

## Christopher A. Brown – Publications January 29, 2010

### Peer Reviewed Journals

1. D.R.S.Brown, C.A.Brown, Investigation of Surface Topography Differences in Native and Exotic Invertebrates in the St. Lawrence River, Accepted for publication in Scanning April 2010.
  2. J. Berglund, C. Aguwamba, B. Powers, C.A. Brown, B.-G. Rosén, On Discovering Relevant Scales in Surface Roughness Measurement—An Evaluation of a Band-Pass Method, to be published in Scanning.
  3. J. Berglund, C.A. Brown, B.-G. Rosén, N. Bay, Milled Die Steel Surface Roughness Correlation with Steel Sheet Friction, Accepted for publication CIRP 2010.
  4. G.J.Cantor, C.A.Brown, Scale-based correlations of relative areas with fracture of chocolate, *Wear*, 2009, v266/5-6, 609-612. [doi:10.1016/j.wear.2008.04.069](https://doi.org/10.1016/j.wear.2008.04.069)
  5. W.J.Stemp, B.E.Childs, S.Vionnet and C.A.Brown, Quantification and discrimination of lithic use-wear: Surface profile measurements and length-scale fractal analysis, *Archaeometry* 51, 3 (2009) 366–382.
  6. Stemp, W.J., B.E. Childs, S. Vionnet, and C.A. Brown, The Quantification of Microwear on Chipped Stone Tools: Assessing the Effectiveness of Root Mean Square Roughness ( $R_q$ ). *Lithic Technology*, 2008, 33, 2: 173 -189.
  7. O. Karabelchtchikova, C. A. Brown and R. D. Sisson, Jr 2007, Effect of surface roughness on kinetics of mass transfer during gas carburizing, *International Heat Treatment and Surface Engineering 2007 V1/ 4* pp. 164-170. Same article: O. Karabelchtchikova, Chr. A. Brown, R.D. Sisson, Jr., “Effect of surface roughness on the kinetics of mass transfer during gas carburizing”, *HTM Journal of Heat Treatment and Materials*, 63 (2008) 5, (formerly HTM Z. Werkst, Warmeh., Fertigung), pp. 257-264.
  8. J. Kummilil, D. J. Geiger, R. S. Hahn, C.A. Brown, “Measurement and Analysis of Forces in Diamond Roll Dressing,” *J. for Manufacturing Processes*, v8n2 (2006) 101-111.
  9. Stemp, W.J., B.E. Childs, C.A. Brown, and S. Vionnet 2006 Variable Length-scale Documentation of Stone Tool Microtopography to Determine Use. *SAS Bulletin: Newsletter of the Society for Archaeological Sciences* 29, 4: 17-21.
  10. Ray J. Emerson IV, Torbjorn S. Bergstrom, Yatao Liu, Ernesto R. Soto, Christopher A. Brown, W. Grant McGimpsey, and Terri A. Camesano, “Microscale Correlation between Surface Chemistry, Texture, and the Adhesive Strength of *Staphylococcus epidermidis*,” *Langmuir*; **2006**; 22(26) pp 11311 - 11321; DOI: [10.1021/la061984u](https://doi.org/10.1021/la061984u)
  11. C.A.Brown “Teaching Axiomatic Design to Engineers – Theory, Applications, and Software,” *SME Journal of Manufacturing Systems*, v24 n3 2005, 186-195.
  12. P. Narayan, B. Hancock, R. Hamel, T.S. Bergstrom, C.A.Brown, “Using fractal analysis to differentiate the surface topography of various pharmaceutical excipient compacts” *Materials Science & Engineering, A: Structural Materials: Properties, Microstructure and Processing* (2006), 430(1-2), 79-89.
  13. Robert S. Scott, Peter S. Ungar, Torbjorn S. Bergstrom, Christopher A. Brown, Ben Childs, Mark F. Teaford, Alan Walker, Dental microwear texture analysis, *Journal of Human Evolution*, 51 (2006) 339-349.
  14. Vilbett Briones, Christopher A. Brown, José M. Aguilera, “Scale-sensitive fractal analysis of the surface roughness of bloomed Chocolate” *J. American Oil Chemists Society* v83 n3 (2006) 193–199. [http://www.aocs.org/press/jabs.asp?abs\\_id=3964&issue=3&yr=2006](http://www.aocs.org/press/jabs.asp?abs_id=3964&issue=3&yr=2006)
  15. S.E.Jordan, C.A.Brown, “Comparing Texture Characterization Parameters on Their Ability to Differentiate Ground Polyethylene Ski Bases” *Wear* 261 (2006) 398-409.
  16. Briones, V., Brown, C. & Aguilera, J.M., “Effect of surface topography on color and gloss of chocolate samples. *Journal of Food Engineering* v77/4 (2006) 776-783.
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18. Roberto Quevedo, Christopher Brown, Pedro Bouchon and José M. Aguilera, "Surface roughness during storage of chocolate: Fractal analysis and possible mechanisms" *J. American Oil Chemists Society*, June (2005) 457-462.
19. Robert S. Scott, Peter S. Ungar, Torbjorn S. Bergstrom, Christopher A. Brown, Frederick E. Grine, Mark F. Teaford, Alan Walker, "Dental microwear texture analysis within-species diet variability in fossil hominins," *Nature* vol 436/4 (2005) 693-695.
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23. G.A. McRae, M.A. Maguire, C.A. Jeffrey, D.A. Guzonas, C.A. Brown, "Atomic Force Microscopy of Fractal Anodic Oxides on Zr-2.5Nb" *J of Applied Surface Science*.191/1-4 (2002) 94-105. [http://dx.doi.org/10.1016/S0169-4332\(02\)00165-4](http://dx.doi.org/10.1016/S0169-4332(02)00165-4)
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27. C.A. Brown and S. Siegmann, "Fundamental scales of adhesion and area-scale fractal analysis," *International Journal of Machine Tools and Manufacture*, 41 (2001) 1927-1933.
28. T.S. Bergstrom and C.A. Brown, "Interaction between Horizontal Scanning Instruments and Surfaces," *International Journal of Machine Tools and Manufacture*, 41 (2001) 1995-2000.
29. C.A. Brown, "Issues in modeling machined surface textures," *Machining Science and Technology* 4/3 (2000) 539-546.
30. L. DeChiffre, P. Lonardo, H. Trumphold, D.A. Lucca, G. Goch, C.A. Brown, J. Raja, H.N. Hansen, "Quantitative Characterization of Surface Texture," *Annals of the CIRP*, 49/2 (2000) 635-652.
31. Franco Pedreschi, José M. Aguilera, C.A. Brown, "Quantitative characterization of food surfaces using scale-sensitive fractal analysis," *Journal of Food Process Engineering*, 23/2 (2000) 127-143.
32. F.E. Kennedy, C.A. Brown, J. Kolodny, B.M. Sheldon, "Fractal analysis of hard disk surface roughness and correlation with static and low-speed friction," *ASME Journal of Tribology*, 121/4 (1999) 968-974.
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37. C.A. Brown, A.H. Hoffman, R.K. Heinzmann, "Loss of Control in Alpine Skiing and Subsequent Trajectories," *Skiing Trauma and Safety: Tenth Volume*, ASTM STP 1266, C.D. Mote, Jr., et al. eds., ASTM, Philadelphia (1996) 186-195.
38. J.D. Webster, C.A. Brown, "Computer Simulation of the Loads on the ACL during Backwards Falls Based on an Open Kinematic Chain Model," *Skiing Trauma and Safety: Tenth Volume*, ASTM STP 1266, C.D. Mote, Jr., et al. eds., ASTM, Philadelphia (1996) 254-269.

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51. D.F. Dauw, C.A. Brown, J.P. van Griethuysen, and J.F.L.M. Albert, "Surface Topography Investigations by Fractal Analysis of Spark Eroded Electrically Conductive Ceramics," *Annals of the CIRP*, 39/1 (1990) 161-165.
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61. G.D. Donald, D. Seligson, C.A. Brown, "Fatigue of Ball Joints for External Fixtures," *Corrosion and Degradation of Implant Materials: Second Symposium*, ASTM STP 859, Fraker and Griffin, eds., Philadelphia (1985) 160-167.
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**Conference proceedings (many are peer reviewed, some are not and there are some about which I am uncertain)**

1. C.A. Brown, B. Powers, Design of Surface Metrology Systems, North American Manufacturing Research Conference, NAMRC 3, Queen's University, Kingston, Ontario, May 25-28, 2010.
2. C.A. Brown, On the Importance of Scale-based Characterization for Discrimination and Correlation, International Conference on Surface Metrology, C.A. Brown, M. Massey and O. Paracha, eds., WPI, Worcester, MA 26-28 October 2009, p IX 12-14 (extend abstract).
3. D.R.S. Brown, C.A. Brown Investigation of the Surface Topography Differences in Native and Exotic Invertebrates in the St. Lawrence River, International Conference on Surface Metrology, C.A. Brown, M. Massey and O. Paracha, eds., WPI, Worcester, MA 26-28 October 2009, p V30-33 (extend abstract).
4. T.G. Mathia, C.A. Brown, Surface morphology characterization in sports with sliding surfaces on snow and ice, International Conference on Surface Metrology, C.A. Brown, M. Massey and O. Paracha, eds., WPI, Worcester, MA 26-28 October 2009 VI2-VI4 (extended abstract).
5. D.R.S. Brown, C.A. Brown, On the Assessment of the Quality and Utility of Texture Measurements of Unusual Surfaces, Proceedings of the 12<sup>th</sup> International Conference on Metrology and Properties of Engineering Surfaces, Ed Pawlus et al., Rzeszów University of Technology, July 8-10, 2009, Rzeszów, Poland, 231-236.
6. Christopher A. Brown, Brendan M. Powers and Gergory Hesler, The Non-uniqueness of Surface Area with Respect to Scale in Roughness Characterization, Microscopical Society of Canada, University of Manitoba, Winnipeg, Manitoba, 17-19 June 2009 (extended abstract).
7. Christopher A. Brown, Douglas R. S. Brown, Joseph A. Feula, Gregory Hesler, Brendan M. Powers Discrimination of Surfaces using Surface Texture Measurements and Area-scale Analysis, Microscopical Society of Canada, Winnipeg, 17-19 June 2009 (extended abstract).
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12. T. S. Vincent, I. Bar-On, C.A. Brown, "Examination of Surface Roughness Effect on Insertion loss at Microwave Frequencies using Conventional Surface Roughness Parameters within LTCC Structures" ICIMT IMAPS/ACerS April 2007 proceedings pp 138-144.
13. Stemp, W.J., B.E. Childs, C.A. Brown, and S. Vionnet 2006 It's the Little Things in Life that Matter: Variable Length Scale Documentation of Stone Tool Microtopography to Determine Use. Paper presented at the Second Archaeological Sciences of the Americas Symposium, University of Arizona, Tucson, Arizona.
14. Stemp, W.J., B.E. Childs, S. Vionnet, and C.A. Brown 2006 The Future of Lithic Use-wear Analysis? Surface Metrology and Laser Profilometry. Paper presented at the 46<sup>th</sup> Annual Northeastern Anthropological Association Meeting in Albany, New York.
15. Brown, C.A., R.S. Hahn, R.M. St. Gelais, B. Powers, D.J. Geiger, 2007, "Grinding Wheel Texture and Diamond Roll Plunge Dressing Feed-Rates," ISAAT 2007 / SME International Grinding Conference, 2007 Society of Manufacturing Engineers, Dearborn.

16. C.A. Brown, B.M. Powers, and T.S. Bergstrom, Uncertainty and Quality in the Measurement and Characterization of the Texture of Abrasive Media, ISAAT 2007 / SME International Grinding Conference, 2007 Society of Manufacturing Engineers, Dearborn.
17. C.A. Brown, Knowledge Management and Axiomatic Design, SAE World Congress, Detroit 2007, paper number 2007-01-1211.
18. Stephen A. Batzer, Robert D. Burges, Christopher A. Brown, "Axiomatic Design of Automotive Roof Structures," SAE World Congress Detroit 2007 paper number 2007-01-0685.
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29. Christopher A. Brown, Rebecca Hamel, John Kummailil, Mark O'Connell, Torbjorn S. Bergstrom, "Analyzing the Accuracy of Surface Measurement Systems and Replicas 9th International Conference on the Metrology and Properties of Engineering Surfaces, Halmstead, Sweden, 2003.
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44. C.A. Brown, K.A. Nucifora, M. Luchini, T.S. Bergstrom, New Tiling and Packing Algorithms in Surface Metrology, Proceedings 14th Annual Meeting The American Society for Precision Engineering, St. Louis, ASPE, Raleigh (1998).
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47. D.K. Cohen, C.A. Brown, W.A. Johnsen, P. Hoch, "An Investigation of Filtering on 3D Surface Texture Measurements Using Scale-Sensitive Fractal Analysis and PSD," Advances in Surface Metrology, ASPE, Raleigh (1997) 30-35.
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50. S. Siegmann, C.A. Brown, "Investigations on the Substrate Surface Morphology for Thermal Spray Coatings." Success of Materials by Combination, Proceedings of the 17th International SAMPE Europe Conference of the Society for the Advancement of Material Process Engineering,

- Basel Switzerland, May 28-30, 1996, Urs Meier and Markus A. Erath, Eds., SAMPE Europe, Niederglatt, CH (1996) 149-158.
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