

**Publications in this list are grouped according to**

- Peer-reviewed Journal Papers
- Books, Book Chapters, etc.
- Published Lecture Notes
- (Reviewed) Proceedings Papers etc.

**Peer-reviewed Journal Papers**

*Submitted papers:*

- Hervas-Raluy S., Wirthl B., Guerrero P.E., Robalo Rei G., Nitzler J., Coronado E., Font de Mora Sainz J., Schrefler B.S., Gomez-Benito M.J., Garcia Aznar J.M., Wall W.A.: Tumour growth: An approach to calibrate parameters of a multiphase porous media model based on in vitro observations of Neuroblastoma spheroid growth in a hydrogel microenvironment. submitted to *Computers in Biology and Medicine*, (2023)
- Satheesh A., Wall W.A., Meier C.: Structure-Preserving Invariant Interpolation Schemes for Invertible Second-Order Tensors. submitted to *International Journal for Numerical Methods in Engineering*, arXiv:2211.16507v1 (2022)
- Geitner C.M., Becher T., Frerichs I., Weiler N., Bates J.H., Wall W.A.: An approach to study recruitment/derecruitment dynamics in a patient-specific computational model of an injured human lung. submitted to *International Journal for Numerical Methods in Biomedical Engineering*, arXiv: 2212.01114. (2022)
- Grill M.J., Wall W.A., Meier C.: Asymptotically consistent and computationally efficient modeling of short-ranged molecular interactions between curved slender fibers undergoing large 3D deformations. submitted to *International Journal for Numerical Methods in Engineering*, arXiv:2208.03149 (2022)
- Meier C., Grill M.J., Wall W.A.: Generalized Section-Section Interaction Potentials in the Geometrically Exact Beam Theory: Modeling of Intermolecular Forces, Asymptotic Limit as Strain-Energy Function, and Formulation of Rotational Constraints. submitted to *International Journal of Solids and Structures*, arXiv:2105.10032 (2022)
- Gebauer A.M. Pfaller M.R., Bräu F.A., Cyron C.J., Wall W.A.: A homogenized constrained mixture model of cardiac growth and remodeling: Analyzing mechanobiological stability and reversal. submitted to *Biomechanics and Modeling in Mechanobiology*, arXiv:2208.03149 (2022)
- Schmidt C., Sinzig S., Gravemeier V., Wall W.A.: A Three-Dimensional Finite Element Formulation Coupling Electrochemistry and Solid Mechanics on Resolved Microstructures of All-Solid-State Lithium-Ion Batteries. submitted to *Computer Methods in Applied Mechanics and Engineering*, <http://ssrn.com/abstract=4189627> (2022)

*Accepted / published papers:*

- Sinzig S., Hollweck T., Schmidt C., Wall W.A.: A Finite Element Formulation to Three-Dimensionally Resolve Space-Charge Layers in Solid Electrolytes. accepted *Journal of the Electrochemical Society*, arxiv.org/abs/2301.05949
- Grill M.J., Wall W.A., Meier C.: Analytical disk-cylinder interaction potential laws for the computational modeling of adhesive, deformable (nano)fibers. accepted in *International Journal of Solids and Structures*, arXiv:2208.03074 (2022)
- Schneider C., Schmidt C.P., Neumann A., Clausnitzer M., Sadowski M., Harm S., Meier C., Danner T., Albe K., Latz A., Wall W.A., Lotsch B.V.: Effect of Particle Size and Pressure on the Transport properties of the Fast Ion Conductor t-Li<sub>7</sub>SiPS<sub>8</sub>. accepted in *Advanced Energy Materials*, 10.26434/chemrxiv-2022-tvc6l (2022)

- Wirthl B., Brandstaeter S., Nitzler J., Schrefler B., Wall W.A.: Global sensitivity analysis based on Gaussian-process metamodelling for complex biomechanical problems. accepted in *International Journal for Numerical Methods in Biomedical Engineering*, <https://doi.org/10.1002/cnm.3675>, arXiv.2202.01503 (2022)
- Willmann H., Nitzler J., Brandstätter S., Wall W.A.: Bayesian calibration of coupled computational mechanics models under uncertainty based on interface deformation. accepted in *Advanced Modeling and Simulation in Engineering Sciences*, **9** (2022), 24
- Faraji M., Seitz A., Meier C., Wall W.A.: A Mortar Finite Element Formulation for Large Deformation Lubricated Contact Problems with Smooth Transition Between Mixed, Elasto-Hydrodynamic and Full Hydrodynamic Lubrication. accepted in *Tribology Letters*, (2023) 71:11, <https://doi.org/10.1007/s11249-022-01682-4>
- Fuchs S.L., Praegla P.M., Cyron C.J., Wall W.A., Meier C.: A versatile SPH modeling framework for coupled microfluid-powder dynamics in additive manufacturing: binder jetting, material jetting, directed energy deposition and powder bed fusion. *Engineering with Computers*, doi: 10.1007/s00366-022-01724-4, (2022)
- Nitzler J., Biehler J., Fehn N., Koutsourelakis P.-S., Wall W.A.: A Generalized Probabilistic Learning Approach for Multi-Fidelity Uncertainty Propagation in Complex Physical Simulations. *Computer Methods in Applied Mechanics and Engineering*, **400** (2022), 115600. <https://doi.org/10.1016/j.cma.2022.115600>
- Gravemeier V., Civaner M., Wall W.A.: A partitioned-monolithic finite element method for thermo-fluid-structure interaction. *Computer Methods in Applied Mechanics and Engineering*, accepted 2022
- Willmann H., Wall W.A.: Inverse analysis of material parameters in coupled multi-physics biofilm models. *Advanced Modeling and Simulation in Engineering Sciences*, 2022, 9:7
- Striegel C., Biehler J., Wall W.A., Kauermann G.: Multivariate and Multifidelity Computer Output Approximation using Function-to-Function Regression. *Technometrics*, accepted 2021
- Fang R., Schmidt C., Wall W.A.: A coupled finite element approach to spatially resolved lithium plating and stripping in three-dimensional anode microstructures of lithium-ion cells. *Journal of Computational Physics*, **461** (2022), 111179
- Fehn N., Kronbichler M., Munch P., Wall W.A.: Numerical evidence of anomalous energy dissipation in incompressible Euler flows: Towards grid-converged results for the inviscid Taylor-Green problem. *Journal of Fluid Mechanics*, 932, A40. (2022) doi:10.1017/jfm.2021.1003
- Pröll S., Wall W.A., Meier C.: A simple yet consistent constitutive law and mortar-based layer coupling schemes for thermomechanical macroscale simulations of metal additive manufacturing processes. *Advanced Modeling and Simulation in Engineering Sciences*, **8** (2021), 24
- Förster K.M., Roth C.J., Hilgendorff A., Ertl-Wagner B., Flemmer A.W., Wall W.A.: In silico numerical simulation of ventilator settings during high frequency ventilation in preterm infants. *Pediatric Pulmonology*, **56** (2021), 3839-3846
- Eichinger J.F., Paukner D., Aydin R.C., Wall W.A., Humphrey J.D., Cyron C.J.: What do cells regulate in soft tissues on short time scales? *Acta Biomaterialia*, accepted 2021
- Penny R., Praegla P.M., Ochsenius M., Oropeza D., Meier C., Wall W.A., Hart J.: Spatial Mapping of Powder Layer Density for Metal Additive Manufacturing via X-ray Microscopy. *Additive Manufacturing*, accepted 2021
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- Kremheller J., Brandstätter S., Schrefler B.A., Wall W.A.: Validation and parameter optimization of a hybrid embedded/homogenized solid tumor perfusion model. *International Journal for Numerical Methods in Biomedical Engineering*, accepted 2021
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- Eichinger J.F., Grill M.J., Davoodi Kermani I., Aydin R.C., Wall W.A., Humphrey J.D., Cyron C.J.: A computational framework for modeling cell-matrix interactions in soft biological tissues. *Biomechanics and Modeling in Mechanobiology*, **20** (2021), 1851-1870
- Fuchs S.L., Meier C., Wall W.A., Cyron C.J.: An SPH framework for fluid-solid and contact interaction problems including thermo-mechanical coupling and reversible phase transitions. *Advanced Modeling and Simulation in Engineering Sciences*, **8** (2021), 15
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