PROFESSOR CARL HOWARD

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VIEW MY RESEARCHER PROFILE

Collapse

Teaching Interests

Subjects Taught

- Engineering Acoustics (2013 - present)
- Finite Element Analysis of Structures (2008, 2009, 2018)
- Dynamics and Control 2 Acoustics module (2017)
- Sustainability and the Environment Acoustics module (2014, 2015, 2016)
- Mechanical Signature Analysis (2007, 2008, merged into Advanced Vibrations)

Topics of Interest Relating to Learning and Teaching

- Clicker style apps for increasing student participation and feedback, such as socrative.com
- MapleTA for online assessment and feedback
- Remote laboratories

- Total financial cost of teaching delivery
- Marketing (promotion) of courses
- Methods of evaluating retention of content
- Novel lecture formats for technical engineering subjects, especially large (200+) class sizes
- Examples of flipped classrooms that actually work for technical engineering subjects
- Scalable assessment methods for large class sizes
- Adaptive teaching and learning
- Online learning and MOOCs
- First Learn On Paper (FLOP teaching style)
- Quality assurance for courses
- Research Skills Develoment Framework for HDR students and methods to actively develop these skills
- Methods to create active, life-long learners
- Collaborative Online Project Management for HDR students and HDR supervisors
- Gaming for teaching and learning
- Learning by mistake
- Edutainment
- Teaching and learning non-linearly, mozaic learners
- Next generation meaningful student evaluation of teaching
- Platforms and apps for learning outside the lecture room, e.g. scavenger hunt game actionbound.com

For further interest see Research Interests.

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Research Interests

RESEARCH INTERESTS

Interested in all matters relating to acoustics and vibration including:

- thermoacoustics
- structural vibration
- condition monitoring
- ultrasound
- distributed computing for optimisation
- passive acoustic and vibration absorbers for noise and vibration control
- active noise and vibration control
- kinematics of the human wrist
- orthopaedic implants

Carl Howard

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AcousticsVibrationsThermoacousticsUltrasound

TITLE	CITED BY	
Engineering Noise Control: theory and practice CQ Howard Engineering Noise Control: theory and practice, 617-657	1369*	2009
Analyses of contact forces and vibration response for a defective rolling element bearing using an explicit dynamics finite element model S Singh, UG Köpke, CQ Howard, D Petersen Journal of Sound and Vibration 333 (21), 5356-5377	90	2014
Analysis of bearing stiffness variations, contact forces and vibrations in radially loaded double row rolling element bearings with raceway defects D Petersen, C Howard, N Sawalhi, AM Ahmadi, S Singh Mechanical Systems and Signal Processing 50, 139-160	75	2015
A nonlinear dynamic vibration model of defective bearings–The importance of modelling the finite size of rolling elements AM Ahmadi, D Petersen, C Howard Mechanical Systems and Signal Processing 52, 309-326	68	2015

TITLE	CITED BY	
Acoustic analyses using Matlab® and Ansys® CQ Howard, BS Cazzolato CRC press	63	2014
An extensive review of vibration modelling of rolling element bearings with localised and extended defects S Singh, CQ Howard, CH Hansen Journal of Sound and Vibration 357, 300-330	56	2015
Active control of gearbox vibration B Rebbechi, C Howard, C Hansen INTER-NOISE and NOISE-CON Congress and Conference Proceedings 1999 (5), 295-304	51	1999
Power transmission from a vibrating body to a circular cylindrical shell through passive and active isolators CQ Howard, CH Hansen, J Pan The Journal of the Acoustical Society of America 101 (3), 1479-1491	43	1997
Waste-heat-driven thermoacoustic engine and refrigerator DL Gardner, CQ Howard Proceedings of ACOUSTICS, 23-25	40	2009
Review of current recommendations for airborne ultrasound exposure limits CQ Howard, CH Hansen, AC Zander Proceedings of Acoustics 2005 50 (November), 341-343	36*	2005

TITLE	CITED BY	
Calculation of vibratory power transmission for use in active vibration control CQ Howard, SD Snyder, CH Hansen Journal of Sound and Vibration 233 (4), 569-581	35	2000
A review of current airborne ultrasound exposure limits CQ Howard, CH Hansen, AC Zander The Journal of Occupational Health and Safety - Australia and New Zealand 21 …	33	2005
Feasibility study of an automotive thermoacoustic refrigerator L Zoontjens, C Howard, A Zander, B Cazzolato Proceedings of acoustics, Busselton, Australia	32	2005
Vibro-acoustic noise control treatments for payload bays of launch vehicles: discrete to fuzzy solutions CQ Howard, CH Hansen, A Zander Applied Acoustics 66 (11), 1235-1261	31	2005
Active isolation of machinery vibration from flexible structures CQ Howard The University of Adelaide	31	1999
Numerical study of flow and energy fields in thermoacoustic couples of non-zero thickness L Zoontjens, CQ Howard, AC Zander, BS Cazzolato International Journal of Thermal Sciences 48 (4), 733-746	30	2009

TITLE	CITED BY	
Varying stiffness and load distributions in defective ball bearings: analytical formulation and application to defect size estimation D Petersen, C Howard, Z Prime Journal of Sound and Vibration 337, 284-300	27	2015
Exhaust stack silencer design using finite element analysis CQ Howard, BS Cazzolato, CH Hansen Noise Control Engineering Journal 48 (4), 113-120	26	2000
Acoustic characteristics for effective ambulance sirens EP Privopoulos, CQ Howard, AJ Maddern Acoustics Australia 39 (2), 43	25	2011
Vibration analysis of waffle floors CQ Howard, CH Hansen Computers & structures 81 (1), 15-26	23	2003