

Prof. Dr.-Ing. Niels Modler

Technische Universität Dresden

Institute of Lightweight Engineering and Polymer Technology

Chair of Function-integrative Lightweight Engineering



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Personal data

Date of birth:

Place of birth:

Nationality:

Biographical sketch

- since 2013 Chair holder „Function-integrative Lightweight Engineering“, TU Dresden
- 2013 Appointment as University Professor, Chair „Function-integrative Lightweight Engineering“, TU Dresden
- 2012 Appointment to W3 Professorship (without leadership role) „Medical Device Technology“, University Stuttgart
- 2008 Graduate with doctorate degree Dr.-Ing., TU Dresden
- 1999-2013 Scientific Assistant at Institute of lightweight Engineering and Polymer Technology, TU Dresden
- 1998 – 1999 Employee at VitalAire GmbH, Hamburg
- 1996 – 1998 Employee at Steris GmbH, Orsingen-Nenzingen
- 1993 – 1995 Employee at A.R.U. Medizintechnik OHG, Dresden
- 1988 – 1993 Academic studies „Electrical Engineering/Precision Engineering/Biomedical Engineering“, TU Dresden, diploma

Functions

- since 2022 Spokesman of the Management Board, Institute of Lightweight Engineering and Polymer Technology, TU Dresden
- since 2018 Deputy Speaker of the Research Training Group GRK 2430 "Interactive Fiber Rubber Composites"
- since 2014 Member of the Management Board, Institute of Lightweight Engineering and Polymer Technology, TU Dresden
- 2014-2018 Local Speaker of the Collaborative research Center SFB/TR39 for Dresden
- 2007-2013 Member of ILK-Board, Institute of Lightweight Engineering and Polymer Technology, TU Dresden
- 2006-2018 Member and partial project leader within the Collaborative research Center SFB/TR39 "Production Technologies for Lightmetal and Fiber Reinforced Composite Based Components with Integrated Piezoceramic Sensors and Actuators (PT-PIESA)"

2003-2015	Managing director of the DFG funded Collaborative Research Center SFB 639 "Textile-reinforced Composite Components for Function-integrating Multi-material Design in Complex Lightweight Applications"
since 2022	Member of the scientific circle of the eNOVA Strategy Circle Automobile Future, Germany
since 2019	Member of the advisory board "Efficient Mobility" of the Saxon Energy Agency - SAENA GmbH
since 2017	Chairman of the FA310 – Technical Committee Production Technology for Fiber-Composite Materials of the VDI Society Materials Engineering (GME), Department 3 "Plastics Technology"
since 2014	Spokesman of the group of professors in the Senate of TU Dresden, Member of the Faculty Board Mechanical Science and Engineering
since 2013	Visiting Professor at CDHK, Tongji University, Shanghai, China
since 2013	Reviewer in numerous project execution organisations (DFG, EU, AIF, Thüringer Aufbaubank, Bayerische Forschungsstiftung) and scientific professional journals (AEM, Composite Structures, Materialwissenschaft und Werkstofftechnik)
since 2021	Chairman of the organization "Akademischer Club Leichtbau e.V. an der TU Dresden"

Selected significant publications

- [1] Wollmann, T.; Modler, N.; Dannemann, M.; Langkamp, A.; Nitschke, S.; Filippatos, A.: Design and testing of composite compressor blades with focus on the vibration behaviour. *Composites Part A: Applied Science and Manufacturing* 92 (2017), S. 183-189, doi: 10.1016/j.compositesa.2016.06.012
- [2] Wollmann, T.; Hahn, M.; Wiedemann, S.; Zeiser, A.; Jaschinski, J.; Modler, N.; Ben Khalifa, N.; Meißner, F.; Paul, Ch.: Thermoplastic fibre metal laminates: Stiffness properties and forming behaviour by means of deep drawing. *Archives of Civil and Mechanical Engineering* 18 (2018) 2, S. 442-450, ISSN 1644-9665, doi: 10.1016/j.acme.2017.09.001
- [3] Holeczek, K.; Starke, E.; Winkler, A.; Dannemann, M.; Modler, N.: Numerical and experimental characterisation of fibre-reinforced thermoplastic composite structures with embedded piezoelectric sensor-actuator arrays for ultrasonic applications. *Applied Sciences* 6 (2016) 3; S. 55:1-55:13, doi: 10.3390/app6030055
- [4] Tutunjian, S.; Dannemann, M.; Fischer, F.; Eroglu, O.; Modler, N.: A control method for the ultrasonic spot welding of fiber-reinforced thermoplastic laminates through the weld-power time derivative. *Journal of Manufacturing and Materials Processing* 3 (2019) 1, Nr. 1, ISSN 2504-4494, doi: 10.3390/jmmp3010001
- [5] Kostka, P.; Holeczek, K.; Höhne, R.; Filippatos, A.; Modler, N.: Extension and application of dynamic mechanical analysis for the estimation of spatial distribution of material properties. *Polymer Testing* 52 (2016), S. 184-191, ISSN: 0142-9418, doi: 10.1016/j.polymertesting.2016.04.019
- [6] Holeczek, K.; Kostka, P.; Modler, N.: Dry friction contribution to damage-caused increase of damping in fiber-reinforced polymer-based composites. *Advanced Engineering Materials* 16 (2014) 10, S. 1284-1292, ISSN 1527-2648, doi: 10.1002/adem.201400293
- [7] Modler, N., Hufenbach, W., Cherif, C., Ulbricht, V., Gude, M., Maron, B., Weck, D., Filippatos, A., Wiemer, H., Langkamp, A.: Novel hybrid yarn textile thermoplastic composites for

function-integrating multi-material lightweight design. *Advanced Engineering Materials* 18 (2016) 3, S. 361-368, ISSN 1527-2648, doi: 10.1002/adem.201600028

- [8] Şerban, D.A.; Linul, E.; Voiconi, T.; Marşavina, L.; Modler, N.: Numerical evaluation of two-dimensional micromechanical structures of anisotropic cellular materials: case study for polyurethane rigid foams. *Iranian Polymer Journal* 24 (2015) 6, S. 515-529, ISSN 1026-1265, doi: 10.1007/s13726-015-0342-3
- [9] Hufenbach, W. A.; Modler, N.; Winkler, A.; Ilg, J.; Rupitsch, S. J.: Fibre-reinforced composite structures based on thermoplastic matrices with embedded piezoceramic modules. *Smart Materials and Structures* 23 (2014) 2, 025011, ISSN 0964-1726, doi: 10.1088/0964-1726/23/2/025011
- [10] Dannemann, M.; Kucher, M.; Kirsch, J.; Binkowski, A.; Modler, N.; Hannig, C.; Weber, M.-T.: An approach for a mathematical description of human root canals by means of elementary parameters. *Journal of Endodontics* 43 (2017) 4, S. 536-543, doi: 10.1016/j.joen.2016.11.011

Total number of publications: 262

Number of patents: 11