

Curriculum Vitae

Personal Details

Name Brian Henson BEng PhD CEng MIET
Address School of Mechanical Engineering
University of Leeds
Leeds LS2 9JT
United Kingdom



Professional Qualifications

Member of the Institute of Engineering and Technology

Qualifications

- 1999 PhD Assembly Representation in a Product Data Environment (University of Leeds)
- 1998 Postgraduate Certificate in Learning and Teaching in Higher Education (University of Leeds)
- 1990 B.Eng Electronic and Electrical Engineering (University of London)

Employment

- 2018 One year, part time secondment as **Project Leader** to Leeds Institute for Teaching Excellence.
- 2008 – present **School of Mechanical Engineering, University of Leeds.**
 - Post: Senior Lecturer in Design and Manufacture
- 1996 – 2008 Post: Lecturer in Design and Manufacture.
- 1992 – 1996 Post: Research Engineer.
- 1990 – 1992 **Lancaster University and Oxley Developments Co. Ltd.**
 - Post: Teaching Company Associate.
- 1985 – 1990 **British Aerospace plc., Airbus Division, Filton, Bristol.**
 - Post: Undergraduate Apprentice.

Education

- 1992 – 1999 **University of Leeds** PhD by part time research.
- 1986 – 1990 **Kings College, University of London**

Research Grants

- 2018-2021 Appropriating sensor technologies, machine learning, gamification and smart haptic interfaces for deafblindness (SUITCEYES) EU (£567k).
- 2016 Wearable, Haptic, Information Signals for Pedestrians – Evidence and Research (WHISPER), DfT Transport Technology Research Innovation Grant (T-TRIG)
- 2016 Analysis of textures for consumer products. Direct funding from industry.
- 2014 Analysis of consumer data. Direct funding from industry.
- 2014 -2017 EPSRC industrial CASE studentship on trade-offs between driving safety and driving pleasure.
- 2011 EPSRC Collaboration Grant. Effect of surface roughness on grip (£8k)
- 2010 – 2012 Knowledge Transfer Partnership (KTP 007773) Airedale International Air Conditioning. Design for Manufacture and Serviceability (125k).
- 2010 – 2012 Knowledge Transfer Partnership (KTP 007678) Oilgear Towler. Design of product families and parametric configuration (£124k)
- 2009 – 2012 White Rose Studentship. Characterisation of material and surface properties to improve ergonomic and affective experiences in the home (£80k).
- 2006 – 2009 Surface textures for affective communication (AFTEX), EPSRC responsive mode grant EP/D060079/1 (£323k)
- 2006 – 2009 Measuring feelings and expectations associated with texture (SYNTEX), EU FP6, NEST 043157 (£200k to Leeds).
- 2006 – 2009 Knowledge Transfer Partnership (KTP 001562) Pickersgill Kaye. Enhanced product development procedures and manufacturing capabilities (£236k).
- 2005 Royal Academy of Engineering Industrial Secondment to Mars in Slough (£12k).

Current Teaching Duties

Module manager for Mech1206 Design and Manufacture 1 (300 students).

Current Administrative Duties

2014 - present School's Programme Director for joint degree programme with Southwest Jiaotong University, China.

Professional Activities

Host of KEER 2016 on behalf of Japan Society of Kansei Engineering

External examiner at Queen's University Belfast.

Member of board for Kansei Engineering and Emotion Research conferences.

Invited speaker at IMechE conference on tribology of touch, October 2013; and Institute of Physics conference on tribology of human finger, May 2010.

PhD Examiner at Universities of Bristol, Exeter and Sheffield.

Reviewed papers for: IEEE Transactions on Haptics; Applied Ergonomics; Measurement; International Journal of Human Computer Interaction; Journal of Materials and Design; Journal of Engineering Design; Tribology International; PLOS ONE; International Journal of Design, and Transactions on Haptics.

Journal Publications

Zimasa T; Jamson S; Henson B (2017) Are happy drivers safer drivers? Evidence from hazard response times and eye tracking data, *Transportation Research Part F: Traffic Psychology and Behaviour*, 46, pp.14-23. doi: 10.1016/j.trf.2016.12.005

Jacobs RHAH, Haak KV, Thumfart S, Renken R, Henson B and Cornelissen FW (2016) Aesthetics by Numbers: Links between Perceived Texture Qualities and Computed Visual Texture Properties. *Front. Hum. Neurosci.* 10:343. doi: 10.3389/fnhum.2016.00343

Fabio R. Camargo and Brian Henson. Beyond usability: designing for consumers' product experience using the Rasch model. (2015) *Research in Engineering Design* 26(4-6):121-139

Camargo FR, Henson B. Aligning Affective Responses with Fabric Features of Vehicle Seat: An Approach Using the Rasch Measurement Model. *International Journal of Affective Engineering*. DOI: 10.5057/ijae.IJAE-D-15-00012

Brian HENSON and Fabio R CAMARGO. (2014) Verification of Quantitative Properties of Kansei Scales Using the Rasch Model. *Journal of Japan Society of*

Kansei Engineering. 13(1):13-20.

Elkharraz, G., Thumfart, S., Akay, D., Eitzinger, C., and Henson, B. (2014) Making tactile textures with predefined affective properties. *IEEE Transactions on Affective Computing* 5(1) pp 57 - 70.

Fakhoury, E., Culmer, P. Henson, B. (2014) The effect of vision on discrimination of compliance using a tool. *International Journal of Human Computer Interaction*. 30(1):882-890.

Holt RJ; Lefevre AS; Flatters IJ; Culmer P; Wilkie RM; Henson BW; Bingham GP; Mon-Williams M., Grasping the changes seen in older adults when reaching for objects of varied texture. *PLOS ONE*, vol. 8, pp.e69040 2013.

Flatters IJ, Otten L, Witvliet A, Henson B, Holt RJ, Culmer P, Bingham GP, Wilkie RM, Mon-Williams M. Predicting the effect of surface texture on the qualitative form of prehension. *PLOS ONE* 7(3):e32770 2012

Camargo FR, Henson B. The Rasch probabilistic model for measuring affective responses to product features. *Int. J. Human Factors and Ergonomics*, Vol. 1, No. 2, 2012, pp204-219

Camargo, F.R. and Henson, B. Measuring affective responses for human-oriented product design using the Rasch model. *Journal of Design Research* 9(4):360-375 2011.

Akay, D., Chen, X., Barnes, C., and Henson, B. ANFIS Modeling for Predicting Affective Responses to Tactile Textures. *Human Factors and Ergonomics in Manufacturing & Service Industries* (2011) DOI: 10.1002/hfm.20268

Akay, D., Kulak, O., Henson, B. Conceptual design evaluation using interval type-2 fuzzy information axiom. *COMPUTERS IN INDUSTRY* 62 (2):138-146 (2011)

Shao, F., Childs, T.H.C., Barnes, C., Henson, B. Finite element simulations of static and sliding contact between a human fingertip and textured surfaces. *Tribology International*, Volume 43, Issue 12, December 2010, Pages 2308-2316

F Shao, X Chen, C J Barnes and B. Henson. (2010) A novel tactile sensation measurement system for qualifying touch perception. *Proceedings of the Institution of Mechanical Engineers, Part H, Journal of Engineering in Medicine* 224(1):97-105. ISSN 0954-4119 (Print) 2041-3033 (Online)

Xiaojuan Chen, Fei Shao, Catherine Barnes, Tom Childs and Brian Henson. (2009) Exploring Relationships Between Touch Perception and Surface Physical Properties. *International Journal of Design* 3(2).

Shao, F., Childs, T.H., Henson, B., Developing an artificial fingertip with human friction properties. *Tribology International*, 2009. doi:10.1016/j.triboint.2009.02.005.

X. Chen, C.J. Barnes, T.H.C. Childs, B. Henson and F. Shao. (2009) Materials' tactile testing and characterisation for consumer products' affective packaging design.

Materials & Design. Volume 30, Issue 10, December 2009, Pages 4299-4310.

Haak, K. V., Jacobs, R. H. A. H., Thumfart, S., Henson, B., Cornelissen, F. W. (2008) Aesthetics by numbers: computationally derived features of visual textures explain their aesthetics judgment. PERCEPTION 37:92-92 Suppl. S

Barnes, C., Childs, T., Henson, B., Lillford, S. (2008) Kansei Engineering Toolkit for the Packaging Industry. The TQM Journal, 20 (4):372-388.

Firouzabadi, S.M.A.K., Henson, B., and Barnes, C. (2008) A multiple stakeholders' approach to strategic selection decisions. Computers and Industrial Engineering. 54 (4): 851-865

Childs, T.H.C.; Henson, B. (2007) Human Tactile Perception of Screen Printed Surfaces: Self-Report and Contact Mechanics Experiments. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 221(3), pp.427-441.

Henson, B., Barnes, C., Livesey, R., Childs, T.H.C., Ewart, K. (2006) A Case Study in Eliciting the Affective Requirements of Moisturiser Packaging. Concurrent Engineering Research and Applications, 14(3):187-196.

Conference Publications

Fabio R. Camargo and Brian Henson. Conceptualising computerized adaptive testing for measurement of latent variables associated with physical objects. IMEKO XXI World Congress, 30 Aug 2015 - 04 Sep 2015, Prague. Journal of Physics: Conference Series. Institute of Physics Publishing. 588. 2015 DOI 10.1088/1742-6596/588/1/012012

Evan Fakhoury, Peter R. Culmer, and Brian Henson. The Effect of Indentation Force and Displacement on Visual Perception of Compliance. IEEE World Haptics, 22-26 June 2015, Chicago.

Fatih Emre Boran, Burak Efe, Diyar Akay and Brian Henson (2014) Understanding Customers' Affective Needs with Linguistic Summarization. Kansei Engineering and Emotion Research, Linköping, Sweden, 10-13 June 2014.

FR Camargo, K Kawano, K Motohata, K Hayashi, B Henson and T Kawai (2014) Applying the Rasch Model to Measure Kansei Responses to Fabric Seats. Kansei Engineering and Emotion Research, Linköping, Sweden, 10-13 June 2014.

Camargo, F.R. & Henson, B. (2014) Establishing Metrics for Kansei Responses: An Approach Using the Rasch Model. Kansei Engineering and Emotion Research, Linköping, Sweden, 10-13 June 2014.

Camargo, F.R. & Henson, B. (2013) Aligning physical elements with persons' attitude: an approach using Rasch measurement theory. Journal of Physics: Conference Series 459 (2013) doi:10.1088/1742-6596/459/1/012009

Camargo, F.R. & Henson, B. (2012) A rationale for comparing affective responses to

stimulus objects using the faceted Rasch model. Proc. Int. Conf. Probabilistic Models for Measurement in Education, Psychology, Soc. Sci. & Health, 23–25 Jan, Perth, Australia.

Camargo, F.R. and Henson, B. Invariant comparisons in affective design. 4th AHFE International Conference 2012. 21-25 July, San Fransisco.

Radivojevic Z; Beecher P; Bower C; Haque S; Andrew P; Hasan T; Bonaccorso F; Ferrari AC; Henson B Electrotactile touch surface by using transparent graphene. ACM International Conference Proceeding Series, 2012.

Camargo, F.R. and Henson, B. Improving Kansei Measurement Using the Rasch Model. KEER 2012, 22-25 May, Penghu, Taiwan.

Camargo, F.R. & Henson, B. (2010) Measuring the specialness of confectionery: a Rasch model approach in affective engineering. Proc. Int. Conf. Probabilistic Models for Measurement in Education, Psychology, Social Science & Health, 13–16 June, Copenhagen, Denmark.

Galal Elkharraz, Stefan Thumfart, Diyar Akay, Christian Eitzinger, and Brian Henson. Machine vision approach to predicting affective properties of tactile textures. International Conference on Kansei Engineering And Emotion Research, KEER 2010, Paris, France, March 2- 4 2010.

Brian Henson, Stephen Lillford. Affective multimodal integration of visual and tactile textures. International Conference on Kansei Engineering And Emotion Research, KEER 2010, Paris, France, March 2- 4 2010.

Diyar Akay, Brian Henson. Predicting Affective Properties of Tactile Textures Using ANFIS Modelling. International Conference on Kansei Engineering And Emotion Research, KEER 2010, Paris, France, March 2- 4 2010.

Setiati, D., Pollock, I., Henson, B. (2009) Applying a Technology Management System in a Medium-Sized Manufacturing Company in the UK. 10th Asia Pacific Industrial Engineering & Management Systems Conference (APIEMS2009) Dec. 14-16, 2009, Kitakyushu, Japan.

Galal Elkharraz, Stefan Thumfart, Diyar Akay, Christian Eitzinger, and Brian Henson. Texture Features Corresponding to Human Touch Feeling. 2009 IEEE International Conference on Image Processing. Cairo, Egypt, November 7 - 11, 2009.

Chen, X., Barnes, C.J., Childs, T.H.C., Henson, B. (2008) An Affective Engineering Approach to Understanding Tactile Perceptions and Their Relation to Surface Properties. Materials & Sensations 2008. Pau, France. October 22-24, 2008.