

List of publications of Prof. Antonio J. Gil, ICCP, CAS, PhD, SFHEA

I. Books.

3. J. Bonet, **A.J. Gil** and R.D. Wood, “Nonlinear Solid Mechanics for Finite Element Analysis – Dynamics”, Cambridge University Press, January 2021, [ISBN: 9781316336083](#).
2. J. Bonet, **A.J. Gil** and R.D. Wood, “Nonlinear Solid Mechanics for Finite Element Analysis – Statics”, Cambridge University Press, June 2016, [ISBN: 9781107115798](#).
1. J. Bonet, **A.J. Gil** and R.D. Wood, “Worked examples in Nonlinear Continuum Mechanics for Finite Element Analysis”, Cambridge University Press, October 2012, [ISBN: 9781107603615](#).

II. Invited contribution to books.

4. J. Bonet and **A.J. Gil**, “Numerical simulation of thin sheet superplastic forming processes by the finite element method”, in “*Superplastic forming of advanced metallic materials: methods and applications*”, Woodhead Publishing Limited, Cambridge. Ed. G. Giuliano, July 2011, [ISBN: 9781845697532](#).
3. R.V. Curtis and **A.J. Gil**, “Superplastic Forming of Dental and Maxillofacial Prostheses”, in “*Dental biomaterials: Imaging, testing and modelling*”, Woodhead Publishing Limited, Cambridge. Eds. R V Curtis and T F Watson, March 2008, [ISBN: 9781845692964](#).
2. **A.J. Gil**, “F.E.M. for Prestressed Saint Venant-Kirchhoff Hyperelastic Membranes”. In “*Textile Composites and Inflatable Structures*”, ed. by E. Oñate and B. Kroplin, Springer, 2005, [ISBN: 978-1-4020-3316-2](#).
1. **A.J. Gil**, “Métodos numéricos para el diseño de estructuras traccionadas: membranas y redes de cables”, ed. by University of Granada, 2001, [ISBN: 84-699-6831-9](#).

III. Editorial books and journals.

3. **A.J. Gil** and R. Sevilla, “Proceedings of the 23rd Conference on Computational Mechanics ACME-UK 2015”, Swansea University, [ISBN: 978-0-9567462-4-5](#).
2. **A.J. Gil** and R. Sevilla, “Proceedings of the Institution of Civil Engineers - Engineering and Computational Mechanics”, Volume 169, Issue 3, 2016, [ISSN: 1755-0777](#).
1. **A.J. Gil**, R. Sevilla and B.H.V. Topping, “Proceedings of the 23rd Conference on Computational Mechanics ACME-UK 2015”, Computers and Structures, Special Issue, Volume 181, 2017, [ISSN: 0045-7949](#).

IV. Full papers in refereed journals.

Under review

77. C. Runcie, C.H. Lee, J. Haider, **A.J. Gil** and J. Bonet, “A first order hyperbolic framework for large strain computational contact dynamics”, *International Journal for Numerical Methods in Engineering*.

76. R. Ortigosa, J. Martínez-Frutos and **A.J. Gil**, “Topology optimisation of flexoelectric energy harvesters at finite strains considering a multi-field micromorphic approach”, *Journal of the Mechanics and Physics of Solids*.

75. M. Horak, **A.J. Gil**, R. Ortigosa, M. Kruzik, “A polyconvex transversely-isotropic invariant-based formulation for electro-mechanics: stability, minimisers and computational implementation”, *Computer Methods in Applied Mechanics and Engineering*.

2022

74. P. Refachinho de Campos, **A.J. Gil**, C.H. Lee, M. Giacomini and J. Bonet, “A New Updated Reference Lagrangian Smooth Particle Hydrodynamics algorithm for isothermal elasticity and elastoplasticity”, *Computer Methods in Applied Mechanics and Engineering*, Volume 392, 114680, 2022, doi:10.1016/j.cma.2022.114680.

73. F. Marín, J. Martínez-Frutos, R. Ortigosa and **A.J. Gil**, “Viscoelastic up-scaling rank-one effects in in-silico modelling of electro-active polymers”, *Computer Methods in Applied Mechanics and Engineering*, Volume 389, 114358, 2022, doi: 10.1016/j.cma.2021.114358.

72. M. Franke, R. Ortigosa, J. Martínez-Frutos, **A.J. Gil**, and P. Betsch, “A thermodynamically consistent time integration scheme for non-linear thermo-electro-mechanics”, *Computer Methods in Applied Mechanics and Engineering*, Volume 389, 114298, 2022, doi: 10.1016/j.cma.2021.114298.

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71. J. Martínez-Frutos, R. Ortigosa and **A.J. Gil**, “In-silico design of electrode meso-architecture for shape morphing dielectric elastomers”, *Journal of the Mechanics and Physics of Solids*, 2021, doi: 10.1016/j.jmps.2021.104594.

70. J. Bonet and **A.J. Gil**, “Mathematical models of supersonic and intersonic crack propagation in linear elastodynamics”, *International Journal of Fracture*, 2021, doi:10.1007/s10704-021-00541-y.

69. A. Ghavamian, **A.J. Gil**, C.H. Lee, J. Bonet, T. Heuzé and L. Stainier, “An entropy stable Smooth Particle Hydrodynamics algorithm for large strain thermo-elasticity”, *Computer Methods in Applied Mechanics and Engineering*, Volume 379, 2021, pages 11376 doi:10.1016/j.cma.2021.113736.

68. K.W.Q. Low, C.H. Lee, **A.J. Gil**, J. Haider and J. Bonet, “A parameter-free Total Lagrangian Smooth Particle Hydrodynamics algorithm for inviscid fluid flow problems”, *Computational Particle Mechanics*, 2021, doi: 10.1007/s40571-020-00374-x

67. F. Marín, J. Martínez-Frutos, R. Ortigosa and **A.J. Gil**, “Convex Multi-Variable based Computational Framework for Multilayered Electro-Active Polymers”, *Computer Methods in Applied Mechanics and Engineering*, Volume 374, 2021, pages 113567, doi: 10.1016/j.cma.2020.113567.

66. J. Bonet, C. H. Lee, **A.J. Gil**, A. Ghavamian, “A first order hyperbolic framework for large strain computational solid dynamics. Part III: Thermo-elasticity”, *Computer Methods in Applied Mechanics and Engineering*, , Volume 373, 2021, pages 113505, doi: 10.1016/j.cma.2020.113505.

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65. R. Ortigosa, **A.J. Gil**, J. Martínez-Frutos, M. Franke and J. Bonet, “A new energy-momentum time integration scheme for non-linear thermo-mechanics”, *Computer Methods in Applied Mechanics and Engineering*, Volume 372, 2020, pages 113395, doi: 10.1016/j.cma.2020.113395.

64. G. Barroso, M. Seoane, **A. J. Gil**, P. D. Ledger, A. Huerta, M. Mallett, “A staggered high-dimensional Proper Generalised Decomposition for coupled magneto-mechanical problems with application to MRI scanners”, *Computer Methods in Applied Mechanics and Engineering*, Volume 370, 2020, doi: [10.1016/j.cma.2020.113271](https://doi.org/10.1016/j.cma.2020.113271)
63. M. Seoane, P.D. Ledger, **A.J. Gil**, S. Zlotnik and M. Mallett, “A combined Reduced Order-Full Order methodology for the Solution of 3D Magneto-Mechanical problems with application to MRI Scanners”, *International Journal for Numerical methods in Engineering*, Volume 121, 2020, pages 3529-3559 doi: [10.1002/nme.6369](https://doi.org/10.1002/nme.6369)
62. R. Ortigosa, D. Ruiz, **A.J. Gil**, A. Donoso and J.C. Bellido, “A stabilisation approach for topology optimisation of hyperelastic structures with the SIMP method”, *Computer Methods in Applied Mechanics and Engineering*, Volume 364, 2020, 112924, doi:[10.1016/j.cma.2020.112924](https://doi.org/10.1016/j.cma.2020.112924)
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57. O.I. Hassan, A. Ghavamian, C.H. Lee, **A.J. Gil**, J. Bonet and F. Auricchio, “An upwind finite volume algorithm for nearly and truly incompressible explicit fast solid dynamic applications: Total and Updated Lagrangian formulations”, *Journal of Computational Physics*, 2019, doi: [10.1016/j.jcp.2019.100025](https://doi.org/10.1016/j.jcp.2019.100025)
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146. N. Ellmer, **A.J. Gil**, M. Hossain, R. Ortigosa, J. Martinez-Frutos and F. Chinesta, “In-silico characterisation, topology optimisation and design of Electro Active Polymer based soft robots”, EUROMECH Colloquium on Mechanics of Soft Active Polymers, 24 – 26 August 2022, Southampton University, Southampton, United Kingdom.
145. A. Khayyer, Y. Shimizu, C. H. Lee, K. Kinuta, **A.J. Gil**, H. Gotoh and J. Bonet, “ δ -ULSPH: Updated Lagrangian SPH structure model enhanced through incorporation of δ -SPH density diffusion term”. SPHERIC workshop, Catania, Italy, June, 2022.
144. C. H. Lee, P.R. Refachinho de Campos, **A.J. Gil** and J. Bonet, “A Novel Updated Reference Lagrangian Smooth Particle Hydrodynamics algorithm for large strain solid dynamics”. SPHERIC workshop, Catania, Italy, June, 2022.
143. S. Miah, P.D. Ledger, **A.J. Gil** and M. Mallet, “Reduced order modelling using neural networks for predictive modelling of 3D-magneto-mechanical problems with application to magnetic resonance imaging scanners”. In proceedings of the UK-ACM Conference, Nottingham, 2022.
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