

Peer-Reviewed Journal Publications

- [18] M. Aßmus and H. Altenbach. “Elastic properties of polycrystalline silicon: experimental findings, effective estimates, and their relations”. In: *Continuum Mechanics and Thermodynamics* 35.- (2023), pp. 595–624. DOI: 10.1007/s00161-023-01201-3.
- [17] M. Aßmus and H. Altenbach. “On analytical estimates of the effective elastic properties of polycrystalline silicon”. In: *Vestnik of Saint Petersburg University. Mathematics. Mechanics. Astronomy* 9/67.3 (2022), pp. 440–451. DOI: 10.21638/spbu01.2022.305.
- [16] M. Aßmus, R. Glüge, and H. Altenbach. “Hashin-Shtrikman Bounds of Cubic Crystalline Aggregate Elasticity for poly-Si Solar Cells”. In: *Technische Mechanik* 41.1 (2021), pp. 24–33. DOI: 10.24352/ub.ovgu-2021-004.
- [15] R. Glüge and M. Aßmus. “A systematic approach to reduce the independent tensor components by symmetry transformations - A commented translation of “Tensors and Crystal Symmetry” by Carl Hermann”. In: *Continuum Mechanics and Thermodynamics* 33.4 (2021), pp. 1603–1620. DOI: 10.1007/s00161-021-00978-5.
- [14] S. Bergmann, F. Hassani, Z. Javanbakht, and M. Aßmus. “On a Fast Analytical Approximation of Natural Frequencies for Photovoltaic Modules”. In: *Technische Mechanik* 40.2 (2020), pp. 191–203. DOI: 10.24352/ub.ovgu-2020-025.
- [13] J. Nordmann, M. Aßmus, R. Glüge, and H. Altenbach. “On the Derivation of Hooke’s Law for Plane State Conditions”. In: *Technische Mechanik* 40.2 (2020), pp. 160–174. DOI: 10.24352/ub.ovgu-2020-023.
- [12] M. Aßmus, R. Glüge, and H. Altenbach. “On the Analytical Estimation for Isotropic Approximation of Elastic Properties applied to Polycrystalline Cubic Silicon used at Solar Cells”. In: *Technische Mechanik* 40.2 (2020), pp. 120–133. DOI: 10.24352/ub.ovgu-2020-020.
- [11] Z. Javanbakht, M. Aßmus, K. Naumenko, A. Öchsner, and H. Altenbach. “On Thermal Strains and Residual Stresses in the Linear Theory of Anti-Sandwiches”. In: *Zeitschrift für Angewandte Mathematik und Mechanik* 99.8 (2019), e201900062. DOI: 10.1002/zamm.201900062.
- [10] M. Aßmus, K. Naumenko, A. Öchsner, V. A. Eremeyev, and H. Altenbach. “A generalized framework towards structural mechanics of three-layered composite structures”. In: *Technische Mechanik* 39.2 (2019), pp. 202–219. DOI: 10.24352/ub.ovgu-2019-019.
- [9] M. Haghi, M. Aßmus, K. Naumenko, and H. Altenbach. “Mechanical Models and Finite-Element Approaches for the Structural Analysis of Photovoltaic Composite Structures: A Comparative Study”. In: *Mechanics of Composite Materials* 54.4 (2018), pp. 415–430. DOI: 10.1007/s11029-018-9752-6.
- [8] J. Nordmann, M. Aßmus, and H. Altenbach. “Visualising Elastic Anisotropy: Theoretical Background and Computational Implementation”. In: *Continuum Mechanics and Thermodynamics* 30.4 (2018), pp. 689–708. DOI: 10.1007/s00161-018-0635-9.
- [7] M. Aßmus, K. Naumenko, and H. Altenbach. “Mechanical Behaviour of Photovoltaic Composite Structures: Influence of Geometric Dimensions and Material Properties on the Eigenfrequencies of Mechanical Vibrations”. In: *Composites Communications* 6.- (2017), pp. 59–62. DOI: 10.1016/j.coco.2017.10.003.
- [6] M. Aßmus, J. Eisenträger, and H. Altenbach. “Projector Representation of Isotropic Linear Elastic Material Laws for Directed Surfaces”. In: *Zeitschrift für Angewandte Mathematik und Mechanik* 97.12 (2017), pp. 1625–1634. DOI: 10.1002/zamm.201700122.

- [5] M. Aßmus, S. Bergmann, K. Naumenko, and H. Altenbach. “Mechanical Behaviour of Photovoltaic Composite Structures: A Parameter Study on the Influence of Geometric Dimensions and Material Properties under Static Loading”. In: *Composites Communications* 5.- (2017), pp. 23–26. DOI: 10.1016/j.coco.2017.06.003.
- [4] M. Aßmus, J. Nordmann, K. Naumenko, and H. Altenbach. “A homogeneous substitute material for the core layer of photovoltaic composite structures”. In: *Composites Part B: Engineering* 112.- (2017), pp. 353–372. DOI: 10.1016/j.compositesb.2016.12.042.
- [3] M. Aßmus, K. Naumenko, and H. Altenbach. “A multiscale projection approach for the coupled global-local structural analysis of photovoltaic modules”. In: *Composite Structures* 158.- (2016), pp. 340–358. DOI: 10.1016/j.compstruct.2016.09.036.
- [2] M. Aßmus and M. Köhl. “Experimental investigation of the mechanical behavior of photovoltaic modules at defined inflow conditions”. In: *Journal of Photonics for Energy* 2.1 (2012), pp. 1–11. DOI: 10.1117/1.JPE.2.022002.
- [1] M. Aßmus, S. Jack, K.-A. Weiß, and M. Köhl. “Measurement and simulation of vibrations of PV-modules induced by dynamic mechanical loads”. In: *Progress in Photovoltaics: Research and Applications* 19.6 (2011), pp. 688–694. DOI: 10.1002/pip.1087.

Reviewed Conference Contributions

- [4] M. Aßmus, J. Eisenträger, and H. Altenbach. “On isotropic linear elastic material laws for directed planes”. In: *Proceedings of the 11th International Conference on Shell Structures: Theory and Applications (SSTA 2017)*. Gdańsk, Poland, 2017, pp. 57–60. DOI: 10.1201/9781315166605-7.
- [3] W. Herrmann, N. Bogdanski, F. Reil, M. Köhl, K.-A. Weiß, M. Aßmus, and M. Heck. “PV module degradation caused by thermomechanical stress: real impacts of outdoor weathering versus accelerated testing in the laboratory”. In: *Proceedings of the International Society for Optical Engineering (Reliability of Photovoltaic Cells, Modules, Components, and Systems III)*. Vol. 7773. San Diego, USA, 2010, p. 01. DOI: 10.1117/12.859809.
- [2] M. Aßmus, S. Jack, M. Köhl, and K.-A. Weiß. “Dynamic Mechanical Loads on PV-Modules”. In: *Proceedings of the 24th European Photovoltaic Solar Energy Conference*. Hamburg, Germany, 2009, pp. 3395–3397. DOI: 10.4229/24thEUPVSEC2009-4AV.3.34.
- [1] K.-A. Weiß, M. Aßmus, S. Jack, and M. Köhl. “Measurement and simulation of dynamic mechanical loads on PV-modules”. In: *Proceedings of the International Society for Optical Engineering (Reliability of Photovoltaic Cells, Modules, Components, and Systems II)*. Vol. 7412. San Diego, USA, 2009, p. 03. DOI: 10.1117/12.824859.

Contributions in Edited Volumes

- [7] M. Aßmus, Z. Javanbakht, and H. Altenbach. “The Direct Approach for Plates Considering Hygrothermal Loading and Residual Kinetics”. In: *Sixty Shades of Generalized Continua*. Ed. by H. Altenbach, A. Berezovski, F. dell’Isola, and A. Porubov. Vol. 170. Advanced Structured Materials. Singapore: Springer, 2023, pp. 21–32. DOI: 10.1007/978-3-031-26186-2_3.

- [6] M. Aßmus and H. Altenbach. “On Dynamic Optimality of Anti-Sandwiches”. In: *Dynamics and Control of Advanced Structures and Machines*. Ed. by H. Irschik, M. Krommer, V. P. Matveenko, and A. K. Belyaev. Vol. 156. Advanced Structured Materials. Singapore: Springer, 2021, pp. 1–11. DOI: 10.1007/978-3-030-79325-8_1.
- [5] M. Aßmus and H. Altenbach. “On the Principles to Derive Plate Theories”. In: *Modern Trends in Structural and Solid Mechanics 2*. Ed. by N. Challamel, J. Kaplunov, and I. Takewaki. Mechanical Engineering and Solid Mechanics. London · Hoboken: ISTE - WILEY, 2021, pp. 29–42. DOI: 10.1002/9781119831860.ch2.
- [4] M. Aßmus and H. Altenbach. “A mathematically consistent vector-matrix representation of generalized Hooke’s law for shear-rigid plates”. In: *Nonlinear Wave Dynamics of Materials and Structures*. Ed. by H. Altenbach, V. A. Eremeyev, I. Pavlov, and A. Porubov. Vol. 122. Advanced Structured Materials. Singapore: Springer, 2020, pp. 57–67. DOI: 10.1007/978-3-030-38708-2_3.
- [3] M. Aßmus and H. Altenbach. “On Viscoelasticity in the Theory of Geometrically Linear Plates”. In: *State of the Art and Future Trends in Material Modelling*. Ed. by H. Altenbach and A. Öchsner. Vol. 100. Advanced Structured Materials. Singapore: Springer, 2019, pp. 1–22. DOI: 10.1007/978-3-030-30355-6_1.
- [2] M. Aßmus, K. Naumenko, and H. Altenbach. “Subclasses of Mechanical Problems Arising from the Direct Approach for Homogeneous Plates”. In: *Recent Developments in the Theory of Shells*. Ed. by H. Altenbach, J. Chróścielewski, V. A. Eremeyev, and K. Wiśniewski. Vol. 110. Advanced Structured Materials. Singapore: Springer, 2019, pp. 43–63. DOI: 10.1007/978-3-030-17747-8_4.
- [1] M. Aßmus, S. Bergmann, J. Eisenträger, K. Naumenko, and H. Altenbach. “Consideration of Non-Uniform and Non-Orthogonal Mechanical Loads for Structural Analysis of Photovoltaic Composite Structures”. In: *Mechanics for Materials and Technologies*. Ed. by H. Altenbach, R. V. Goldstein, and E. Murashkin. Vol. 46. Advanced Structured Materials. Singapore: Springer, 2017, pp. 73–122. DOI: 10.1007/978-3-319-56050-2_4.

Edited Special Issues

- [1] M. Aßmus, V. A. Eremeyev, and A. Öchsner , eds. “A Life devoted to Advances in Continuum Mechanics of Material and Structural Behavior”. In: *Continuum Mechanics and Thermodynamics* 33.4 (2021), pp. 873–1978. URL: <https://link.springer.com/journal/161/volumes-and-issues/33-4>.

Edited Volumes

- [1] K. Naumenko and M. Aßmus, eds. *Advanced Methods of Continuum Mechanics for Materials and Structures*. Vol. 60. Advanced Structured Materials. Singapore: Springer, 2016. DOI: 10.1007/978-981-10-0959-4.

Editorials

- [2] M. Aßmus, V. A. Eremeyev, and A. Öchsner. *Foreword. Continuum Mechanics and Thermodynamics*, 33(4):873–875. 2021. DOI: 10.1007/s00161-021-00975-8.

- [1] K. Naumenko and M. Aßmus. *Preface*. In K. Naumenko and M. Aßmus, eds., *Advanced Methods of Continuum Mechanics for Materials and Structures*, volume 60 of *Advanced Structured Materials*, pages vii–xiv. Springer, Singapore. 2016. URL: <https://link.springer.com/content/pdf/bfm%3A978-981-10-0959-4%2F1.pdf>.

Books

- [1] M. Aßmus. *Structural Mechanics of Anti-Sandwiches. An Introduction*. SpringerBriefs in Continuum Mechanics. Cham: Springer, 2019. DOI: 10.1007/978-3-030-04354-4.