6. J. Liu, M.J. Tan, Y. Aue-u-lan, A. Jarfors, K.S. Fong and **S. Castagne**, "Superplastic-Like Forming of non-Superplastic AA5083 Combined with Mechanical Pre-Forming", *International Journal of Advanced Manufacturing Technology*, Vol. 52 No. 1-4, pp. 123-129 (2011)
7. J. Liu, M.J. Tan, A. Jarfors, Y. Aue-u-lan and **S. Castagne**, "Formability in AA5083 and AA6061 Alloys for Light Weight Applications", *Materials and Design*, Vol. 31 Suppl. 1, pp. S66-S70 (2010)
8. **S. Castagne**, R. Curran and P. Collopy, "Implementation of Value-Driven Optimisation for the Design of Aircraft Fuselage Panels", *Int. J. Production Economics*, Vol. 117 No. 2, pp. 381-388 (2009)
9. R. Curran, **S. Castagne**, A. Rothwell, M. Price, A. Murphy and S. Raghunathan, "Uncertainty and Sensitivity Analysis in Aircraft Operating Costs in Structural Design Optimization", *Journal of Aircraft*, Vol. 46 No. 6, pp. 2145-2155 (2009)
10. **S. Castagne**, R. Curran, A. Rothwell, M. Price, E. Benard and S. Raghunathan, "A Generic Tool for Cost Estimating in Aircraft Design", *Research in Engineering Design*, Vol. 18 No. 4, pp. 149-162 (2008)
11. R. Curran, **S. Castagne**, J. Early, M. Price, S. Raghunathan, J. Butterfield and A. Gibson, "Aircraft Cost Modelling Using the Genetic Causal Technique within a Systems Engineering Approach", *Aeronautical Journal*, Vol. 111 No. 1121, pp. 409-420 (2007)
12. R. Curran, G. Gomis, **S. Castagne**, J. Butterfield, T. Edgar, C. Higgins and C. McKeever, "Integrated Digital Design for Manufacture for Reduced Life Cycle Cost", *Int. J. Production Economics*, Vol. 109 No. 1-2, pp. 27-40 (2007)
13. **S. Castagne**, D. Talamona and A.M. Habraken, "A Damage Constitutive Law for Steel at Elevated Temperature: Identification of the Parameters", *Int. J. Forming Processes*, Vol. 10 No. 1, pp. 23-43 (2007).
14. R. Curran, A. Rothwell and **S. Castagne**, "Numerical Method for Cost-Weight Optimisation of Stringer-Skin Panels", *Journal of Aircraft*, Vol. 43 No. 1, pp. 264-274 (2006)

15. R. Curran, M. Price, S. Raghunathan, E. Benard, S. Crosby, **S. Castagne** and P. Mawhinney, "Integrating Aircraft Cost Modelling into Conceptual Design", *Concurrent Engineering: Research and Applications*, Vol. 13 No. 4, pp. 321-330 (2005)
16. D. Talamona, **S. Castagne** and J.M. Franssen, "Nonlinear Thin Shell Finite Element for Steel and Concrete Structures Subjected to Fire: Verification and Validation", *Journal of Applied Fire Science*, Vol. 12 No. 1, pp. 65-81 (2003)
17. **S. Castagne**, A. M. Habraken, S. Cescotto, "Application of a Damage Model to an Aluminum Alloy", *Int. J. Damage Mechanics*, Vol. 2 No. 1, pp. 5-30 (2003)
18. M. Remy, **S. Castagne** and A.M. Habraken, "Progress in Microscopic Modelling of Damage in Steel at High Temperature", *Int. J. Forming Processes*, Vol. 5 No. 2-3-4, pp. 449-459 (2002)

Edited proceedings (peer-reviewed)

1. B. Nagarajan, **S. Castagne**, Z.K. Wang, C.K. Lai, X.C. Wang and H.Y. Zheng, "The Effects of Ablative Coating Thickness at Various Laser Intensities and Multiple Laser Pulses on Thin Copper Sheet Formability in High Strain Rate Laser Shock Forming", *AIP Conference Proceedings*, accepted (2011)
2. C. Huang, C.V. Lim and **S. Castagne**, "Investigation of the Workability and Response of Ti-6Al-4V Titanium alloys at Lower Elevated Temperature and Higher Strain Rate", *AIP Conference Proceedings*, accepted (2011)
3. J. Liu, M.J. Tan, **S. Castagne**, Y. Aue-u-lan, A.E.W. Jarfors, K.S. Fong and E. Bayraktar, "Finite Element Modeling of a Non-isothermal Superplastic-like Forming Process", *AIP Conference Proceedings*, Vol. 1315, pp. 377-382 (2011)
4. C. Keller, M. Afteni, M. Banu, A.M. Habraken, E. Hug, **S. Castagne** and L. Duchene, "Influence of Surface Effect on Nickel Micro Deep Drawing Process", *AIP Conference Proceedings*, Vol. 1252, pp. 1025-1030 (2010)
5. C. Keller, M. Bettaieb, M. Afteni, M. Banu, A.M. Habraken, E. Hug, **S. Castagne** and L. Duchene, "Effect of Decrease in Sample Dimensions on Plasticity: Application to Nickel Microforming", *Metal Forming 2010*, pp. 1173-1176 (2010)
6. M. Taureza, **S. Castagne** and Y. Aue-u-lan "Improving the Sensitivity of T-Shape Test to Friction Conditions for the Evaluation of Friction Behaviour in Microforming", *Key Engineering Materials*, Vol. 447-448, pp. 386-390 (2010)
7. X.P. Zhang and **S. Castagne**, "FEM Investigation of Particle Behavior in Particulate Reinforced Metal-matrix Composites during Micro-Extrusion", *Key Engineering Materials*, Vol. 447-448, pp. 417-421 (2010)
8. J. Liu, M.J. Tan, **S. Castagne**, Y. Aue-u-lan, K.S. Fong and A. Jarfors, "Investigation of Process Parameters in Superplastic Forming of Mechanical Pre-Formed Sheet by FEM", *Key Engineering Materials*, Vol. 447-448, pp. 437-441 (2010)
9. R. Schwartz, **S. Castagne** and A.M Habraken, "Numerical Study to Identify the Material Parameters of a Damage Model", *Computer Methods In Materials Science*, Vol. 7 No.2, pp. 237-242 (2007)
10. R. Curran, G. Gomis, A. Murphy and **S. Castagne**, "Knowledge Driven Optimization and Finite Element Analysis of Aircraft Structures", *Frontiers in Artificial Intelligence and Applications*, Vol. 143, pp. 643-662 (2006)
11. **S. Castagne**, F. Pascon, G. Blès and A.M. Habraken, "Developments in Finite Element Simulations of Continuous Casting", *Journal de Physique IV*, Vol. 120, pp. 447-455 (2004)
12. **S. Castagne**, M. Remy and A.M. Habraken, "Development of a Mesoscopic Cell Modelling the Damage Process in Steel at Elevated Temperature", *Key Engineering Materials*, Vol. 233-236, pp. 145-150 (2003)
13. J.F. Charles, **S. Castagne**, L. Zhang, A.M. Habraken, S. Cescotto, "Numerical Modeling of the Forging Process of Rolls for Rolling Mills", *Metal Forming 2000*, pp. 625-631 (2000)

Conference papers (others)

1. Y.S. Low, G. Chen, J. Zhao and **S. Castagne**, "The Effects of Gate Types and Gate Position for Injection Molding of Polymeric Microfluidic Chip" in *Proc. The Second Conference on Advances in Microfluidics and Nanofluidics & Asia-Pacific International Symposium on Lab on Chip*, Singapore (2011)
2. J. Liu, M.J. Tan, Y. Aue-u-lan, A.E.W. Jarfors, K.S. Fong, and **S. Castagne**, "Use of Mechanical Preforming for Superplastic Forming of non-Superplastic Alloys", in *Proc. International Conference on Advances in Materials and Processing Technologies*, Kuala Lumpur, Malaysia (2009)
3. D. Talamona, N. Lopes, P. Vila Real, **S. Castagne** and J.M. Franssen, "Comparison between EC3 and the Original Proposal for Beam-Columns in Case of Fire", in *Proc. Eurosteel 2008, 5th European Conference on Steel and Composite Structures*, Graz, Austria, pp. 983-988 (2008)
4. D. Talamona, **S. Castagne**, N. Lopes, P. Vila Real and J.M. Franssen, "Comparative Study of Analytical Formulae for the Fire Resistance of Steel Beam-Columns", in *Proc. 5th International Conference Structures in Fire (SiF '08)*, Singapore, pp. 101-112 (2008)
5. R. Curran, J. Butterfield, R. Collins, **S. Castagne**, Y. Jin, M. Francis, J., Darlington and R. Burke, "Digital Lean Manufacturing (DLM) for Competitive Advantage", *Collection of Technical Papers - 7th AIAA Aviation Technology, Integration, and Operations Conference*, Vol. 2, pp. 1745-1761 (2007)
6. R. Curran, G. Gomis, A. Murphy, **S. Castagne**, J. Butterfield and C. McKeever, "Digital Design Synthesis of Virtual Lean Manufacture", *Collection of Technical Papers - 45th AIAA Aerospace Sciences Meeting*, Vol. 10, pp. 7136-7151 (2007)
7. R. Curran, G. Gomis, **S. Castagne**, J. Butterfield, T. Edgar, C. Higgins and C. McKeever, "Integrated Digital Design for Manufacture for Reduced Life Cycle Cost" in *Proc. SAE Aerospace Manufacturing & Automated Fastening Conference*, Toulouse, France (2006)
8. **S. Castagne**, R. Curran, M. Price, P. Collopy, A. Murphy and S. Raghunathan, "Value Driven Design Optimization of Aircraft Structures", *Collection of Technical Papers - 6th AIAA Aviation Technology, Integration, and Operations Conference*, Vol. 1, pp. 604-611 (2006)
9. M. Price, R. Curran, A. Murphy, S. Raghunathan, J. Early, **S. Castagne**, E. Benard, and B. Crawford, "Integrating Design, Manufacturing and Cost for Trade-Offs on Aircraft Configurations", *Collection of Technical Papers - 6th AIAA Aviation Technology, Integration, and Operations Conference*, Vol. 1, pp. 373-383 (2006)
10. **S. Castagne**, R. Curran, A. Rothwell and A. Murphy, "Development of a Precise Manufacturing Cost Model for the Optimisation of Aircraft Structures", *Collection of Technical Papers - AIAA 5th ATIO and the AIAA 16th Lighter-than-Air Systems Technology Conference and Balloon Systems Conference*, Vol. 3, pp. 1327-1336 (2005)
11. R. Curran, J. Early, M. Price, **S. Castagne**, P. Mawhinney, J. Butterfield, and S. Raghunathan, "Economics Modelling for Systems Engineering in Aircraft", *Collection of Technical Papers - AIAA 5th ATIO and the AIAA 16th Lighter-than-Air Systems Technology Conference and Balloon Systems Conference*, Vol. 1, pp. 600-618 (2005)
12. **S. Castagne** and A.M. Habraken, "Identification of the Parameters of a Damage Constitutive Law for Steel at Elevated Temperature", Key Note Paper, in *Proc. 8th ESAFORM Conference on Material Forming*, Editor: D. Banabic, Cluj-Napoca, Romania, pp. 29-32 (2005)
13. R. Curran, **S. Castagne**, A. Rothwell, M. Price and A. Murphy, "Integrating Manufacturing Cost and Structural Requirements in a Systems Engineering Approach to Aircraft Design", *Collection of Technical Papers - AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Vol. 5, pp. 3283-3300 (2005)
14. **S. Castagne**, F. Pascon, J. Lecomte-Beckers and A.M. Habraken, "Mesoscopic Model of Intergranular Cracks in Low Carbon Steel during Cooling of Continuous Casting", in *Proc. 2nd International Conference on Thermomechanical Processing of Steel*, Editor: M.Lamberigts - Stahl Eisen, Liège, Belgium, pp. 233-240 (2004)
15. R. Curran, A. Rothwell and **S. Castagne**, "A Numerical Method for Cost-Weight Optimisation of Stringer-Skin Panels", *Collection of Technical Papers - AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Vol. 7, pp. 5262-5277 (2004)

16. R. Curran, S. Raghunathan, M. Price, A. Kundu, E. Benard, **S. Castagne**, P. Mawhinney, S. Crosby and J. Early, "A Methodology for Integrated Cost Engineered Systems Within Aerospace", *Collection of Technical Papers - AIAA 4th Aviation Technology, Integration, and Operations Forum,ATIO*, Vol. 1, pp. 58-71 (2004)
17. **S. Castagne**, F. Pascon, G. Miesse and A.M. Habraken, "Finite Element Analysis of Continuous Steel Casting", *Luxfem International Conference on Finite Element for Process*, Luxembourg, Luxembourg (2003)
18. **S. Castagne** and A.M. Habraken, "Investigation of Transverse Cracks Initiation in Continuous Steel Casting Using a Finite Element Approach", in *Proc. International Conference on Computational & Experimental Engineering and Sciences*, Corfu, Greece (2003)
19. M. Remy, **S. Castagne** and A.M. Habraken, "Progress in Microscopic Modelling of Damage in Steel at High Temperature", *4th International Conference on Materials Processing Defects*, Cachan, France (2002)
20. **S. Castagne**, A.M. Habraken, "Development of a Microscopic Damage Model for Steel at High Temperature", in *Proc. 5th National Congress on Theoretical and Applied Mechanics*, Editor: R. Keunings, Louvain-la-Neuve, Belgium, pp. 175-178 (2000)
21. **S. Castagne**, A.M. Habraken, "Application à un Aluminium d'un Modèle Isotrope Elastoplastique Couplé à l'Endommagement", in *Proc. 4^{ème} Colloque National en Calcul des Structures*, Editors: D. Guédra-Degeorges, P. Ladevèze, M. Raous, Teknea, Giens, France, pp. 479-484 (1999)
22. **S. Castagne**, A.M. Habraken, J. Wégria, "Study of the Surface Layer of a Rolled Zinc Sheet", in *Proc. 2nd ESAFORM Conference on Material Forming*, Editor: J.A. Cavas, Guimarães, Portugal, pp. 77-80 (1999)