

## Peer-Reviewed Journal Articles

- C. Andriß, A. Kenf, T. Donhauser, and S. Schmeer, "Characterization and modeling of continuous carbon fiber-reinforced polycarbonate under multiaxial loads," *Composites Part B: Engineering*, vol. 235, p. 109740, 2022, doi: 10.1016/j.compositesb.2022.109740.
- P. Bauer, N. Motsch-Eichmann, S. Schmeer, K. Mehl, I. Müller, and J. Hausmann, "Hybrid Thermoset-Thermoplastic Structures: An in-depth study on plasma pretreated continuous fiber-reinforced epoxy specimens," *Composites Part C: Open Access*, vol. 8, p. 100281, 2022, doi: 10.1016/j.jcomc.2022.100281.
- A. Baumann, D. May, and J. Hausmann, "Characterization of metallic bushings in RTM-made composites by in-situ leak detection under mechanical loading," *Composites Part C: Open Access*, vol. 7, p. 100226, 2022, doi: 10.1016/j.jcomc.2021.100226.
- S. Becker and P. Mitschang, "Process Improvement of Continuous Induction Welding of Carbon Fiber-Reinforced Polymer Composites," *Journal of Materials Engineering and Performance*, vol. 31, p. 7049–7060, 2022, doi: 10.1007/s11665-022-06842-0.
- S. Becker, M. Michel, P. Mitschang and M. Duhovic, "Influence of polymer matrix on the induction heating behavior of CFRPC laminates," *Composites Part B: Engineering*, Volume 231, 2022, doi: 10.1016/j.compositesb.2021.109561
- S. Cassola, M. Duhovic, T. Schmidt, and D. May, "Machine learning for polymer composites process simulation – a review," *Composites Part B: Engineering*, vol. 246, p. 110208, 2022, doi: 10.1016/j.compositesb.2022.110208.
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- M. Eckrich, P. A. Arrabiyeh, A. M. Dlugaj, and D. May, "Structural topology optimization and path planning for composites manufactured by fiber placement technologies," *Composite Structures*, vol. 289, p. 115488, 2022, doi: 10.1016/j.compstruct.2022.115488.
- Esha and J. Hausmann, "Development of an Analytical Model to Predict Stress–Strain Curves of Short Fiber-Reinforced Polymers with Six Independent Parameters," *Journal of Composites Science*, vol. 6, no. 5, p. 140, 2022, doi: 10.3390/jcs6050140.
- A. Gebhard and B. C. Jim, "Formation, stability and degradation of transfer films formed by polyphenylene sulfide (PPS) and its composites in dry sliding against steel," *Wear*, vol. 500–501, p. 204343, 2022. doi: 10.1016/j.wear.2022.204343.
- F. Gortner, A. Schöffler, J. Fischer-Schuch, P. Mitschang, and P. Bachmann, "Influence of fungal decay on mechanical properties of bio-based sheet molding compounds (SMC)," *Polymers and Polymer Composites*, vol. 30, p. 1–11, 2022, doi: 10.1177/09673911221145050.
- F. Gortner, A. Schöffler, J. Fischer-Schuch, P. Mitschang, and P. Bachmann, "Use of bio-based and renewable materials for sheet molding compounds (SMC) – Mechanical properties and susceptibility to fungal decay," *Composites Part C: Open Access*, vol. 7, p. 100242, 2022, doi: 10.1016/j.jcomc.2022.100242.
- S. Grzesiak, M. Pahn, A. Klingler, E. I. Akpan, M. Schultz-Cornelius, and B. Wetzel, "Mechanical and Thermal Properties of Basalt Fibre Reinforced Polymer Lamellas for Renovation of Concrete Structures," *Polymers*, vol. 14, no. 4, p. 790, Feb. 2022, doi: 10.3390/polym14040790.
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- B. Khatri, J. Rehra, S. Schmeer, U. Breuer, and F. Balle, "Metal/Carbon-Fiber Hybrid Composites - Damage Evolution and Monitoring of Isothermal Fatigue at Low and Elevated Temperatures," *Journal of Composites Science*, vol. 6, no. 3, p. 67, 2022, doi: 10.3390/jcs6030067.
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- A. Klingler, M. Gilberg, B. Wetzel, and J.-K. Krüger, "Simultaneous access to different types of volume changes and the degree of cure during isothermal polymerization of polymer networks," *Express Polymer Letters*, vol. 16, no. 11, pp. 1193–1207, 2022, doi: 10.3144/expresspolymlett.2022.87.

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- T. Rief, N. Motsch-Eichmann, D. May, and J. Hausmann, "Development of a new method for manufacturing hollow fibre-reinforced plastic structures for aeronautical applications using structural CFRP cores," *Plastics, Rubber and Composites*, vol. 51, no. 8, pp. 407-417, 2022, doi: 10.1080/14658011.2022.2117120.
- V. Romanenko, M. Duhovic, D. Schommer, J. Hausmann, and J. Eschl, "Advanced process simulation of compression molded carbon fiber sheet molding compound (C-SMC) parts in automotive series applications," *Composites Part A: Applied Science and Manufacturing*, vol. 157, p. 106924, 2022. doi: 10.1016/j.compositesa.2022.106924.
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- S. Weidmann, P. Volk, P. Mitschang, and N. Markaide "Investigations on thermoforming of carbon fiber reinforced epoxy vitrimer composites," *Composites Part A: Applied Science and Manufacturing*, vol. 154, 2022, doi: 10.1016/j.compositesa.2021.106791
- B. Willenbacher, D. May, and P. Mitschang, "Saturated out-of-plane permeability and deformation metrology of textiles at high levels of injection pressure," *Advanced Manufacturing: Polymer & Composites Science*, Volume 8, Issue 2, p. 97-101, 2022, doi: 10.1080/20550340.2022.2064070.

## Specialized Conferences

P. Arrabiyeh, M. Eckrich, A. M. Dlugaj and D. May, "Wet Fiber Placement - Additive manufacturing with fiber bundles impregnated with thermoset resin", presented at the *ACME 5- 5th International Symposium on Automated Composites Manufacturing*, Bristol, UK, 2022.

Baumann and J. Hausmann, "Irradiation induced crosslinking in thermoplastic polyurethanes for structural applications" presented at the *23. Symposium Verbundwerkstoffe und Werkstoffverbunde*, Leoben, Austria, 2022.

P. Bauer, K. Mehl, N. Motsch-Eichmann, S. Schmeer, I. Mueller and J. Hausmann, "A novel hybrid thermoset-thermoplastic robot-based production concept for lightweight structural parts: A special view on the hybrid interface," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

C. Becker, N. Motsch-Eichmann and J. Hausmann, "In-Situ X-Ray Microscopy on CFRP to validate a meso-level based material model for simulative damage prediction," presented at the *ESMC 2022, European Solid Mechanics Conference*, Galway, Ireland, 2022.

C. Becker, N. Motsch-Eichmann and J. Hausmann, "Analysis of the mechanical and fracture behavior of recycled carbon staple fiber yarn under static load," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

B. Bergmann and J. Schlimbach, "Novel process for the filament winding," presented at the *23. Symposium Verbundwerkstoffe und Werkstoffverbunde*, Leoben, Austria, 2022.

M. Duhovic, T. Hoffmann, D. Schommer, J. Ernst, K. Schladitz, A. Moghiseh, F. Gortner, J. Hausmann, P. Mitschang, K. Steiner, "Digitizing the production of carbon fiber sheet molding compounds," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

M. Duhovic, S. Cassola, T. Hoffmann, P. Mitschang, "Towards Faster 3D Simulations of CFRTP Induction Welding", presented at the *16th LS-DYNA Forum 2022*, Bamberg, 2022

M. Eckrich, P. Arrabiyeh, A. Dlugaj and D. May, "Topology-Optimized Design to Manufacture for Wet Fiber Placement," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

M. Fickert and A. Gebhard, "Improved Design Process of Dry-Running Plastic Radial Plain Bearings," presented

at the *23rd International Colloquium Tribology*, Stuttgart/Ostfildern, 2022.

G. Foteinidis, M. Kosarli, K. Tsirka, A. Ruiz De Luzuriaga, A. Leroy, T. De Lumley Woodyear, S. Weidmann, A. S. Paipetis, "Mechanical characterization of 3R-Repairable composites and 3R bonding techniques produced by different processes and their repair efficiency," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

G. Foteinidis, M. Kosarli, K. Tsirka, A. Ruiz De Luzuriaga, A. Leroy, T. De Lumley Woodyear, S. Weidmann and A. S. Paipetis, "Structural Health Monitoring (SHM) on fibre reinforced composite T-joint geometry manufactured by a novel 3R resin," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

A. Gebhard, B.C. Jim, E. Kuksa, "In-Situ Detection and Quantification of Transfer Films," presented at the *4th International Conference on Polymer Tribology*, Stockholm, Sweden, 2022.

A. Gebhard, W. Kassem, and M. Oehler, "Cylinder-on-ring model wear tests as an input data source for the simulation of the friction and wear of plastic gears," presented at the *4th International Conference on High Performance Plastic Gears 2022*, Garching b. München, 2022.

M. Gilberg, B. Wetzel, and J.-K. Krüger, "Determination of Polymerization-Induced Volume Changes of UV-Curable Resins via TMOR," presented at the *Poly-Char 2022*, Halle, 2022.

M. Gilberg, J. K. Krüger and B. Wetzel, "Investigation and optimization of UV curable resins via TMOR for the production of low-shrinkage glass fiber composites," presented at the *23. Symposium Verbundwerkstoffe und Werkstoffverbunde*, Leoben, Austria, 2022.

L. Gryshchuk, S. Unik. "Influence of recycled polyurethane-polyols on the properties of rigid polyurethane foams for pre-insulated pipes" presented at the *International Conference Polymers 2022 – New trends in Polymer Science: Health of the Planet, Health of the People*, Turin, Italy, 2022.

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B. E. Güttler, „Bio-based Composites & Circular Economy“, presented at the *Composites Lounge Conference CLC 3.0*, online, 2022.

B. E. Güttler, „Biocomposites: the Past, Present and Future“, presented at the *Sustainable Composites Conference*, online, 2022.

T. Hoffmann, S. Becker, M. Duhovic and P. Mitschang, „Influence of Polymer Matrix on the Induction Heating Behavior of CFRPC Laminate,“ presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

J. Hausmann, Esha, S. Schmidt, J. Krummenacker, „Layerwise extraction of anisotropic mechanical properties of short fiber reinforced thermoplastics,“ presented at the *ITHC2022, 6th International Conference and Exhibition of Thermoplastic Composites*, Bremen, 2022.

J. P. Hüppauff, „Influence of the Boundary conditions on the low-velocity-impact behavior of curved composites plates,“ presented at the *SAMPE Europe Conference 2022*, Hamburg, 2022.

J. P. Hüppauff, T. Pfaff, N. Motsch-Eichmann and J. Hausmann, „Optimized design of lightweight hydrogen pressure vessels,“ presented at the *23. Symposium Verbundwerkstoffe und Werkstoffverbunde*, Leoben, Austria, 2022.

J. P. Hüppauff, N. Motsch-Eichmann and J. Hausmann, „Einfluss der Einspannung auf das Low-velocity-Impakt-Verhalten von gekrümmten Strukturen,“ presented at the *DLRK 2022, Deutscher Luft- u. Raumfahrtkongress*, Dresden, 2022.

J. P. Hüppauff, J. Hausmann, N. Motsch-Eichmann and T. Pfaff, „Optimized design for lightweight hydrogen pressure vessels,“ presented at the *5th International Conference Hybrid 2022 - Materials and Structures*, Leoben, 2022.

M. Kaiser, M. Gurka, and M. Kunzler, „Airfoil trailing edge morphing based on modified SMAHC concept: design, implementation, and experimental studies,“ presented at the *SPIE Smart Structures + Nondestructive Evaluation*, Long Beach, United States, 2022.

R. Köhler, F. Gortner, P. Mitschang, H. Lengsfeld and J. Schneider, „Development of a carbon fiber reinforced sheet molding compound for high temperature applications,“ presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

M. Kunzler, M. Kaiser, S. Fischer and M. Gurka, „Design, construction and simulation of a shape memory alloy based morphing airfoil demonstrator based on the agonist-antagonist principle,“ presented at the *SPIE Smart Structures + Nondestructive Evaluation*, Long Beach, United States, 2022.

J. Lee, M. Duhovic, T. Allen and P. Kelly, „Transverse Liquid Composite Molding Processes and Lubrication Effects in Advanced Composites Material Manufacturing“, presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

F. Mischo, A. Kenf, M. Kammler and S. Schmeer, „Influence of Manufacturing Procedure on Mechanical Properties of Continuous Fiber Reinforced Thermoplastics,“ presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

N. Motsch-Eichmann, J. Hüppauff, T. Pfaff, and J. Hausmann, „Novel Structure integrated hydrogen storage systems for aerospace applications,“ presented at the *SAMPE Europe Conference 2022*, Hamburg, 2022.

N. Motsch-Eichmann and S. Fischer, „Hybrid lightweight Front Loader Bucket in Metal/ Fiber Composite Construction“, presented at the *7. Internationales Commercial Vehicle Technology Symposium*, Kaiserslautern, 2022.

V. Nagaraj, „A comparative study on using BESO and SIMP to optimize the design of laminated carbon fiber reinforced plastics using topology optimization,“ presented at the *SAMPE Europe Conference 2022*, Hamburg, 2022.

V. Nagaraj, N. Motsch Eichmann und J. Hausmann, „Anisotropic topologia optimization of carbon fiber reinforced composite materials engineered with novel manufacturing technologies,“ presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

V. Nagaraj, J. P. Hüppauff, T. Pfaff, N. Motsch-Eichmann and J. Hausmann, „Neuartige strukturintegrierte Wasserstoffspeicher für Luftfahrtanwendungen,“ presented at the *DLRK 2022, Deutscher Luft- u. Raumfahrtkongress*, Dresden, 2022.

M. Novitska, M. Duhovic and D. May, „Microscale domain permeability calculations of fiber reinforcement structures based on the lattice Boltzmann method“, presented at the *VI International Scientific-Technical Conference, Actual Problems of Renewable Power Engineering, Construction and Environmental Engineering*, Kielce, Poland, 2022.

## Specialized Conferences

A. Nuhn, Esha, N. Motsch-Eichmann and J. Schlimbach, "Hybrid Processing of Coupling Rod", presented at the *VI International Scientific-Technical Conference, Actual Problems of Renewable Power Engineering, Construction and Environmental Engineering*, Kielce, Poland, 2022.

M. Salmis and P. Mitschang, "Influence of process parameters on properties of thermoplastic structural foams manufactured through hot press process," presented at the *ITHEC 2022, 6th International Conference and Exhibition of Thermoplastic Composites*, Bremen, 2022.

M. Salmis and P. Mitschang "Influence of compression behavior on skin formation in thermoplastic structural foams manufactured in a hot press process," presented at the *SAMPE Europe Conference 2022*, Hamburg, 2022.

S. Schmeer, F. Mischo and D. Scheliga, "Tapered geometry for testing continuous fiber reinforced thermoplastics under tension," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

T. Schmidt, E. Syerko, D. May, C. Binetruy, L. Silva, S.V. Lomov, S.G. Advani, "First insights from the virtual permeability benchmark on a fibrous microstructure," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

J. Schlimbach, A. Nuhn, T. Rief, and N. Motsch-Eichmann, "Structural optimization and process for a hybrid coupling rod", presented at the *Materials Science and Engineering MSE Congress*, Darmstadt, 2022.

D. Schommer, T. Hoffmann, M. Duhovic and D. May, "Prozess Digitalization of Carbon Fiber Sheet Molding Compounds (C-SMC)," presented at the *9. Fachkongress Composite Simulation*, Kaiserslautern, 2022.

D. Schommer, N. Sindhe Narayana, T. Rief, M. Duhovic, N. Motsch Eichmann and J. Hausmann, "Digital process chain for thermoplastic structural components with local unidirectional reinforcements for aerospace applications," presented at the *ICMAC 2022, International Conference on Manufacturing of Advanced Composites*, Sheffield, UK, 2022.

J. E. Semar, D. May and P. Mitschang, "Entwicklung einer modularen, forschungstauglichen RTM-Injektionsanlage für in-situ polymerisierende Thermoplaste", presented at the *23. Symposium Verbundwerkstoffe und Werkstoffverbunde*, Leoben, Austria, 2022.

M. Szczesny, P. Middendorf, M. Päßler and B. Bergmann, "Development and validation of a gravity independent inline impregnation method for multi-tow robotic coreless fiber winding," presented at the *SAMPE Europe Conference 2022*, Hamburg, 2022.

M. O. Voltz, O. Zöllner and P. Mitschang, "Effects of thermoforming parameters on surface quality of unidirectional reinforced amorphous thermoplastic composites," presented at the *ITHC 2022, 6th International Conference and Exhibition of Thermoplastic Composites*, Bremen, 2022.

J. Weber and J. Schlimbach, "Co-Consolidation of Tape-Preforms to realize local reinforcements presented at the stamp-forming," presented at the *SAMPE Europe Conference 2022*, Hamburg, 2022.

J. Weber and J. Schlimbach, "Herstellung von rCF-Tapes aus co-mingled Stapelfasergarnen", presented at the *15th Colloquium re4tex – recycling for textiles*, Chemnitz, 2022.

J. Weber and J. Schlimbach, "Co-consolidation and stamp-forming as an one-shot process to manufacture complex CF/PEEK parts," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

S. Weidmann and P. Mitschang, "In-line-quality assurance and process control fully automated welding process," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.

S. Weidmann and P. Mitschang, "In-line-quality assurance and process control fully automated welding process," presented at the *23. Symposium Verbundwerkstoffe und Werkstoffverbunde*, Leoben, Austria, 2022.

S. Weidmann and P. Mitschang, "Induction joining for thermoplastic fiber reinforced polymer composites and metals for automotive applications," presented at the *Automotive Circle: 25th Global Car Body Benchmarking Conference in Car Body Engineering*, Bad Nauheim, 2022.

B. Wetzel, E.I. Akpan, A. Gebhard, "Properties of delignified compacted wood," presented at the *4th International Conference on Polymer Tribology*, Stockholm, Sweden, 2022.

H. Yagdjian, J. Vogtmann and M. Gurka, "Development of a new Methodology for Automated Quantification of Impact Induced Damage Pattern in CFRP Measured by IRT and X-ray Radiography," presented at the *ECCM20, 20th European Conference on Composite Materials*, Lausanne, Switzerland, 2022.