

## 2007 Scientific Output

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## Book Chapters

1. AGASSANT, J-F.; COVAS, J. A. - **An Overview of Polymer Processing Modelling**, in **Advances in Material Forming, Springer-Verlag**, F. Chinesta, E. Cueto (eds.), Paris, 2007, 37-59.

2. DE MICCO, S.; FRONTINI, P.M., VIANA, J.C. - **Fracture Behaviour of Injection Moulded Polypropylene: the Effect of Processing Conditions** . in POUZADA, A.S; FRONTINI, P.M.; MARTIN, P.J. (Eds.) – **Engineering with Polymers: an Europe – Latin America Research Experience** . Guimarães: Plastinet network, 2007.

3. DENCHEV, Z. - **Biodegradation Studies on Polymer Blends and Composites Comprising Biopolymer** in: **Engineering Biopolymers - Homopolymers, Blends and Composites**, S. Fakirov, D. Bhattacharya (Eds), 2007, Hanser Publishers, p. 799-846, ISBN 978-1-56990-405-3.

4. FERNANDES, C. S., NÓBREGA, M. N. and MAIA, J. M. – **CFD simulation of stirred yoghurt processing in plate heat exchangers**

. In

**Computational Fluid Dynamics in Food Processing**

; Sun, D.-W. (ed.), 2007. pp. 381-402. ISBN 0-8493-9286-1.

5. FERREIRA, J.; FONSECA, C.M., GASPAR-CUNHA, A.; - **Selection of solutions in a multi-objective environment: polymer extrusion a case study**

. In

**Evolutionary Methods For Design, Optimization And Control,**

P. Neittaanmäki, J. Périaux and T. Tuovinen (Eds.), 2007, in press, CIMNE, Barcelona, Spain.

6. GONÇALVES, M.W.; SALMORIA, G.V.; POUZADA, A.S. - Study of the Tribological Properties of Moulds Obtained by Stereolithography. in POUZADA, A.S; FRONTINI, P.M.; MARTIN, P.J. (Eds.) – **Engineering with Polymers: an Europe – Latin America Research Experience** . Guimarães: Plastinet network, 2007.

7. JAKELAITIS, A.; CANEVAROLO JR, S.; COVAS, J.A. - Morphology Development During Melt Preparation of PP/PS Blends, in POUZADA, A.S; FRONTINI, P.M.; MARTIN, P.J. (Eds.) – **Engineering with Polymers: an Europe – Latin America Research Experience** . Guimarães: Plastinet network, 2007.

8. MARTÍNEZ GAMBA, M.; FRONTINI, P.; POUZADA, A.S. - Impact Properties and Microhardness of Glass Reinforced Polypropylene. in POUZADA, A.S; FRONTINI, P.M.; MARTIN, P.J. (Eds.) – **Engineering with Polymers: an Europe – Latin America Research Experience** . Guimarães: Plastinet network, 2007.

9. MATEUS, A.; BÁRTOLO, P. J.; MITCHELL, G.; SILVA, M.; POUZADA, A.S.; PONTES, A.J. – The effect of thermal conductivity of RIM moulds in kinetics cure. In **Advanced Research in Virtual and Rapid Prototyping** ; Bártolo, P.J. et al. (Eds.). London: Taylor and Francis, 2007, p. 389, ISBN 13:978-0-415-41602-3.

10. MORELLI, C.L.; SOUSA, J.A.; POUZADA, A.S. – Assessment of Weld Line Performance of Polypropylene/Talc Mouldings Produced in Hot Runner Injection Moulds, in POUZADA, A.S; FRONTINI, P.M.; MARTIN, P.J. (Eds.) – **Engineering with Polymers: an Europe – Latin America Research Experience** . Guimarães: Plastinet network, 2007.

11. NÓBREGA, J. M. and Carneiro, O. S., Automatic Design in Profile Extrusion: Flow Balance and Cooling. In **Novel Trends in Rheology II**; Zatloukal, M. (ed.), 2007, pp. 124-130. ISBN 978-80-7318-591-6.

12. SENCADAS, V., LANCEROS-MENDÉZ, S.; GREGORIO JR., R.; POUZADA, A.S. - Influence of the Processing Conditions on the Morphology and Crystalline Phases of PVDF in POUZADA, A.S; FRONTINI, P.M.; MARTIN, P.J. (Eds.) – **Engineering with Polymers: an Europe – Latin America Research Experience**.  
Guimarães: Plastinet network, 2007.

13. VAZ, C. M.; CUNHA, A. M. – Soy-Base Materials for Drug-Release Applications. In Fakirov, S.; Bhattacharyya, D. (Eds.) – **Handbook of Engineering Biopolymers: Homopolymers, Blends, and Composites**. Munich: Hanser Publishers, 2007, p. 465–484,. ISBN 978-1-56990-405-3.

### International Publications in Peer-reviewed Journals

1. APOSTOLOV, A.; EVSTATIEV, M.; DENCHEV, Z.; FRIEDRICH, K.; FAKIROV, S. - **Effect of composition on transcristallization with reorientation of polypropylene in drawn PET/PP blend**

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**Journal of Material Science**

, Vol. 42, nº 1 (2007), p. 1245-1250.

2. ARAÚJO, R.; FERNANDES, F. M.; PROENÇA, M. F.; SILVA, C. J. R.; PAIVA, M. C. - The 1,3-Dipolar Cycloaddition Reaction in the Functionalization of Carbon Nanofibers. **Journal of Nanoscience and Nanotechnology**.

Vol.7 (2007), p. 3441–3445.

3. ARAÚJO, R.; PAIVA, M. C.; PROENÇA, M. F.; SILVA, C. J. R. - Functionalization of Carbon Nanofibers by 1,3 - Dipolar Cycloaddition Reactions and its Effect on Composite Properties. **Composite Science and Technology**.

Vol. 67 (2007), p. 806-810.

4. CANTO, L. B.; MANTOVANI, G. L.; COVAS, J. A.; HAGE JR. E.; PESSAN, L. A.; - Phase Morphology Development During Processing of Compatibilized and Uncompatibilized PBT/ABS Blends, **J. Appl. Polym. Sci.**, 104 (1) 102-110 (2007).

5. CARNEIRO; O. S.; OLIVEIRA, M. J.; MARTINS, R. L. – Effect of the Pinch-Off Welding on the Quality of a Food Packaging Bottle. **Plast., Rubber Compos.: Macromol. Eng.** Vol. 36 (2007), p. 173-178.

6. CRUZ, P. J. S., LEON, A. D., NUNES, J. P., LEUNG, C. K. Y. - Design and Mechanical Characterization of Fibre Optic Plate Sensor for Cracking Monitoring. **Sensors and Materials.** Vol. 18 nº 6 (2007), p. 283-299.

7. DENCHEVA, N.; DENCHEV, Z.; OLIVEIRA, MJ.; FUNARI, SS. - Relationship between Crystalline Structure and Mechanical Behavior in Isotropic and Oriented Polyamide 6, **Journal of Applied Polymer Science** Vol. 103 nº2 (2007), p.2242-2252

8. FERNANDES, C. S.; DIAS, R.; NÓBREGA, J. M.; MAIA, J. M. - Laminar flows in chevron-type plate heat exchangers: CFD analysis of tortuosity, shape factor and friction factor. **Chem. Eng. & Processing** . Vol. 46: nº 9 (2007), pp. 825-833.

9. FERNANDES, F. M.; ARAÚJO, R.; PROENÇA, M. F.; SILVA, C. J. R.; PAIVA, M. C. - Functionalization of Carbon Nanofibers by a Diels-Alder Addition Reaction. **Journal of Nanoscience and Nanotechnology.** Vol. 7 (2007), p. 3514–3518.

10. FILIPE, S.; MAIA, J. M.; LEAL, C. R.; MENON, A. R.; DUARTE, A.; CIDADE, M. T. - Influence of processing conditions on the morphological development and final mechanical properties of PP/LCP blends. **J. Appl. Polym. Sci.** Vol. 105: nº 3 (2007), pp. 1521-1532.

11. GHOSH S, VIANA JC, REIS RL, MANO JF – Effect of processing conditions on morphology and mechanical properties of injection-molded poly(L-lactic acid), **Polym. Eng. Sci.**, 47, (2007) p. 1141-1147.

12. GHOSH S.; VIANA J.C, REIS R.L.; MANO, J.F. - The double porogen approach as a new technique for the fabrication of interconnected poly(L-lactic acid) and starch based biodegradable scaffolds - **Journal of Materials Science-Materials In Medicine**. 18 (2), (2007), p. 185-193.

13. GONÇALVES, M.W.; SALMORIA, G.V.; AHRENS, C.H.; POUZADA, A.S. - Study of tribological properties of moulds obtained by stereolithography, **Virtual and Physical Prototyping**, vol. 2:1, (2007). pp. 29-36.

14. GUIMARÃES, D.A., PONTES, A.J., – CAD/CAE techniques to prevent premature failure in direct AIM moulding inserts. In Bártolo, P.J. et al. (Eds.) *Advanced Research in Virtual and Rapid Prototyping*, London: Taylor and Francis, 2007. ISBN 13:978-0-415-41602-3. p. 431-336.

15. HANCIC, A.; KOSEL F.; CAMPOS, A. R.; CUNHA, A. M.; GANTAR, G. – A model for predicting the mechanical properties of wood-plastic composites – A micro-mechanical approach. *Strojnicki Vestnik - Journal of Mechanical Engineering*. Vol. 53, (2007), p. 819-833.

16. LYUDMIL T., VIANA J.C. – Characterization of PET nanocomposites produced by different melt-based production methods, **J. Applied Polym Sci.**, 106 (3), (2007), p. 1659-1669.

17. MACHADO, A. V.; DUARTE, F. M.; BOTELHO, G.; MOURA, I. -Photochemical ageing and processability of life time controlled PS/HIPS blends. **Journal of Applied Polymer Science**. 105, (2007), p. 2930.

18. MACHADO, A. V.; MOURA, I., DUARTE, F. M.; BOTELHO, NOGUEIRA, R.; BRITO, A. G. - Evaluation of Properties and Biodeterioration's Potential of Polyethylene and Aliphatic Polyesters Blends. **Intern. Polymer Processing. Vol.XXII**, 5 (2007).

19. MARTINS, C.I.; CAKMAK, M. - Control the strain-induced crystallization of polyethylene terephthalate by temporally varying deformation rates: A mechano-optical study. **Polymer. Vol. 48** (2007) 2109-2123.

20. MORELLI C.L.; SOUSA, J.A.; POUZADA, A.S. - Assessment of weld line performance of pp/talc moldings produced in hot runner injection moulds, **J. Vinyl Appl. Technology**, vol. 13, (2007). pp. 159-165.

21. MUSAMPA; R. M., ALVES; M. M.; MAIA, J. M. - Phase separation, rheology and microstructure of pea protein-kappa-carrageenan mixtures. **Food Hydrocolloid. Vol. 21** (2007), pp. 92-99.

22. NEVES, I. C.; BOTELHO, G.; MACHADO, A. V.; REBELO, P. - Catalytic degradation of polyethylene: an evaluation of the effect of dealuminated Y Zeolites using thermal analysis. **Materials Chemistry and Physics** . 104, (2007), p. 5.

23. NEVES, I. C.; BOTELHO, G.; MACHADO, A. V.; REBELO, P.; RAMÔA, S., PEREIRA, M.F.R.; RAMANATHAN, A.; PESCARMONA P. Feedstock Recycling of polyethylene over AITUD mesoporous materials. **Polymer Degradation and Stability**. 92, (2007), p.1513.

24. PAIVA, M.C.; AMMAR, I.; CAMPOS, A.R.; CHEIKH, R. B.; CUNHA, A. M. - Alfa fibres: mechanical, morphological and interfacial characterization. **Composites Science and Technology**. Vol. 67 (2007), p. 1132-1138.

25. SILVA CA, VIANA JC, CUNHA AM - Novel morphologies produced by active shear rotation during injection molding, **Macrom. Mat. And Eng.**, 292, (2007), p. 655-665

26. SILVA, C.A; VIANA, J.C.; VAN HATTUM, F.W.; CUNHA, A.M. - Mechanical Properties of Glass Fibre Reinforced Polypropylene Disks Produced by Rotating, Expansion and Compression Injection Moulding, **J. Mat. Sci.**, 42, (2007), p. 5203-5216.

27. SILVA, J. M.; MACHADO, A.V.; MAIA, J. M. – Rheological behaviour of compatibilized and non-compatibilized PA-6/EPM blends. **Rheol. Acta**. Vol. 46: nº 8 (2007), pp. 1091-1097.

28. VIANA J.C.; CUNHA A. M., BILLON N., - Experimental Characterization and Computational Simulations of the Impact Behavior of Injection-Molded Polymers, **Polymer Engineering and Science** , Vol: 47, Issue: 4 (2007), p. 337-346.

### **National Publications in Peer-reviewed Journal**

1. GUIMARÃES, D.A., ALVES, A.; PONTES, A.J. – The use of stereolithography in direct tooling. O Molde (bi-lingual edition in Portuguese and English), vol. 73 (2007), p.10-16.

2. SELADA, A.; POUZADA, A.S. –  $\mu$ EDM – their various options for micromanufacturing /  $\mu$ EDM - As várias opções para micromanufactura, O Molde (bi-lingual edition in Portuguese and English), vol. 75, (2007), p.15-20.

3. SILVA, M.; MATEUS, A.; BÁRTOLO, P.J.; POUZADA, A.S.; PONTES, A.J. – Influence of mould material in products moulded by RIM, O Molde (bi-lingual edition in Portuguese and English), vol. 75, (2007) p.22-26.

4. VELOSA, J. C., NUNES, J. P., ANTUNES, P. J., SILVA, J. F., MARQUES, A. T. - Development of A New Generation of Filament Wound Composite Pressure Cylinders. Ciência & Tecnologia dos Materiais, Vol. 19: nº1/2 (2007), p. 8-13.

### **MSc Theses**

1. COSTA, J.C.P. – **Estudo do Comportamento dos Anti-Estáticos em Espuma de Polietileno não Reticulada** Universidade do Minho, Guimarães.

2. GOMES; A. A. P – **Controlo da Temperatura superficial do molde e o empeno de peças moldadas** , Universidade do Minho, Guimarães.

3. GUIMARÃES; D. J. B. A. – **Cavidades Moldantes Produzidas por Estereolitografia**, Universidade do Minho, Guimarães.

4. HELDER; N – **Analysis of multi-scale techniques and their application to paper** Universidade do Minho, Guimarães.



5. PEREIRA; D. C. C – **Estudo do efeito do aquecimento diferencial na melhoria da distribuição de espessuras de peças obtidas por termoformação assistida por punção**, Universidade do Minho, Guimarães.

6. PEREIRA, J.C.V. – **Reservatórios em Material Compósito para Fluidos sob Pressão**, Universidade do Minho, Guimarães.

7. SANTOS, M. – **Geometric Integration of a molecular dynamics problem with energy dissipation**, Universidade do Minho, Guimarães.