

## Employment

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## Research interests

Polymeric pipe materials

Multi-layer structures

Applied fracture mechanics

Mechanical high-speed testing

Additive Manufacturing

## Journal articles

1. Shahroodi, Z, Zidar, D, Momeni, V, Arbeiter, F, Duretek, I, Krempl, N, Berger-Weber, G & Holzer, C 2025, 'Tailored Recycled Composites: Enhancing the Performance of Injection Moulded Post-Consumer Polypropylene Composites Using Box-Behnken Design', *Polymer Testing*, vol. 144.2025, no. March, 108743. <https://doi.org/10.1016/j.polymertesting.2025.108743>
2. Waly, C, Schulnig, S & Arbeiter, F 2024, 'Strain rate-dependent failure modes of material extrusion-based additively manufactured PETG: A study on crack deflection and penetration', *Theoretical and Applied Fracture Mechanics*, vol. 136.2025, no. April, 104834. <https://doi.org/10.1016/j.tafmec.2024.104834>
3. Waly, C, Höller, R, Griesser, T & Arbeiter, F 2024, 'Deformation and fracture of lithosphere-inspired polymeric multi-layer composites', *Results in Engineering*, vol. 24.2024, no. December, 103519. <https://doi.org/10.1016/j.rineng.2024.103519>
4. Messiha, M, Wiener, J, Arbeiter, F & Pinter, G 2024, 'Data-driven evaluation of the Paris' law parameters in polyethylene pipe grades — Increasing the precision of fracture mechanical lifetime estimation', *Engineering Fracture Mechanics*, vol. 311.2024, no. 25 November, 110540. <https://doi.org/10.1016/j.engfracmech.2024.110540>
5. Shahroodi, Z, Krempl, N, Zidar, D, Mayrhofer, T, Kirschnick, U, Arbeiter, F, Duretek, I & Holzer, C 2024, 'Waste-to-Value Feasibility Study: Assessing the Viability and Quality of Incorporating Different Postindustrial Glass-Fiber Composites into Postconsumer Recycled Polypropylene', *ACS Sustainable Chemistry and Engineering*, vol. 12.2024, no. 33, pp. 12619-12631. <https://doi.org/10.1021/acssuschemeng.4c04645>
6. Bergoglio, M, Rossegger, E, Schlögl, S, Griesser, T, Waly, C, Arbeiter, F & Sangermano, M 2024, 'Multi-Material 3D Printing of Biobased Epoxy Resins', *Polymers*, vol. 16.2024, no. 11, 1510. <https://doi.org/10.3390/polym16111510>
7. Gao, X, Guo, J, Zhang, D, Li, J, Su, Y, Arbeiter, F & Li, H 2024, 'Reducing part deformation of isotactic polypropylene specimens fabricated with powder bed fusion technique through controlling crystallization behaviors', *Journal of polymer science*, vol. 62.2024, no. 13, pp. 3025-3037. <https://doi.org/10.1002/pol.20240121>
8. Arbeiter, F, Schachinger, T, Wenighofer, R, Rieß, G, Steiner, M, Micic Batka, V, Griebaum, M, Laufer, V & Galler, R 2023, 'Maßgeschneiderte Sanierungsverfahren für die Tunnelentwässerung - "DrainRepair": Teil 2: Ergebnisbericht', *Berg- und hüttenmännische Monatshefte : BHM*, vol. 168.2023, no. 12, pp. 566-571. <https://doi.org/10.1007/s00501-023-01406-8>
9. Wainstein, J, Wiener, J, Arbeiter, F & Frontini, PM 2023, 'Determination of creep crack growth kinetics of ABS via the C\* approach at different temperatures', *Results in Engineering*, vol. 20.2023, no. December, 101481. <https://doi.org/10.1016/j.rineng.2023.101481>
10. Waly, C, Petersmann, S & Arbeiter, F 2023, 'Crack penetration versus deflection in extrusion-based additive manufacturing – Impact of nozzle temperature and morphology', *Theoretical and Applied Fracture Mechanics*, vol. 127.2023, no. October, 104032. <https://doi.org/10.1016/j.tafmec.2023.104032>
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20. Messiha, M, Frank, A, Arbeiter, F & Pinter, G 2022, 'On the slow crack growth process and associated structure–property relationships in polyamide 12 grades', *Journal of applied polymer science*, vol. 139.2022, no. 24, 52357. <https://doi.org/10.1002/app.52357>
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76. Arbeiter, F, Pinter, G & Frank, A 2014, 'Characterisation of quasi-brittle fatigue crack growth in pipe grade polypropylene block copolymer', *Polymer Testing*, vol. 37, pp. 186-192. <https://doi.org/10.1016/j.polymertesting.2014.05.016>
77. Brunbauer, J, Arbeiter, F, Stelzer, S & Pinter, G 2014, 'Stiffness based fatigue characterisation of CFRP', *Advanced materials research*, pp. 166-171. <https://doi.org/10.4028/www.scientific.net/AMR.891-892.166>
78. Arbeiter, F, Pinter, G, Redhead, A & Frank, A 2012, 'Kunststofftechnik Leoben: Rohrexpertise in Spanien Präsentiert', *VLK-News*, pp. 18-18.

## Activities

1. **Department of Materials Science and Engineering, Ghent University**  
Arbeiter, F. (Visiting researcher)  
15 Oct 2019 → 17 Oct 2019
2. **Institute of Physics of Materials of the Academy of Sciences of the Czech Republic**  
Arbeiter, F. (Visiting researcher)  
16 Feb 2017
3. **Institute of Physics of Materials of the Academy of Sciences of the Czech Republic**  
Arbeiter, F. (Visiting researcher)  
4 Mar 2019 → 22 Mar 2019
4. **Institute of Physics of Materials of the Academy of Sciences of the Czech Republic**  
Arbeiter, F. (Visiting researcher)  
13 Jan 2015
5. **Institute of Physics of Materials of the Academy of Sciences of the Czech Republic**  
Arbeiter, F. (Visiting researcher), Maurer, C. (Visiting researcher), Zach, D. (Visiting researcher) & Huszar, M. (Visiting researcher)  
18 Mar 2025 → 19 Mar 2025
6. **Università degli Studi di Brescia**  
Arbeiter, F. (Visiting researcher)  
8 Mar 2018 → 9 Mar 2018
7. **17-4PH Steel Parts Produced via Material Extrusion Additive Manufacturing, Debinding and Sintering**  
Holzer, C. (Speaker), Gonzales-Gutierrez, J. (contributor), Kukla, C. (contributor), Arbeiter, F. (contributor) & Schlauf, T. (contributor)  
18 Sept 2019

8. **Analyzing and Predicting Failure Modes in Mono- and Multi-Material Extrusion-based Additive Manufactured Structures**  
Waly, C. (Speaker), Schulnig, S. (contributor) & Arbeiter, F. (contributor)  
21 Nov 2024 → 22 Nov 2024
9. **Deformation and fracture of lithomers - a novel class of polymeric multilayer composite materials**  
Waly, C. (Speaker), Höller, R. (contributor), Pletz, M. (contributor), Griesser, T. (contributor) & Arbeiter, F. (contributor)  
24 Mar 2024 → 28 Mar 2024
10. **Exploring the Interplay Between Process, Structure, and Resulting Properties in Polymeric Multi-material Composites Inspired by Lithomimetics Principle**  
Waly, C. (Speaker) & Arbeiter, F. (contributor)  
19 May 2024 → 23 May 2024
11. **Grabungsfreie Rohrsanierungstechnologien und deren Einsetzbarkeit für Tunnel drainagen**  
Griebaum, M. (contributor) & Arbeiter, F. (Speaker)  
6 Jul 2022 → 8 Jul 2022
12. **17th International Conference on Deformation, Yield and Fracture of Polymers**  
Arbeiter, F. (Invited speaker)  
27 Mar 2018
13. **An Investigation on the Effects of Post-industrial Glass Fiber Flakes on the Properties of Recycled Polypopylene**  
Raguz, I. (Speaker), Shahroodi, Z. (contributor), Krempf, N. (contributor), Arbeiter, F. (contributor), Friesenbichler, W. (contributor) & Holzer, C. (contributor)  
23 May 2024
14. **EXPERIMENTAL INVESTIGATION INTO THE FRACTURE BEHAVIOR OF LAYERED POLYMERS**  
Arbeiter, F. (Invited speaker), Waly, C. (contributor), Wiener, J. (contributor) & Pletz, M. (contributor)  
3 Jul 2024
15. **Fracture of layered polymers**  
Arbeiter, F. (Speaker)  
1 Sept 2021
16. **Influence of crosslinker and water on mechanical properties of carboxylated nitrile butadiene rubber (XNBR)**  
Fleischmann, D. D. (Speaker), Arbeiter, F. (contributor), Kern, W. (contributor) & Schlögl, S. (contributor)  
23 Apr 2018 → 25 Apr 2018
17. **Methodische und werkstoffliche Besonderheiten bei der Bruchsicherheitsbewertung und Lebensdauerabschätzung von Polymerwerkstoffen mittels zyklischer mechanischer Beanspruchung**  
Arbeiter, F. (Invited speaker), Frank, A. (contributor), Schrittmesser, B. (contributor), Berer, M. (contributor), Hutař, P. (contributor) & Pinter, G. G. (contributor)  
28 Mar 2019
18. **29th Colloquium on Fatigue Mechanisms**  
Arbeiter, F. (Participant)  
21 Mar 2019 → 22 Mar 2019
19. **8. Internationale Tagung Kunststoffe im Anlagenbau**  
Arbeiter, F. (Invited speaker)  
10 Oct 2023 → 11 Oct 2023
20. **A cracking approach to inventing tough new materials: fracture stranger than friction**  
Arbeiter, F. (Participant)  
20 Sept 2021 → 21 Sept 2021
21. **International Symposium on Smart Materials**  
Arbeiter, F. (Speaker)  
14 Jun 2023 → 15 Jun 2023
22. **PSM Vortragsveranstaltung: Lebensdauerabschätzung von Polymerwerkstoffen**  
Arbeiter, F. (Invited speaker)  
28 Mar 2019
23. **16th International Conference on Deformation, Yield and Fracture of Polymers**  
Arbeiter, F. (Speaker)  
29 Mar 2015 → 2 Apr 2015
24. **17th International Conference on Deformation, Yield and Fracture of Polymers**  
Arbeiter, F. (Speaker)  
25 Mar 2018 → 29 Mar 2018
25. **18th European Mechanics of Materials Conference**  
Arbeiter, F. (Speaker) & Wiener, J. (Speaker)  
4 Apr 2022 → 6 Apr 2022

26. **18th International Conference on Deformation, Yield and Fracture of Polymers**  
Arbeiter, F. (Invited speaker)  
13 Apr 2022
27. **19th International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics**  
Arbeiter, F. (Speaker)  
15 May 2019 → 17 May 2019
28. **1st Virtual ESIS TC4 Conference on Fracture of Polymers, Composites and Adhesives**  
Gosch, A. (Speaker) & Arbeiter, F. (Speaker)  
28 Sept 2021 → 29 Sept 2021
29. **1st Virtual European Conference on Fracture - VECF1**  
Arbeiter, F. (Speaker)  
29 Jun 2020 → 1 Jul 2020
30. **22. Leobener Kunststoff-Kolloquium "Oberflächen und Grenzflächen in der Polymertechnologie"**  
Arbeiter, F. (Speaker)  
14 Nov 2013 → 15 Nov 2013
31. **27. Leobener Kunststoff-Kolloquium**  
Arbeiter, F. (Invited speaker)  
19 Apr 2018 → 20 Apr 2018
32. **28. Leobener Kunststoff-Kolloquium 2019**  
Arbeiter, F. (Invited speaker)  
25 Apr 2019 → 26 Apr 2019
33. **29. Leobener Kunststoff-Kolloquium**  
Arbeiter, F. (Participant)  
15 Sept 2021 → 16 Sept 2021
34. **32. Leobener Kunststoffkolloquium - 32nd Leoben-Conference on Polymer Engineering and Science 'New Materials – New Perspectives'**  
Arbeiter, F. (Member of programme committee)  
21 Nov 2024
35. **32. Leobener Kunststoffkolloquium - 32nd Leoben-Conference on Polymer Engineering and Science 'New Materials – New Perspectives'**  
Arbeiter, F. (Speaker)  
21 Nov 2024
36. **4a Technology Day 2020**  
Arbeiter, F. (Speaker)  
3 Mar 2020 → 4 Mar 2020
37. **4th International Conference on Polymer Process Innovation (PPI)**  
Arbeiter, F. (Member of programme committee)  
18 Sept 2024 → 20 Sept 2024
38. **68. Geomechanik-Kolloquium 2019**  
Schachinger, T. (Speaker), Arbeiter, F. (Speaker), Eichinger, S. (Participant) & Saliger, F. (Participant)  
10 Oct 2019
39. **7th International Conference on Fracture of Polymers, Composites and Adhesives**  
Arbeiter, F. (Speaker)  
14 Sept 2014 → 18 Sept 2014
40. **7th International Conference on Fracture of Polymers, Composites and Adhesives**  
Arbeiter, F. (Speaker)  
17 Sept 2014
41. **8th International Conference on Fracture of Polymers, Composites and Adhesives**  
Arbeiter, F. (Participant)  
10 Sept 2017 → 14 Sept 2017
42. **9th International Conference on the Fracture of Polymers and Composites**  
Arbeiter, F. (Speaker)  
24 Mar 2024 → 27 Mar 2024
43. **9th International Conference on the Fracture of Polymers and Composites**  
Arbeiter, F. (Chair)  
24 Mar 2024 → 27 Mar 2024
44. **Advances in Polymer Science and Technology (APST) 3**  
Arbeiter, F. (Speaker)  
9 Sept 2013 → 10 Sept 2013

45. **ASPM2013 - Austrian Slovenian Polymer Meeting**  
Arbeiter, F. (Speaker)  
3 Apr 2013 → 5 Apr 2013
46. **Danube Vitava Sava Polymer Meeting - DVSPM 2017**  
Arbeiter, F. (Speaker)  
6 Sept 2017
47. **Danube Vitava Sava Polymer Meeting - DVSPM 2017**  
Arbeiter, F. (Speaker)  
6 Sept 2017
48. **ESIAM21 - Second European Conference on Structural Integrity of Additively Manufactured Materials**  
Arbeiter, F. (Speaker)  
8 Sept 2021 → 10 Sept 2021
49. **Eurotec 2013**  
Arbeiter, F. (Speaker)  
4 Jul 2013 → 5 Jul 2013
50. **Fatigue 2014**  
Arbeiter, F. (Speaker)  
2 Mar 2014 → 7 Mar 2014
51. **Frontiers in polymer science**  
Arbeiter, F. (Participant)  
20 May 2015 → 22 May 2015
52. **Plastic Pipes in Infrastructure**  
Arbeiter, F. (Speaker)  
19 Apr 2016 → 21 Apr 2016
53. **Plastic Pipes XVI**  
Arbeiter, F. (Speaker)  
24 Sept 2012 → 26 Sept 2012
54. **Plastic Pipes XVII**  
Arbeiter, F. (Speaker)  
22 Sept 2014 → 24 Sept 2014
55. **Plastic Pipes XVIII**  
Arbeiter, F. (Speaker)  
14 Sept 2016
56. **Polymer Meeting 14**  
Arbeiter, F. (Invited speaker)  
30 Aug 2021 → 2 Sept 2021
57. **Polymertec 2014**  
Arbeiter, F. (Speaker)  
25 Jun 2014 → 27 Jun 2014
58. **PPS2015 - Polymer Processing Society Conference 2015**  
Arbeiter, F. (Speaker)  
21 Sept 2015 → 25 Sept 2015
59. **SPE ANTEC 2017**  
Arbeiter, F. (Speaker)  
8 May 2017 → 10 May 2017
60. **SPE ANTEC 2017**  
Arbeiter, F. (Speaker)  
9 May 2017
61. **SPE ANTEC 2018**  
Arbeiter, F. (Speaker)  
6 May 2018 → 10 May 2018
62. **SPE ANTEC 2018**  
Gosch, A. (Speaker), Arbeiter, F. (Speaker), Berer, M. (Speaker), Wiener, J. (Speaker), Frank, A. (Speaker) & Pinter, G. G. (Speaker)  
8 May 2018