

List of Publications - Josef Kiendl

Papers in peer-reviewed international journals

- 65. Seibel, **J. Kiendl**; *A finite element approach for modelling the fracture behaviour of unidirectional FFF-printed parts*; Progress in Additive Manufacturing, (2025);
<https://doi.org/10.1007/s40964-025-01021-8>
- 64. M. Lukhi, C. Mittermeier, **J. Kiendl**; *Multi-physics simulation of a material extrusion-based additive manufacturing process: towards understanding stress formation in the printed strand*; Progress in Additive Manufacturing, (2025);
<https://doi.org/10.1007/s40964-025-01012-9>
- 63. D. Zhang, **J. Kiendl**; *A variationally consistent membrane wrinkling model based on spectral decomposition of the strain tensor*; Computer Methods in Applied Mechanics and Engineering, 117386 (2024);
<https://doi.org/10.1016/j.cma.2024.117386>
- 62. G. Ferri, **J. Kiendl**, A. Reali, E. Marino; *A fully explicit isogeometric collocation formulation for the dynamics of geometrically exact beams*; Computer Methods in Applied Mechanics and Engineering, 117283 (2024);
<https://doi.org/10.1016/j.cma.2024.117283>
- 61. M. Torre, S. Morganti, A. Nitti, M. D. de Tullio, **J. Kiendl**, F.S. Pasqualini, A. Reali; *An efficient active-stress electromechanical isogeometric shell model for muscular thin film simulations*; Mechanics of Materials, 105046 (2024);
<https://doi.org/10.1016/j.mechmat.2024.105046>
- 60. D. Magisano, A. Corrado, L. Leonetti, **J. Kiendl**, G. Garcea; *Large deformation Kirchhoff–Love shell hierarchically enriched with warping: Isogeometric formulation and modeling of alternating stiff/soft layups*; Computer Methods in Applied Mechanics and Engineering, 116556 (2024);
<https://doi.org/10.1016/j.cma.2023.116556>
- 59. T.X. Duong, L. Leonetti, **J. Kiendl**; *A variationally consistent contact formulation based on a mixed interpolation point method and isogeometric discretization*; Computer Methods in Applied Mechanics and Engineering, 116361 (2023);
<https://doi.org/10.1016/j.cma.2023.116361>
- 58. A. Nitti, M. Torre, A. Reali, **J. Kiendl**, M. D. de Tullio; *A multiphysics model for fluid-structure-electrophysiology interaction in rowing propulsion*; Applied Mathematical Modelling, 124:414-444 (2023);
<https://doi.org/10.1016/j.apm.2023.08.003>
- 57. L. Leonetti, **J. Kiendl**; *A mixed integration point (MIP) formulation for hyperelastic Kirchhoff–Love shells for nonlinear static and dynamic analysis*; Computer Methods in Applied Mechanics and Engineering, 416:116325 (2023);
<https://doi.org/10.1016/j.cma.2023.116325>
- 56. M. Loibl, L. Leonetti, A. Reali, **J. Kiendl**; *Patch-wise quadrature of trimmed surfaces in Isogeometric Analysis*; Computer Methods in Applied Mechanics and Engineering;

- 415:116279 (2023);
<https://doi.org/10.1016/j.cma.2023.116279>
55. A. Farahat, H. Verhelst, **J. Kiendl**, M. Kapl; *Isogeometric analysis for multi-patch structured Kirchhoff-Loveshells*; Computer Methods in Applied Mechanics and Engineering, 411:116060 (2023);
<https://doi.org/10.1016/j.cma.2023.116060>
 54. N. Ramos, C. Mittermeier, **J. Kiendl**; *Efficient simulation of the heat transfer in fused filament fabrication*; Journal of Manufacturing Processes, 94:550-563 (2023);
<https://doi.org/10.1016/j.jmapro.2023.03.0300>
 53. S. Eisenträger, **J. Kiendl**, G. Michaloudis, R. Duy, Y. Vetyukov; *Stability analysis of plates using cut Bogner-Fox-Schmit elements*; Computers and Structures, 270:106854 (2022);
<https://doi.org/10.1016/j.compstruc.2022.106854>
 52. D. Proserpio, **J. Kiendl**; *Penalty coupling of trimmed isogeometric Kirchhoff-Love shell patches*; Journal of Mechanics, 38:156-165 (2022);
<https://doi.org/10.1093/jom/ufac008>
 51. N. Ramos, C. Mittermeier, **J. Kiendl**; *Experimental and numerical investigations on heat transfer in fused filament fabrication 3D-printed specimens*; International Journal of Advanced Manufacturing Technology, 118:1367-1381 (2022),
<https://doi.org/10.1007/s00170-021-07760-6>
 50. A. del Toro Llorens, **J. Kiendl**; *An isogeometric finite element-boundary element approach for the vibration analysis of submerged thin-walled structures*; Computers and Structures, 256:106636 (2021);
<https://doi.org/10.1016/j.compstruc.2021.106636>
 49. L. Coradello, **J. Kiendl**, A. Buffa; *Coupling of non-conforming trimmed isogeometric Kirchhoff-Love shells via a projected super-penalty approach*; Computer Methods in Applied Mechanics and Engineering, 387:114187 (2021);
<https://doi.org/10.1016/j.cma.2021.114187>
 48. D. Proserpio, M. Ambati, L. De Lorenzis, **J. Kiendl**; *Phase-field simulation of ductile fracture in shell structures*; Computer Methods in Applied Mechanics and Engineering, 385:114019 (2021);
<https://doi.org/10.1016/j.cma.2021.114019>
 47. A. Özen, D. Auhl, C. Völlmecke, **J. Kiendl**, B. E. Abali; *Optimization of manufacturing parameters and tensile specimen geometry for fused deposition modeling (FDM) 3-D printed PETG*; Materials, 14(10):2556 (2021);
<https://doi.org/10.3390/ma14102556>
 46. A. Patton, P. Antolin, **J. Kiendl**, A. Reali; *Efficient equilibrium-based stress recovery for isogeometric laminated curved structures*; Composite Structures, 272:113975 (2021);
<https://doi.org/10.1016/j.compstruct.2021.113975>
 45. A. Nitti, **J. Kiendl**, A. Gizzi, A. Reali, M. de Tullio; *A curvilinear isogeometric framework for the electromechanical activation of thin muscular tissues*; Computer Methods in Applied Mechanics and Engineering, 382:113877 (2021);
<https://doi.org/10.1016/j.cma.2021.113877>

44. A. Patton, P. Antolin, J.-E. Dufour, **J. Kiendl**, A. Reali; *Accurate equilibrium-based inter-laminar stress recovery for isogeometric laminated composite Kirchhoff plates*; Composite Structures, 256:112976 (2021);
<https://doi.org/10.1016/j.compstruct.2020.112976>
43. H. Do, Y. Y. Tan, N. Ramos, **J. Kiendl**, O. Weeger; *Nonlinear isogeometric multiscale simulation for design and fabrication of functionally graded knitted textiles*; Composites Part B: Engineering, 202:108416 (2020);
<https://doi.org/10.1016/j.compositesb.2020.108416>
42. L. Leonetti, F. S. Liguori, D. Magisano, **J. Kiendl**, A. Reali, G. Garcea; *A robust penalty coupling of non-matching isogeometric Kirchhoff-Love shell patches in large deformations*; Computer Methods in Applied Mechanics and Engineering, 371:113289 (2020);
<https://doi.org/10.1016/j.cma.2020.113289>
41. D. Proserpio, M. Ambati, L. De Lorenzis, **J. Kiendl**; *A framework for efficient isogeometric computations of phase-field brittle fracture in multipatch shell structures*; Computer Methods in Applied Mechanics and Engineering, 372:113363 (2020);
<https://doi.org/10.1016/j.cma.2020.113363>
40. L. Coradello, D. D'Angella M. Carraturo, **J. Kiendl**, S. Kollmannsberger, E. Rank, A. Reali; *Hierarchically refined isogeometric analysis of trimmed shells*; Computational Mechanics, 66:431-447 (2020);
<https://doi.org/10.1007/s00466-020-01858-6>
39. P. Antolin, **J. Kiendl**, M. Pingaro, A. Reali; *A simple and effective method based on strain projections to alleviate locking in isogeometric solid shells*; Computational Mechanics, 65(6):1621-1631 (2020);
<https://doi.org/10.1007/s00466-020-01837-x>
38. A. Nitti, **J. Kiendl**, A. Reali, M. de Tullio; *An immersed-boundary/isogeometric method for fluid-structure interaction involving thin shells*; Computer Methods in Applied Mechanics and Engineering, 364:112977 (2020);
<https://doi.org/10.1016/j.cma.2020.112977>
37. **J. Kiendl**, C. Gao; *Controlling toughness and strength of FDM 3D-printed PLA components through the raster layup*; Composites Part B: Engineering, 180:107562 (2020);
<https://doi.org/10.1016/j.compositesb.2019.107562>
36. H. Casquero, D. Toshniwal, A. Li, T.J.R. Hughes, **J. Kiendl**, Y. Zhang; *Seamless integration of design and Kirchhoff-Love shell analysis using analysis-suitable unstructured T-splines*; Computer Methods in Applied Mechanics and Engineering, 360:112765 (2020);
<https://doi.org/10.1016/j.cma.2019.112765>
35. E. Marino, **J. Kiendl**, L. De Lorenzis; *Isogeometric collocation for implicit dynamics of three-dimensional beams undergoing finite motions*; Computer Methods in Applied Mechanics and Engineering, 356:548-570 (2019);
<https://doi.org/10.1016/j.cma.2019.07.0130>
34. L. Leonetti, D. Magisano, A. Madeo, G. Garcea, **J. Kiendl**, A. Reali; *A simplified Kirchhoff-Love large deformation model for elastic shells and its effective isogeometric formulation*;

- Computer Methods in Applied Mechanics and Engineering, 354:369-396 (2019);
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33. V. Balobanov, **J. Kiendl**, S. Khakalo, J. Niiranen; *Kirchhoff-Love shells within strain gradient elasticity: weak and strong formulations and an H^3 -conforming isogeometric implementation*; Computer Methods in Applied Mechanics and Engineering, 344:837-857 (2019);
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<https://doi.org/10.1016/j.cma.2018.09.005>
 31. C. Gao, **J. Kiendl**; *Short review on architected materials with topological interlocking mechanisms*; Material Design & Processing Communications, DOI:10.1002/mdp2.31 (2019);
<https://doi.org/10.1002/mdp2.31>
 30. A. Herrema, **J. Kiendl**, M.-C. Hsu; *A framework for isogeometric-analysis-based optimization of wind turbine blade structures*; Wind Energy, 22:153-170 (2019);
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 28. J. Niiranen, V. Balobanov, **J. Kiendl**, S. B. Hosseini; *Variational formulations, model comparisons and numerical methods for Euler-Bernoulli micro- and nano-beam models*; Mathematics and Mechanics of Solids, 24:312-335 (2019);
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 25. M.C.H. Wu, R. Zakerzadeh, D. Kamensky, **J. Kiendl**, M. Sacks, M.-C. Hsu; *An anisotropic constitutive model for immersogeometric fluid-structure interaction analysis of bioprosthetic heart valves*; Journal of Biomechanics, 74:23-31 (2018);
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22. O. Weeger, B. Narayanan, L. De Lorenzis, **J. Kiendl**, M.L. Dunn; *An isogeometric collocation method for frictionless contact of Cosserat rods*; Computer Methods in Applied Mechanics and Engineering, 321:361-382 (2017);
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19. H. Casquero, L. Liu, Y. Zhang, A. Reali, **J. Kiendl**, H. Gomez; *Arbitrary-Degree T-splines for Isogeometric Analysis of Fully Nonlinear Kirchhoff-Love Shells*; Computer-Aided Design, 82:140-153 (2017);
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18. **J. Kiendl**, M. Ambati, L. De Lorenzis, H. Gomez, A. Reali; *Phase-field description of brittle fracture in plates and shells*; Computer Methods in Applied Mechanics and Engineering, 312:374-394 (2016);
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17. F. Auricchio, L. Beirão da Veiga, **J. Kiendl**, C. Lovadina, A. Reali; *Isogeometric collocation mixed methods for rods*; Discrete and Continuous Dynamical Systems - Series S, 9:33-42 (2016);
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16. M.-C. Hsu, D. Kamensky, F. Xu, **J. Kiendl**, C. Wang, M.C.H. Wu, J. Mineroff, A. Reali, Y. Bazilevs, M. Sacks; *Dynamic and fluid-structure interaction simulations of bioprosthetic heart valves using parametric design with T-splines and Fung-type material models*; Computational Mechanics, 55:1211-1225 (2015);
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14. L. Beirão da Veiga, T.J.R. Hughes, **J. Kiendl**, C. Lovadina, J. Niiranen, A. Reali, H. Speleers; *A locking-free model for Reissner-Mindlin plates: Analysis and isogeometric implementation via NURBS and triangular NURPS*; Mathematical Models and Methods in Applied Sciences, 25:1519-1551 (2015);
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6. Y. Bazilevs, M.-C. Hsu, **J. Kiendl**, D.J. Benson; *A Computational Procedure for Pre-Bending of Wind Turbine Blades*; International Journal for Numerical Methods in Engineering, 89:323-336 (2012);
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2. **J. Kiendl**, Y. Bazilevs, M.-C. Hsu, R. Wüchner, K.-U. Bletzinger; *The bending strip method for isogeometric analysis of Kirchhoff-Love shell structures comprised of multiple patches*; Computer Methods in Applied Mechanics and Engineering, 199:2403-2416 (2010);
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<https://doi.org/10.1016/j.cma.2009.08.013>

Book chapters

1. M. A. Ghaziani, **J. Kiendl**, L. De Lorenzis; *Isogeometric Multiscale Modeling with Galerkin and Collocation Methods*; Virtual Design and Validation (2020)