

Journal Papers

(updated 17 Nov. 2016)

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A. Adhesive Joining

1. Fernlund, G. and Spelt, J.K. "Analytical Method for Calculating Adhesive Joint Fracture Parameters", *Engineering Fracture Mechanics*, Vol. 40, No. 1, pp. 119-132, 1991.
2. Fernlund, G. and Spelt, J.K. "Failure Load Prediction: I. Analytical Method", *International J. of Adhesion and Adhesives*, Vol. 11, No. 4, pp. 213-220, October 1991.
3. Fernlund, G. and Spelt, J.K. "Failure Load Prediction: II. Experimental Study", *International J. of Adhesion and Adhesives*, Vol. 11, No. 4, pp. 221-227, October 1991.
4. Dickstein, P.A., Spelt, J.K. and Sinclair, A.N. "Application of a Higher Order Crossing Feature to Non-Destructive Evaluation: A Sample Demonstration of Sensitivity to the Condition of Adhesive Joints", *Ultrasonics*, Vol. 29, No. 5, pp. 355-365, September 1991.
5. Dickstein, P.A., Spelt, J.K., Sinclair, A.N. and Bushlin, Y. "Investigation of Non-destructive Monitoring of the Environmental Degradation of Structural Adhesive Joints", *Materials Evaluation*, Vol. 49, No. 12, pp. 1498-1505, December 1991.
6. Papini, M. and Spelt, J.K. "Crack Detection in Adhesive Joints: Use of Strain Gages in Aggressive Environments", *J. Adhesion Science and Technology*, Vol. 6, No. 10, pp. 1157-1164, 1992.
7. Dickstein, P.A., Spelt, J.K., Sinclair, A.N., Leibovitch, H. and Girshovich, S. "Ultrasonic Evaluation of the Degradation of Composite Adhesive Joints", *Non-destructive Testing and Evaluation*, Vol. 10, pp. 295-316, 1993.
8. Fernlund, G. and Spelt, J.K. "Mixed-Mode Fracture Characterisation of Adhesive Joints", *Composites Science and Technology*, Vol. 50, pp. 441-449, 1994.
9. Fernlund, G., McCammond, D. and Spelt, J.K. "Curvilinear Formulation of the 3-D J-Integral: Application to Delamination Cracking of Curved Laminates", *Composite Structures*, Vol. 28, pp. 123-130, 1994.

10. Nairn, B.J., Dickstein, P.D., Plausinis, D.J. and Spelt, J.K. "Dielectric Response of Adhesive Joints to Water Absorption", *J. of Adhesion*, Vol. 48, pp. 121-136, 1995.
11. Fernlund, G., Papini, M., McCammond, D. and Spelt, J.K. "Fracture Load Predictions of Adhesive Joints", *Composites Science and Technology*, Vol. 51, pp. 587-600, 1994.
12. Fernlund, G. and Spelt, J.K., "Mixed-Mode Energy Release Rates for Adhesively Bonded Beam Specimens", *J. Composites Technology and Research*, Vol. 16, pp. 234-243, 1994.
13. Papini, M., Fernlund, G. and Spelt, J.K., "The Effect of Geometry on the Fracture of Adhesive Joints", *International J. of Adhesion and Adhesives*, Vol. 14, No. 1, pp. 5-13, 1994.
14. Papini, M., Fernlund, G. and Spelt, J.K., "Effect of Crack Growth Mechanism on the Prediction of Fracture Loads of Adhesive Joints", *Composites Science and Technology*, Vol. 52, No. 4, pp. 561-570, 1994.
15. Fernlund, G., Chaaya, R. and Spelt, J.K., "Fracture Load Predictions of Adhesive T-Joints", *J. Adhesion*, Vol. 50, pp. 181-190, 1995.
16. Plausinis, D. and Spelt, J.K., "Application of a New Constant G Load-Jig to Creep Crack Growth in Adhesive Joints", *Int. J. of Adhesion and Adhesives*, Vol. 15, No. 4, pp. 225-232, 1995.
17. Plausinis, D. and Spelt, J.K., "Designing for Time-Dependent Crack Growth in Adhesive Joints", *Int. J. Adhesion and Adhesives*, Vol. 15, No. 3, pp. 143-154, 1995.
18. Fernlund, G., Lanting, H. and Spelt, J.K., "Mixed Mode II/III Fracture of Adhesive Joints", *J. Composites Technology and Research*, Vol. 17, No. 4, pp. 317-330, 1995.
19. Moidu, A., Sinclair, A.N. and Spelt, J.K. "Analysis of the Peel Test: Prediction of Adherend Plastic Dissipation and Extraction of Fracture Energy", *J. Testing and Evaluation*, Vol. 23, No. 4, pp. 241-253, 1995.
20. Safavi Ardebili, V., Sinclair, A.N. and Spelt, J.K. "Ultrasonic Couplants for Acoustic Microscopy of Low Speed Materials", *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, Vol. 44, No. 1, pp. 102-107, 1997.
21. Lanting, H. and Spelt, J.K. "Shear Fracture of Adhesively-Bonded Rigid Elements", *Composites Part B*, Vol. 28B, No. 3, pp. 319-329, 1997.
22. Safavi-Ardebili, V., Sinclair, A.N. and Spelt, J.K. "Experimental Investigation of the Interphase in an Epoxy-Aluminium System", *J. Adhesion*, Vol. 62, pp. 93-111, 1997.
23. Dessureault, M. and Spelt, J.K. "Observations of Fatigue Crack Initiation and Propagation in an Epoxy Adhesive", *Int. J. Adhesion and Adhesives*, Vol. 17, No. 3, pp. 183-195, 1997.
24. Wylde, J. and Spelt, J.K. "Measurement of Adhesive Fracture Properties as a Function of Environmental Degradation", *Int. J. of Adhesion and Adhesives*, Vol. 18, No.4, pp. 237-246, 1998.
25. Moidu, A., Sinclair, A.N. and Spelt, J.K. "Adhesive Joint Durability Assessed Using Open-Faced Peel Specimens", *J. Adhesion*, Vol. 65, pp. 239-257, 1998.
26. Vintilescu, I. and Spelt, J.K. "Mixed-Mode I-II-III Fracture Characterisation of Adhesive Joints", *J. Composites Technology and Research*, Vol. 20, No. 2, pp. 129-139, 1998.
27. Moidu, J., Sinclair, A.N. and Spelt, J.K. "On the Determination of Fracture Energy Using the Peel Test", *J. Testing and Evaluation*, Vol. 26, No. 3, pp. 247-254, 1998.
28. Vintilescu, I. and Spelt, J.K. "Fracture Load Prediction of Adhesive Joints Under Mixed-Mode I-II-III Conditions", *J. Composites Technology and Research*, Vol. 20, No. 3, pp. 187-197, 1998.

29. Moidu, A.K., Sinclair, A.N. and Spelt, J.K. "Non-destructive Characterisation of Adhesive Joint Durability Using Ultrasonic Reflection Measurements", *Research in Non-destructive Evaluation*, Vol. 11, pp. 81-95, 1999.
30. Tu, Y. and Spelt, J.K. "Blistering as a Form of Degradation in Adhesive Joints", *J. Adhesion*, Vol. 72, No. 3, pp. 359-372, 2000.
31. Safavi Ardebili, V., Sinclair, A.N. and Spelt, J.K. "Elastic Properties of an Epoxy-Aluminium Interphase Measured Using an Acoustic Microscope", *J. Adhesion*, Vol. 73, pp. 385-416, 2000.
32. Wang, R.X., Sinclair, A.N. and Spelt, J.K., "Strength of Adhesive Joints with Adherend Yielding: I – Analytical Model", *J. Adhesion*, Vol. 79, No. 1, pp. 23-48, 2003.
33. Wang, R.X., Sinclair, A.N. and Spelt, J.K., "Strength of Adhesive Joints with Adherend Yielding: II-Peel Experiments and Failure Criteria", *J. Adhesion*, Vol. 79, No. 1, pp. 49-68, 2003.
34. Cui, J., Wang, R., Sinclair, A.N. and Spelt, J.K., "A Calibrated Finite Element Model of Adhesive Peeling", *Int. J. Adhesion and Adhesives*, Vol. 23, No. 3, pp. 199-206, 2003.
35. Wang, R.X., Shayganpur, A., Sareskani, S. and Spelt, J.K., "Peel Load Prediction Using Adhesive Sandwich Models", *J. Adhesion*, Vol. 82, pp. 39-61, 2006.
36. Jastrzebski, M.U., Sinclair, A.N., Raizenne, D.D. and Spelt, J.K., "Development of Adhesive Bonds with Reduced Strength as Ultrasonic NDE Benchmarks", *Int. J. Adhesion and Adhesives*, Vol. 29, pp. 372-379, 2009.
37. da Silva, L.F.M., das Neves, P.J.C., Adams, R.D. and Spelt, J.K., "Analytical Models of Adhesively Bonded Joints - Part I: Literature Survey", *Int. J. Adhesion and Adhesives*, Vol. 29, pp. 319-330, 2009.
38. da Silva, L.F.M., das Neves, P.J.C., Adams, R.D., Wang, A. and Spelt, J.K., "Analytical Models of Adhesively Bonded Joints – Part II: Comparative Study", *Int. J. Adhesion and Adhesives*, Vol. 29, No. 3, pp. 331-341, 2009.
39. Azari, S., Eskandarian, M., Papini, M., Schroeder, J.A., Faulkner, D.L. and Spelt, J.K., "Fracture Load Predictions and Measurements for Highly Toughened Epoxy Adhesive Joints", *Engineering Fracture Mechanics*, Vol. 76, pp. 2039-2055, 2009.
40. S. Azari, S., Papini, M., Schroeder, J.A. and Spelt, J.K., "The Effect of Mode Ratio and Bond Interface on the Fatigue Behavior of a Highly-Toughened Epoxy", *Eng. Fracture Mech.*, Vol. 77, pp. 395-414, 2010.
41. Ameli, A., Papini, M., Schroeder, J.A. and Spelt, J.K., "Fracture R-curve characterization of toughened epoxy adhesives", *Eng. Fracture Mechanics*, Vol. 77, pp. 521-534, 2010.
42. Azari, S., Papini, M., Schroeder, J.A. and Spelt, J.K., "Fatigue Threshold Behavior of Adhesive Joints", *Int. J. Adhesion and Adhesives*, Vol. 30, pp. 145-159, 2010.
43. Ameli, A., Datla, N.V., Papini, M. and Spelt, J.K., "Hygrothermal Properties of Highly Toughened Epoxy Adhesives", *J. of Adhesion*, Vol. 86, pp. 698-725, 2010.
44. Azari, S., Papini, M. and Spelt, J.K., "Effect of Surface Roughness on the Performance of Adhesive Joints under Static and Cyclic Loading", *J. of Adhesion*, Vol. 86, pp. 742-764, 2010.
45. Datla, N.V., Papini, M., Schroeder, J.A. and Spelt, J.K., "Modified DCB Specimen for Mixed-mode Fatigue Testing of Adhesively Bonded Thin Sheets", *Int. J. Adhesion and Adhesives*, Vol. 30, pp. 439-447, 2010.
46. Ameli, A., Papini, M. and Spelt, J.K., "Fracture R-curve of a Toughened Epoxy Adhesive as a Function of Irreversible Degradation", *Materials Science and Engineering-A*, Vol. 527, pp. 5105-5114, 2010.
47. Azari, S., Papini, M. and Spelt, J.K., "Effect of Adhesive Thickness on Fatigue and Fracture of Toughened Epoxy Joints – Part I: Experiments", *Eng. Fracture Mechanics*, Vol. 78, pp. 153-162, 2011.

48. Azari, S., Papini, M. and Spelt, J.K., "Effect of Adhesive Thickness on Fatigue and Fracture of Toughened Epoxy Joints - Part II. Analysis and Finite Element Modeling", *Eng. Fracture Mechanics*, Vol. 78, pp. 138-152, 2011.
49. Ameli, A., Papini, M. and Spelt, J.K., "Hygrothermal Degradation of Two Rubber-toughened Epoxy Adhesives: Application of Open-faced Fracture Tests", *Int. J. Adhesion and Adhesives*, Vol. 31, pp. 9-19, 2010.
50. Datla, N.V., Ulicny, J., Carlson, B., Papini, M. and Spelt, J.K., "Mixed-mode Fatigue Behavior of Degraded Toughened Epoxy Adhesive Joints", *Int. J. Adhesion and Adhesives*, Vol. 31, pp. 88-96, 2011.
51. Datla, N.V., Papini, M., Ulicny, J., Carlson, B. and Spelt, J.K., "The Effects of Test Temperature and Humidity on the Mixed-mode Fatigue Behavior of a Toughened Adhesive Aluminum Joint", *Eng. Fracture Mech.*, Vol. 78, pp. 1125-1139, 2011.
52. Ameli, A., Azari, S., Papini, M. and Spelt, J.K., "Crack Path Selection in the Fracture of Fresh and Degraded Epoxy Adhesive Joints", *Eng. Fracture Mechanics*, Vol. 78, pp. 1986-2003, 2011.
53. Ameli, A., Papini, M. and Spelt, J.K., "Evolution of Crack Path and Fracture Surface with Degradation in Rubber-Toughened Epoxy Adhesive Joints: Application to Open-Faced Specimens", *Int. J. of Adhesion and Adhesives*, Vol. 31, pp. 530-540, 2011.
54. Ameli, A., Datla, N., Papini, M. and Spelt, J.K., "Prediction of Environmental Degradation of Closed Adhesive Joints using Data from Open-faced Specimens", *Composite Structures*, Vol. 94, pp. 779-786, 2012.
55. Datla, N.V., Ameli, A., Papini, M. and Spelt, J.K., "Effects of Aging on the Fatigue Behavior of Two Toughened Epoxy Adhesives", *Engineering Fracture Mechanics*, Vol. 79, pp. 61-77, 2012.
56. Azari, S., Papini, M. and Spelt, J.K., "Effect of Substrate Modulus on the Fatigue Behavior of Adhesively Bonded Joints", *Materials Science and Engineering A*, Vol. 534, pp. 594-602, 2012.
57. Azari, A., Ameli, A., Papini, M. and Spelt, J.K., "Analysis and Design of Adhesively Bonded Joints for Fatigue and Fracture Loading", *Journal of Adhesion Science and Technology*, DOI:10.1080/01694243.2012.748434, 2012.
58. Ameli, A., Azari, S., Papini, M. and Spelt, J.K., "Hygrothermal Degradation of Structural Adhesive Joints: The Characterization and Prediction of Fracture Toughness", *J. Adhesion Science and Technology*, DOI:10.1080/01694243.2012.730028, 2012.
59. Azari, A., S., Ameli, A., Papini, M. and Spelt, J.K., "Adherend Thickness Influence on Fatigue Behavior and Fatigue Failure Prediction of Adhesively Bonded Joints", *Composites: Part A*, Vol. 48, pp. 181-191, 2013.
60. Jhin, G., Azari, S., Ameli, A., Datla, N., Papini, M. and Spelt, J.K., "Crack growth rate and crack path in adhesively bonded joints: Comparison of creep, fatigue and fracture", *Int. J. Adhesion and Adhesives*, Vol. 46, pp. 74-84, 2013.
61. Azari, S., Papini, M. and Spelt, J.K., "Fatigue Threshold and Crack Growth Rate of Adhesively Bonded Joints as a Function of Load/Displacement Ratio", *Composites: Part A*, Vol. 57C, pp. 59-66, 2014.

B. Microelectronics Reliability

1. Djurovic, B., Puzzo, C. and Spelt, J.K. "Analysis of Thermal Warpage in a PCB with an Array of PTH Connectors", IEEE Transactions - Components, Packaging and Manufacturing Technology, Vol. 22, No. 3, pp. 414-420, 1999.
2. Hudson, A.J., Martin, S.C., Hubert, M. and Spelt, J.K., "Optical Measurement of Shrinkage in UV-Cured Adhesives", ASME J. Electronic Packaging, Vol. 124, No. 4, 2002.
3. Qi, Y., Zbrzezny, A.R., Agia, M., Lam, R., Ghorbani, H., Snugovsky, P., Perovic, D.D. and Spelt, J.K., "Accelerated Thermal Fatigue of Lead-Free Solder Joints as a Function of Reflow Cooling Rate", J. Electronic Materials, Vol. 33, No. 12, pp. 1497-1506, 2004.
4. Ma, J. and Spelt, J.K., "Analytical Modeling of Thermal Stresses in Plated Through Via (PTH) Structures", IEEE Transactions on Advanced Packaging, Vol. 28, No. 4, pp. 704-712, 2005.
5. Ghorbani, H. and Spelt, J.K., "Interfacial Thermal Stresses in Trilayer Assemblies", ASME J. Electronic Packaging, Vol. 127, pp. 314-323, 2005.
6. Qi, Y., Lam, R., Ghorbani, H., Snugovsky, P. and Spelt, J.K., "Temperature Profile Effects in Accelerated Thermal Cycling of SnPb and Pb-free Solder Joints, Microelectronics Reliability, Vol. 46, No. 2-4, pp. 574-588, 2006.
7. Ghorbani, H.R. and Spelt, J.K., "Interfacial Thermal Stresses in Solder Joints of Leadless Chip Resistors", Microelectronics Reliability, Vol. 46, pp. 873-884, 2006.
8. Lam, R. and Spelt, J.K., "Comparison of Weibull Small Samples Using Monte Carlo Simulations", Quality and Reliability Engineering International, Vol. 23, pp. 503-513, 2007.
9. Ghorbani, H.R. and Spelt, J.K., "Analytical Elasto-Creep Model of Interfacial Thermal Stresses and Strains in Trilayer Assemblies", Int. J. Solids and Structures, Vol. 43, pp. 7424-7449, 2006.
10. Qi, Y., Ghorbani, H.R. and Spelt, J.K., "Thermal Fatigue of SnPb and SAC Resistor Joints: Analysis of Stress-Strain as a Function of Cycle Parameters", IEEE Transactions on Advanced Packaging, Vol. 43, No. 4, pp. 690-700, 2006.
11. Ghorbani, H.R. and Spelt, J.K., "An Analytical Elasto-Creep Model of Solder Joints in Leadless Chip Resistors: Part I – Development and Verification", IEEE J. Adv. Packaging, Vol. 30, No. 4, pp. 681-694, 2007.
12. Ghorbani, H.R. and Spelt, J.K. An Analytical Elasto-Creep Model of Solder Joints in Leadless Chip Resistors: Part II – Applications in Fatigue Reliability Predictions for SnPb and Lead-Free Solders", IEEE J. Adv. Packaging, Vol. 30, No. 4, pp. 695-704, 2007.
13. Belashov, O. and Spelt, J.K., "Thermal Stress Concentration Factors for Defects in Plated-Through-Vias", Microelectronics Reliability, Vol. 48, pp. 225-244, 2008.
14. Shirley, D., Ghorbani, H. and Spelt, J.K., "The Effect of Primary Creep in the Modeling of Thermal Fatigue of SnPb and SnAgCu Solder Joints", Microelectronics Reliability, Vol. 48, pp. 455-470, 2008.
15. Shirley, D.R. and Spelt, J.K., "Primary Creep in Sn3.8Ag0.7Cu Solder, Part I: Theory, Experiments and Data Reduction", Journal Electronic Materials, Vol. 38, No. 11, pp. 2376-2387, 2009.
16. Shirley, D.R. and Spelt, J.K., "Primary Creep in Sn3.8Ag0.7Cu Solder, Part II: Constitutive Creep Model Development and Finite Element Analysis", Journal Electronic Materials, Vol. 38, No. 11, pp. 2388-2397, 2009.
17. Nadimpalli, Siva P.V., Spelt, J.K., "R-curve behavior of Cu-Sn3.0AgCu0.5 solder joints: Effect of mode ratio and microstructure", Materials Science and Engineering A, Vol. 527, pp. 724-734, 2010.

18. Nadimpalli, S.P.V. and Spelt, J.K., "Fracture Load Prediction of Lead-free Solder Joints", Eng. Fracture Mechanics, Vol. 77, pp. 3446-3461, 2010.
19. Nadimpalli, S.P.V. and Spelt, J.K., "Mixed-mode Fracture Load Prediction in Lead-free Solder Joints", Eng. Fracture Mechanics, Vol. 78, pp. 317-333, 2011.
20. Nadimpalli, S.P.V. and Spelt, J.K., "Effect of Geometry on the Fracture Behavior of Lead-free Solder Joints", Eng. Fracture Mech., Vol. 87, pp. 1169-1181, 2011.
21. Belashov, O. and Spelt, J.K., "Analytical Modeling of Cyclic Thermal Stress and Strain in Plated-Through-Vias with Defects", IEEE Transaction on Components, Packaging and Manufacturing Technology, Vol. 1, No. 5, pp. 695-704, 2011.
22. Nadimpalli, S.P.V. and Spelt, J.K., "Prediction of Pad Cratering Fracture at the Copper Pad – Printed Circuit Board Interface", Microelectronics Reliability, Vo. 52, pp. 1454-1463, 2012.
23. Nourani, A. and Spelt, J.K., "Effect of Processing Parameters on High-speed Fracture of Lead-free Solder Joints", Eng. Fracture Mech., Vol. 142, pp. 64-78, 2015.
24. Nourani, A., Akbari, S. and Spelt, Jan K., "Comparison of Solder Joint Fracture Behavior in Arcan and DCB Specimens", Eng. Fracture Mech., Vol. 143, pp. 47-62, 2015.
25. Nourani, A. and Spelt, J.K., "Combined Effect of Strain-rate and Mode-ratio on the Fracture of Lead-free Solder Joints", Materials and Design, Vol. 85, pp. 115-126, 2015.
26. Akbari, S., Nourani, A. and Spelt, J.K., "Effect of Solder Joint Length on Fracture under Bending", J. Electronic Materials, Vol. 45, No. 1, pp. 473-485, 2016.
27. Nourani, A., Akbari, S. and Spelt, J.K., "Fracture Load Prediction of BGA Solder Joints: Modeling and Experimental Verification", Int. J. Solids and Structures, Vol. 90, pp. 30-44, 2016.
28. Akbari, S., Nourani, A. and Spelt, J.K., "Effect of adhesive fillet geometry on bond strength between microelectronic components and composite circuit boards", Composites Part A: Applied Sci. and Manufacturing, Vol. 87, pp. 228-236, 2016.
29. Akbari, S., Nourani, A. and Spelt, J.K., "Bending Strength of Adhesive Joints in Microelectronic Components: Comparison of Edge-Bonding and Underfilling, Composites Part A: Applied Sci. and Manufacturing, Vol. 88, pp. 178-189, 2016.

C. Abrasive Air-Jet Micro-machining

1. Papini, M., Ciampini, D., Krajac, T. and Spelt, J.K., "Computer Modelling of Interference Effects in Erosion Testing: Effect of Plume Shape", Wear, Vol. 255, pp. 85-97, 2003.
2. Ciampini, D., Spelt, J.K. and Papini, M., "Computer Simulation of Interference Effects in Particle Streams Following Impact with a Flat Surface, Part II: Parametric Study and Implications for Solid Particle Erosion and Shot Peening", Wear, Vo. 254, No. 3-4, pp. 250-264, 2003.
3. Ghobeity, A., Hailu, G., Krajac, T., Spelt, J.K. and Papini, M., "Process Repeatability in Abrasive Jet Micromachining", J. Materials Processing Technology, Vol. 190, pp. 51-60, 2007.
4. Ghobeity, A., Krajac, T., Burzynski, T., Papini, M. and Spelt, J.K., "Surface Evolution Models in Abrasive Jet Micromachining", Wear, Vol. 264, pp. 185-198, 2007.
5. Getu, H., Ghobeity, A., Spelt, J.K. and Papini, M., "Abrasive Jet Micromachining of Polymethylmethacrylate", Wear, Vol. 263, pp. 1008-1015, 2007.

6. Ghobeity, A., Papini, M. and Spelt, J.K., "Computer Simulation of Particle Interference in Abrasive Jet Micromachining", *Wear*, Vol. 263, pp. 265-269, 2007.
7. Ghobeity, A., Getu, H., Papini, M. and Spelt, J.K., "Surface Evolution Models for Abrasive Jet Micromachining of Holes in Glass and Polymethylmethacrylate (PMMA)", *J. of Micromechanics and Microengineering*, Vol. 17, pp. 2175-2185, 2007.
8. Getu, H., Ghobeity, A., Spelt, J.K. and Papini, M., "Abrasive Jet Micromachining of Acrylic and Polycarbonate Polymers at Oblique Angles of Attack", *Wear*, Vol. 265, pp. 888-901, 2008.
9. Ghobeity, A., Spelt, J.K. and Papini, M., "Abrasive Jet Micro-machining of Planar Areas and Transitional Slopes", *J. of Micromechanics and Microengineering*, Vol. 18, No. 5, 2008.
10. Getu, H., Spelt, J.K. and Papini, M., "Cryogenically Assisted Abrasive Jet Micromachining of Polymers", *J. Micromechanics and Microengineering*, Vol. 18, No. 11, 2008.
11. Ghobeity, A., Papini, M. and Spelt, J.K., "Abrasive Jet Micro-machining of Planar Areas and Transitional Slopes in Glass using Target Oscillation", *J. of Materials Processing Technology*, Vol. 209, pp. 5123-5132, 2009.
12. Ivantsiv, V., Spelt, J.K. and Papini, M., "Mass Flow Rate Measurement in Abrasive Jets Using Acoustic Emission", *Measurement Science and Technology*, Vol. 20, No. 9, 095402 (8pp), 2009.
13. Papini, M., Oladeinde, A.O., Spelt, J.K. and Aumuller, P.M., "The Solid Particle Erosion Behaviour of Dental Enamel Using a Novel Air Abrasion System", *Int. J. Abrasive Technology*, Vol. 3, No. 2, pp. 92-104, 2010.
14. Getu, H., Spelt, J.K. and Papini, M., "Thermal Analysis of Cryogenically Assisted Abrasive Jet Micromachining of PDMS", *Int. J. Machine Tools and Manufacture*, Vol. 51, pp. 721-730, 2011.
15. Gradeen, A.G., Spelt, J.K. and Papini, M., "Cryogenic abrasive jet machining of polydimethylsiloxane at different temperatures", *Wear*, Vol. 274-275, pp. 335-344, 2012.
16. Ghobeity, A., Crabtree, H.J., Papini, M. and Spelt, J.K., "Characterisation and Comparison of Microfluidic Chips Formed Using Abrasive Jet Micro-Machining and Wet Etching", *J. of Micromechanics and Microengineering*, Vol. 22, 025014 (10pp) [doi:10.1088/0960-1317/22/2/025014](https://doi.org/10.1088/0960-1317/22/2/025014), 2012.
17. Getu, H., Spelt, J.K. and Papini, M., "Reduction of Particle Embedding in Solid Particle Erosion of Polymers", *Wear*, Vol. 270, pp. 922-928, 2011.
18. Akbarzadeh, E., Elsaadawy, E., Sherik, A.M., Spelt J.K. and Papini, M., "The Solid Particle Erosion of 12 Metals Using Magnetite Erodent", *Wear*, Vol. 282-283, pp. 40-51, 2012.
19. Getu, H., Spelt, J.K. and Papini, M., "Conditions Leading to the Embedding of Angular and Spherical Particles during the Solid Particle Erosion of Polymers", *Wear*, Vol. 292-293, pp. 159-168, 2012.
20. Ally, S., Spelt, J.K. and Papini M., "Prediction of Machined Surface Evolution in the Abrasive Jet Micro-machining of Metals", *Wear*, Vol. 292-293, pp. 89-99, 2012.
21. Jafar, R. Haj Mohammad, Spelt, J.K. and Papini, M., "Surface Roughness and Erosion Rate of Abrasive Jet Micro-machined Channels: Experiments and Analytical Model", *Wear*, Vol. 303, pp. 138-145, 2013.
22. Jafar, R. Haj Mohammad, Spelt, J.K. and Papini, M., "Numerical Simulation of Surface Roughness and Erosion Rate of Abrasive Jet Micro-machined Channels", *Wear*, Vol. 303, pp. 302-312, 2013.
23. Gradeen, A.G., Papini, M. and Spelt, J.K., "The effect of temperature on the cryogenic abrasive jet micro-machining of polytetrafluoroethylene, high carbon steel and polydimethylsiloxane", *accepted Wear*, June 2014.

24. Jafar, R., Haj Mohammad, Papini, M. and Spelt, J.K., "Simulation of Erosive Smoothing in the Abrasive Jet Micro-machining of Glass", *Journal of Materials Processing Technology*, Vol. 213, pp. 2254-2261, 2013.
25. Jafar, R., Spelt, J.K. and Papini, M., "Erosive Smoothing in Abrasive Jet Micro-machining of Glass", *Int. J. of Mechanical Eng. and Mechatronics*, Vol. 2, pp. 43-50, 2014.
26. Nouhi, A., Lari, R., Spelt, J.K. and Papini, M., "Implementation of a Shadow Mask for Direct Writing in Abrasive jet micro-machining", *J. of Materials Processing Technology*, Vol. 223, pp. 232-239, 2015.
27. Nouhi, A., Kowsari, K., Spelt, J.K. and Papini, M., "Abrasive Jet Machining of Channels on Highly-curved Glass and PMMA Surfaces", *Wear*, Vol. 356-357, pp. 30–39, 2016.
28. Jafar, R., Hadavi, V., Spelt, J.K. and Papini, M., "Dust Reduction in Abrasive Jet Micro-machining Using Liquid Films", *Powder Technology*, Vol. 301, pp. 1270–1274, 2016.
29. Kowsari, K., Nouhi, A., Hadavi, V., Spelt, J.K. and Papini, M., "Prediction of the Erosive Footprint in the Abrasive Jet Micro-machining of Flat and Curved Glass", *accepted Tribology International*, Nov. 2016.

D. Abrasive Slurry-Jet Micro-machining

1. Nouraei, H., Wodoslawsky, A., Papini, M. and Spelt, J.K., "Characteristics of Abrasive Slurry Jet Micro-machining : A Comparison with Abrasive Air Jet Micro-machining", *J. of Materials Processing Technology*, Vol. 213, pp. 1711-1724, 2013.
2. Nouraei, H., Kowsari, K., Spelt, J.K. and Papini, M., "Surface evolution models for abrasive slurry jet micro-machining of channels and holes in glass", *Wear*, Vol. 309, pp. 65-73, 2014.
3. Kowsari, K., James, D.F., Papini, M. and Spelt, J.K., "The Effects of Dilute Polymer Solutions on the Shape, Roughness and Resolution of Abrasive Slurry Jet Micro-machined Channels", *Wear*, Vol. 309, pp. 112-119, 2014.
4. Kowsari, K., Nouraei, H., James, D.F. Spelt, J.K. and Papini, M., "Abrasive Slurry Jet Micro-machining of Holes in Brittle and Ductile Materials", *Journal of Materials Processing Technology*, Vol. 214, pp. 1909-1920, 2014.
5. Liu, Z., Nouraei, H., Papini, M. and Spelt, J.K., "Abrasive Enhanced Electrochemical Slurry Jet Micro-machining: Comparative Experiments and Synergistic Effects", *Journal of Materials Processing Technology*, Vol. 214, pp. 1886-1894, 2014.
6. Liu, Z., Nouraei, H., Spelt, J.K. and Papini, M., "Electrochemical Slurry Jet Micro-machining of Tungsten Carbide with a Sodium Chloride Solution", *Precision Engineering*, Vol. 40, pp. 189-198, 2015.
7. Jafar, R., Haj Mohammad, Nouraei, H., Emamifar, M., Papini, M. and Spelt, J.K., "Erosion Modeling in Abrasive Slurry Jet Micro-machining of Brittle Materials", *Journal of Manufacturing Processes*, Vol. 17, pp. 127-140, 2015.
8. Tamannaee, N., Spelt, J.K. and Papini, M., "Abrasive Slurry Jet Micro-machining of Edges, Planar Areas and Transitional Slopes in a Talc-Filled Co-Polymer", *Precision Engineering*, Vol. 43, pp. 52-62, 2016.
9. Nouraei, H., Kowsari, K., Papini, M. and Spelt, J.K., "Operating Parameters to Minimize Feature Size in Abrasive Slurry Jet Micro-machining", *Precision Eng.*, Vol. 44, pp. 109-123, 2016.

10. Kowsari, K., Sookhklari, M.R., Nouraei, H., Papini, M. and Spelt, J.K., "Hybrid Erosive Jet Micro-milling of Sintered Ceramic Wafers with and without Copper-filled Through-holes", *J. Materials Processing Technology*, Vol. 230, pp. 198-210, 2015.
11. Kowsari, K., Nouraei, H., Samareh, B., Papini, M. and Spelt, J.K., "CFD-aided Prediction of the Shape of Abrasive Slurry Jet Micro-machined Channels in Sintered Ceramics", *Ceramics International*, Vol. 42, No. 6, pp. 7030-7042, 2016.
12. Nouraei, H., Kowsari, K., Samareh, B., Spelt, J.K. and Papini, M., "Calibrated CFD Erosion Modeling of Abrasive Slurry Jet Micro-machining of Channels in Ductile Materials", *J. Manufacturing Processes*, Vol. 23, pp. 90–101, 2016.
13. Kowsari, K., Amini, M.H., Papini, M. and Spelt, J.K., "The Effects of Fluid Vapor Pressure and Viscosity on the Shapes of Abrasive Slurry-jet Micro-machined Holes and Channels", *Int. J. Machine Tools and Manufacture*, Vol. 110, pp. 80-91, 2016.

E. Abrasive Waterjet Micro-machining

1. Haghbin, N., Spelt, J.K. and Papini, M., "Abrasive Waterjet Micro-Machining of Channels in Metals: Comparison Between Machining in Air and Submerged in Water", *Int. J. Machine Tools and Manufacture*, Vol. 88, pp. 108-117, 2015.
2. Haghbin, N., Spelt, J.K. and Papini, M., "Abrasive Waterjet Micro-Machining of Channels in Metals: Model to Predict High Aspect-Ratio Channel Profiles for Submerged and Unsubmerged Machining", *Journal of Materials Processing Technology*, Vol. 222, pp. 399-409, 2015.
3. Haghbin, N., Ahmadzadeh, F., Spelt, J.K. and Papini, M., "High-Pressure Abrasive Slurry-Jet Micro-Machining using Slurry Entrainment", *Int. J. Adv. Manuf. Technol.*, Vol. 84, pp. 1031-1043, 2016.
4. Haghbin, N., Ahmadzadeh, F., J. K. Spelt, J.K. and Papini, M., "Effect of Entrained Air in Abrasive Waterjet Micro-machining: Reduction of Channel Width and Waviness using Slurry Entrainment", *Wear*, Vol. 344-345, pp. 99-109, 2016.

F. Vibratory Surface Finishing

1. Wang, S., Timsit, R.S. and Spelt, J.K., "Experimental Investigation of Vibratory Finishing of Aluminum", Vol. 243, pp. 147-156, 2000.
2. Yabuki, A., Baghbanan, M.R. and Spelt, J.K., "Contact Forces and Mechanisms in a Vibratory Finisher", *Wear*, Vol. 252, No. 7-8, pp. 635-643, 2002.
3. Baghbanan, M.R., Yabuki, A., Timsit, R.S. and Spelt, J.K., "Tribological Behaviour of Aluminum Alloys in a Vibratory Finishing Process", *Wear* Vol. 225, pp. 1369-1379, 2003.
4. Ciampini, D., Papini, M. and Spelt, J.K., "Impact Velocity Measurements of Media in a Vibratory Finisher", *J. Materials Processing Technology*, Vol. 183, pp. 347-357, 2007.
5. Ciampini, D., Papini, M. and Spelt, J.K., "Characterization of Vibratory Finishing using the Almen System", *Wear*, Vol. 264, pp. 671-678, 2008.
6. Ciampini, D., Papini, M. and Spelt, J.K., "Modelling the Development of Almen Strip Curvature in Vibratory Finishing", *J. Materials Processing Technology*, Vol. 209, pp. 2923-2939, 2009.
7. Mohajerani, A. and Spelt, J.K., "Edge Rounding of Brittle Materials by Low Velocity Erosive Wear", *Wear*, Vol. 267, pp. 1625-1633, 2009.
8. Naeini, S.E. and Spelt, J.K., "Two-dimensional Discrete Element Modeling of a Spherical Steel Media in a Vibrating Bed", *Powder Technology*, Vol. 195, No. 2, pp. 83-90, 2009.

9. Mohajerani, A. and Spelt, J.K., "Numerical modeling of the edge rounding of brittle materials by vibratory finishing", *Wear*, Vol. 268, pp. 1002–1012, 2010.
10. Mohajerani, A. and Spelt, J.K., "Erosive Wear of Borosilicate Glass Edges by Unidirectional Low Velocity Impact of Steel Balls", *Wear*, Vol. 269, pp. 900-910, 2010.
11. Mohajerani, A. and Spelt, J.K., "Edge Chipping of Borosilicate Glass by Blunt Indentation", *Mechanics of Materials*, Vol. 42, pp. 1064-1080, 2010.
12. Mohajerani, A. and Spelt, J.K., "Erosive Wear of Borosilicate Glass by Low Velocity Unidirectional Impact of Abrasive Spheres", *Wear* Vol. 270, pp. 866-875, 2011.
13. Mohajerani, A. and Spelt, J.K., "Edge Chipping of Borosilicate Glass by Low Velocity Impact of Spherical Indenters", *Mechanics of Materials*, Vol. 43, pp. 671-683, 2011.
14. Naeini, S.E. and Spelt, J.K., "Development of Single Cell Circulation of Granular Media in a Vibrating Bed", *Powder Technology*, Vol. 211, pp. 176-186, 2011.
15. Hashemnia, K., Mohajerani, A. and Spelt, J.K., "Development of a Laser Displacement Probe to Measure Particle Impact Velocities in Vibrationally Fluidized Granular Flows", *Powder Technology*, Vol. 235, pp. 940-952, 2013.
16. Hashemnia, K. and Spelt, J.K., Particle Impact Velocities in Vibrationally Fluidized Granular Flows Predicted Using the Discrete Element Method, *Chem. Eng. Sci.*, Vol. 109, pp. 123-135, 2014.
17. Hashemnia, K. and Spelt, J.K., "Finite Element Continuum Modeling of Vibrationally-Fluidized Granular Flows", *Chem. Eng. Sci.* Vol. 129, pp. 91-105, 2015.

G. Blast Cleaning

1. Papini, M. and Spelt, J.K. "Organic Coating Removal by Particle Impact", *Wear*, Vol. 213, pp. 185-199, 1997.
2. Papini, M. and Spelt, J.K. "Indentation - Induced Buckling of Organic Coatings, Part I: Theory and Analysis", *Int. J. of Mechanical Sciences*, Vol. 40, No. 10, pp. 1043-1059, 1998.
3. Papini, M. and Spelt, J.K. "Indentation - Induced Buckling of Organic Coatings, Part II: Measurements with Impacting Particles", *Accepted Int. J. of Mechanical Sciences*, Vol. 40, No. 10, pp. 1061-1068, 1998.
4. Djurovic, B., Jean, É., Papini, M., Tangestanian, P. and Spelt, J.K. "Coating Removal from Fibre-Composites and Aluminium Using Starch Media Blasting", *Wear*, Vol. 224, pp. 22-37, 1999.
5. Papini, M. and Spelt, J.K. "Plowing Erosion of Organic Coatings", *Wear*, Vol. 222, pp. 38-48, 1998.
6. Papini, M. and Spelt, J.K. "Impact of Rigid Angular Particles with Fully-Plastic Targets – Part I: Analysis", *Int. J. of Mechanical Sciences*, Vol. 43, pp. 991-1006, 2000.
7. Papini, M. and Spelt, J.K. "Impact of Rigid Angular Particles with Fully-Plastic Targets – Part II: Parametric Study of Erosion Phenomena", *Int. J. of Mechanical Sciences*, Vol. 42, pp. 1007-1025, 2000.
8. Tangestanian, P., Papini, M. and Spelt, J.K., "Starch Media Blast Cleaning of Artificially Aged Paint Films", *Wear*, Vol. 248, pp. 128-139, 2001.
9. Raykowski, A., Hader, M., Maragno, B. and Spelt, J.K., "Blast Cleaning of Gas Turbine Components: Deposit Removal and Substrate Deformation", *Wear*, Vol. 249, pp. 127-132, 2001.
10. Ciampini, D., Spelt, J.K. and Papini, M., "Computer Simulation of Interference Effects in Particle Streams Following Impact with a Flat Surface, Part I: Theory and Analysis", *Wear*, Vol. 254, No. 3-4, pp. 237-249, 2003.

H. Paper and Wood-Fibre Based Materials

1. Farid, S.I., Kortschot, M.T. and Spelt, J.K., "Wood-Flour Reinforced Polyethylene: Viscoelastic Behaviour and Threaded Fasteners", *Polymer Eng. and Sci.*, Vol. 42, No. 12, pp. 2336-2350, 2002.
2. Mao, C.O., Kortschot, M.T., Farnood, R. and Spelt, J.K., "Local Rewetting and Distortion of Paper", *Nordic Pulp and Paper Research Journal*, Vol. 18, No. 1, pp. 10-17, 2003
3. Akhtarkhavari, A., Kortschot, M.T. and Spelt, J.K., "Adhesion and Durability of Latex Paint on Wood Fibre Reinforced Polyethylene", *Progress in Organic Coatings*, Vol. 49, pp. 33-41, 2004.
4. Chhabra, N., Spelt, J.K., Yip, C. M. and Kortschot, M.T., "An Investigation of the Local Nanostructure and Nanomechanical Properties of Pulp Fibres by Atomic Force Microscopy", *J. Pulp and Paper Science*, Vol. 31, No. 1, pp. 52-56, 2005.
5. Xie, X., Samsudeen, F., Farnood, R.R., Kortschot, M. and Spelt, J.K., "Roughening due to Inkjet Rewetting: Effect of Paper Treatment and Composition", *J. Imaging Sci. and Tech.*, Vol. 52, No.1, pp. 010506-1 – 010506-7, 2008.
6. Dadhiala, N., Koo, K. and Spelt, J.K., "Quasi-static Strengths and Failure Modes of Tight-Fitting and Round-End Metal-Plate Wooden Truss Joints", *ASCE J. Structural Eng.*, Vol. 134, pp.1046-1056, 2008.

I. Surface Thermodynamics

1. Spelt, J.K., Absolom, D.R. Zingg, W., van Oss, C.J. and Neumann, A.W. "Determination of the Surface Tension of Biological Cells Using the Freezing Front Technique", *Cell Biophysics*, Vol. 4, pp. 117-131, 1982.
2. Neumann, A.W., Visser, J., Smith, R.P., Omenyi, S.N., Francis, D.W., Spelt, J.K., Vargha-Butler, E.I., Zingg, W., van Oss, C.J. and Absolom, D.R. "The Concept of Negative Hamaker Coefficients. III. Determination of the Surface Tension of Small Particles", *Powder Technology*, Vol. 37, pp. 229-244, 1984.
3. Neumann, A.W., Spelt, J.K., Smith, R.P., Francis, D.W., Rotenberg, Y. and Absolom, D.R. "Equation of State Considerations and Possibility of Negative Solid-Liquid Interfacial Tensions", *J. Colloid Interface Sci.*, Vol. 102, pp. 278-284, 1984.
4. Neumann, A.W., Spelt, J.K., Smith, R.P., Francis, D.W., Rotenberg, Y. and Absolom, D.R. "The Surface Tension of Solids: Comments to T.G.M. van de Ven et al.; Letter to the Editor, *J. Colloid Interface Sci.*, Vol. 102, pp. 298-300, 1984.
5. Smith, R.P., Absolom, D.R., Spelt, J.K. and Neumann, A.W. "Approaches to Determine the Surface Tension of Small Particles: Equation of State Considerations", *J. Colloid Interface Sci.*, Vol. 110, pp. 521-532, 1986.
6. Spelt, J.K., Absolom, D.R. and Neumann, A.W. "Solid Surface Tension: The Interpretation of Contact Angles by the Equation of State Approach and the Theory of Surface Tension Components", *Langmuir*, Vol. 2, pp. 620-625, 1986.
7. Spelt, J.K., Rotenberg, Y., Absolom, D.R. and Neumann, A.W. "Sessile Drop Contact Angle Measurements Using Axisymmetric Drop Shape Analysis", *Colloids and Surfaces*, Vol. 24, pp. 127-137, 1987.

8. Spelt, J.K. and Neumann, A.W. "Solid Surface Tension: The Equation of State Approach and the Theory of Surface Tension Components. Theoretical and Conceptual Considerations", *Langmuir*, Vol. 3, pp. 588-591, 1987.
9. Spelt, J.K., Smith, R.P. and Neumann, A.W. "Attraction and Repulsion of Solid Particles by Solidification Fronts: Evaluation of Predications of the Fowkes Equation", *Colloids and Surfaces*, Vol. 28, pp. 85-92, 1987.
10. Spelt, J.K. and Neumann, A.W. "Surface Tension Components: Comments to C.J. van Oss et al.; Letter to the Editor, *J. Colloid Interface Sci.*, Vol. 122, pp. 294-297, 1988.
11. Spelt, J.K. "Solid Surface Tension: The Use of Thermodynamic Models to Verify its Determination from Contact Angles", *Colloids and Surfaces*, Vol. 43, pp. 389-491, 1990.

J. Heat Transfer and Fluid Mechanics

1. Spelt, J.K., Brennen, C.E. and Sabersky, R.H. "Heat Transfer to Flowing Granular Material", *International Journal of Heat and Mass Transfer*, Vol. 25, No. 6, pp. 791-796, 1982.
2. Ackerman, J.D., Wong, L., Ethier, C.R., Allen, D.G. and Spelt, J.K. "Preston-Static Tubes for the Measurement of Wall Shear Stress", *J. Fluids Engin.*, Vol. 116, pp. 645-649, 1994.

K. Zebra Mussel Biofouling

1. Ackerman, J.D., Ethier, C.R., Allen, D.G. and Spelt, J.K. "Investigation of Zebra Mussel Adhesion Strength Using a Rotating Disc", *J. Environmental Engineering*, Vol. 118, No. 5., pp. 705-724, 1992.
2. Ackerman, J.D., Cottrell, C.M., Ethier, C.R., Allen, D.G. and Spelt, J.K. "A Wall Jet to Measure the Adhesion Strength of Zebra Mussels and Other Benthic Organisms", *Canadian J. Fisheries and Aquatic Sci.*, Vol. 52, No. 1, pp. 126-135, 1995.
3. Ackerman, J.D., Cottrell, C.M., Dormon, J.M., Ethier, C.R., Allen, D.G. and Spelt, J.K., "Attachment Strength of Zebra Mussels on Natural, Polymeric and Metallic Materials", *J. Environmental Eng.*, Vol. 122, No. 2, pp. 141-148, 1996.
4. Dormon, J.M., Cottrell, C.M., Allen, D.G., Ackerman, J.D. and Spelt, J.K. "Copper and Copper-Nickel Alloys as Zebra Mussel Antifoulants", *J. Environmental Eng.*, Vol. 122, No. 4, pp. 276-283, 1996.
5. Dormon, J.M., Coish, C., Cottrell, C.M., Allen, D.G. and Spelt J.K. "Modes of Byssal Failure in the Forced Detachment of Zebra Mussels", *J. Environmental Engineering*, Vol. 123, No. 9, pp. 933-938, 1997.
6. Cottrell, C.M., Dormon, J.M., Debies, T., Allen, D.G. and Spelt, J.K. "Zebra Mussel Biofouling as a Function of Copper Dissolution Rate", *J. Environmental Eng.*, Vol. 126, No. 4, pp. 340-347, 2000.

L. Biomechanics

1. Cheung, G., Zalzal, P., Bhandari, M., Spelt, J.K. and Papini, M., "Finite Element Analysis of a Femoral Retrograde Intramedullary Nail Subject to Gait Loading", *Medical Engineering and Physics*, Vol. 26, pp. 93-108, 2004.