

Research outputs

Pricing Convertible Bonds with the Penalty TF Model Using Finite Element Method

Kazbek, R., Erlangga, Y., Amanbek, Y. & Wei, D., May 17 2024, (Accepted/In press) In: Computational Economics.

Aerostructural Design Optimization of Wind Turbine Blades

Batay, S., Baidullayeva, A., Zhao, Y., Wei, D., Baigarina, A., Sarsenov, E. & Shabdan, Y., Jan 2024, In: Processes. 12, 1, 22.

A finite element approach to the numerical solutions of Leland's model

Wei, D., Erlangga, Y. A. & Zhumakhanova, G., Jan 2024, In: International Review of Economics and Finance. 89, p. 582-593 12 p.

Geometric improvement of the sheet/film extrusion die using Rabinowitsch-Mooney analysis

Razeghiyadaki, A., Wei, D., Perveen, A. & Zhang, D., 2024, (Accepted/In press) In: International Journal of Advanced Manufacturing Technology.

Investigation of Co-Extrusion Using a Coat Hanger Die with Different Feedblock Cross-Section

Sharipkhan, N., Clifford, O., Perveen, A., Zhang, D. & Wei, D., 2024, *Key Engineering Materials*. Trans Tech Publications, p. 131-137 7 p. (Key Engineering Materials; vol. 973).

Investigation of the Two-Channel Feedblock Zone in Co-Extrusion of Polymers

Sharipkhan, N., Perveen, A., Zhang, D. & Wei, D., 2024, *Key Engineering Materials*. Trans Tech Publications, p. 119-129 11 p. (Key Engineering Materials; vol. 973).

On Geometric Estimates for Some Problems Arising from Modeling Pull-in Voltage in MEMS

Suragan, D. & Wei, D., 2024, *Trends in Mathematics*. Springer Science and Business Media Deutschland GmbH, p. 189-197 9 p. (Trends in Mathematics; vol. 3).

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Temirkhan, M., Spitas, C. & Wei, D., Dec 2023, In: Meccanica. 58, 12, p. 2455-2466 12 p.

Optimization of Non-Newtonian Flow through a Coat-Hanger Die Using the Adjoint Method

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Kelvin-Voigt lumped parameter models for approximation of the Power-law Euler-Bernoulli beams

Wei, D., Aniyarov, A., Zhang, D., Spitas, C., Nurakhmetov, D. & Amrin, A., Sept 1 2023, In: Alexandria Engineering Journal. 78, p. 246-255 10 p.

Adjoint-Based High-Fidelity Concurrent Aerodynamic Design Optimization of Wind Turbine

Batay, S., Kamalov, B., Zhagaskanov, D., Zhao, Y., Wei, D., Zhou, T. & Su, X., Mar 2023, In: Fluids. 8, 3, 85.

Lumped-parameter model for dynamic monolayer graphene sheets

Wei, D., Nurakhmetov, D., Aniyarov, A., Zhang, D. & Spitas, C., Sept 15 2022, In: Journal of Sound and Vibration. 534, 117062.

Effects of Melt Temperature and Non-Isothermal Flow in Design of Coat Hanger Dies Based on Flow Network of Non-Newtonian Fluids

Razeghiyadaki, A., Wei, D., Perveen, A., Zhang, D. & Wang, Y., Aug 2022, In: Polymers. 14, 15, 3161.

Mutual Interdependence of the Physical Parameters Governing the Boundary-Layer Flow of Non-Newtonian Fluids
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Analysis of dynamic pull-in voltage and response time for a micro-electro-mechanical oscillator made of power-law materials
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Ramberg–Osgood material behavior expression and large deflections of Euler beams
Giardina, R. J. & Wei, D., Feb 2021, In: Mathematics and Mechanics of Solids. 26, 2, p. 179-198 20 p.

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Wei, D. & Shu, Y., Jan 1 2019, In: *Journal of Applied and Computational Mechanics*. 5, 2, p. 344-354 11 p.

Analytical and numerical investigations of the collapse of blood vessels with nonlinear wall material embedded in nonlinear soft tissues

Ghazy, M., Elgindi, M. B. & Wei, D., Dec 2018, In: *Alexandria Engineering Journal*. 57, 4, p. 3437-3450 14 p.

Finite element solutions of cantilever and fixed actuator beams using augmented lagrangian methods

Wei, D. & Li, X., Mar 1 2018, In: *Journal of Applied and Computational Mechanics*. 4, 2, p. 125-132 8 p.

On the application of Sturm's theorem to analysis of dynamic pull-in for a graphene-based MEMS model

Omarov, D., Nurakhmetov, D., Wei, D. & Skrzypacz, P., Jan 1 2018, In: *Applied and Computational Mechanics*. 12, 1, p. 59-72 14 p.

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Numerical Analysis for Retaining Walls Subjected to Swelling Pressure

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Hazim, H., Wei, D., Elgindi, M. & Soukiassian, Y., 2015, In: *World Journal of Engineering*.

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Similarity solutions for non-Newtonian power-law fluid flow

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On the Solvability of an Euler Graphene Beam Subject to Axial Compressive Load

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Some generalized trigonometric sine functions and their applications

Wei, D., Liu, Y. & Elgindi, M. B., 2012, In: Applied Mathematical Sciences. 6, 121-124, p. 6053-6068 16 p.

Travelling wave solutions of Burgers' equation for Gee-Lyon fluid flows

Wei, D. & Holladay, K., 2012, In: Applied Mathematics E - Notes. 12, p. 129-135 7 p.

Traveling wave solutions of Burgers' equation for power-law non-Newtonian flows

Wei, D. & Borden, H., May 27 2011, In: Applied Mathematics E - Notes. 11, p. 132-138 7 p.

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Kythe, P. K., Wei, D. & Okrouhlik, M., 2004, In: Applied Mechanics Reviews. 57, 5, p. B25-B25

Finite element solutions of heat transfer in molten polymer flow in tubes with viscous dissipation

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Penalty finite element approximations of the stationary power-law Stokes problem

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Penalty approximations to the stationary power-law Navier-Stokes problem

Wei, D., Aug 2001, In: Numerical Functional Analysis and Optimization. 22, 5-6, p. 749-765 17 p.

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Numerical approximation of the first eigenpair of the p-Laplacian using finite elements and the penalty method

Lefton, L. & Wei, D., 1997, In: Numerical Functional Analysis and Optimization. 18, 3-4, p. 389-399 11 p.

Radial Solutions to A Nonlinear P-Harmonic Dirichlet Problem

Saxton, R. & Wei, D., Dec 1 1993, In: Applicable Analysis. 51, 1-4, p. 59-80 22 p.

Existence, uniqueness, and numerical analysis of solutions of a quasilinear parabolic problem

Wei, D., Jan 1 1992, In: SIAM Journal on Numerical Analysis. 29, 2, p. 484-497 14 p.

Finite element approximation of the first eigenpair of a nonlinear problem

Wei, D., Jan 1 1991, In: Numerical Functional Analysis and Optimization. 12, 5-6, p. 611-620 10 p.

An Existence Theorem for Weak Solution of a Nonlinear Dam Problem
Wei, D., Jan 1 1989, In: Applicable Analysis. 34, 3-4, p. 219-230 12 p.

Finite Element Approximations of Solutions to P-Harmonic Equation with Dirichlet Data
Wei, D., Jan 1989, In: Numerical Functional Analysis and Optimization. 10, 11-12, p. 1235-1251 17 p.

Numerical analyses of some nonlinear partial differential equations

Wei, D., 1988, Michigan State University. Department of Mathematics.

Awards

Projects

Design & Development of Multiphysics Algorithm for Polymer Sheet Processing Die Design

Wei, D., Perveen, A., Zhang, D., Igali, D. & Razeghiyadaki, A.

1/1/21 → 12/31/23

MLS: Design, fabrication & characterization of metal lattice structures using ultrasonically atomized powder

Talamona, D., Perveen, A., Wei, D., Folgheraiter, M., Qureshi, A. & Zhakiyev, N.

1/1/24 → 12/31/26

Development and Prototyping of Extrusion Dies for Advanced Plastic Sheets and Thin Film Production

Wei, D. & Perveen, A.

4/6/18 → 12/31/20

Efficient Computational Model for Light Propagation in High Scattering NP-doped Optical Fiber

Molardi, C., Wei, D., Tosi, D., Blanc, W. & Cucinotta, A.

1/1/24 → 12/31/26

Finite Element Methods for Dirichlet feedback control problems in chemical reaction engineering

Skrzypacz, P. S., Erlangga, Y., Golman, B., Wei, D. & Schieweck, F.

1/1/18 → 12/31/21

HCT-MDO-WT: High-fidelity concurrent multidisciplinary design optimization based on arbitrary hybrid turbulence modelling and fully coupled FSI

Zhao, Y. & Wei, D.

1/1/23 → 12/31/25

Modeling and Simulation of Nonlinear Material Structures for Mechanical Pressure Sensing and Actuation Applications

Wei, D.

2/1/17 → 1/2/20

AP09259703: Multi-layered inertial reactive armour

Zhang, D., Spitas, C., Wei, D., Amrin, A., Ajan, B. & Tariq, H. B.

1/1/21 → 12/31/23

RA.RE: Rapid response fixed astronomical telescope for gamma ray burst observation

Spitas, C., Grossan, B., Wei, D., Insepov, Z., Zhang, D., Abishev, M. & Bibossinov, A.

1/1/20 → 12/31/23

Three-dimensional patient-specific reconstruction of optic nerve head morphology for risk assessment of glaucoma development and progression

Kim, J., Lee, D., Talamona, D., Wei, D., Zhang, D. & Ko, M.
1/1/17 → 8/31/21