MOHAMMED HUSSEIN, BSc (Hons), PhD (Cantab), GMICE, Aff.M.ASCE, MIIAV, PGCHE, FHEA

Professor
Department of Civil and Environmental Engineering
College of Engineering
Qatar University
Email: mhussein@qu.edu.qa
Web: http://qufaculty.qu.edu.qa/mhussein/
Telephone: +974 4403 4186 Fax: +974 4403 4172

FIELDS OF INTERESTS

- Railway Engineering
- Ground-borne Vibration
- Track dynamics
- Structural dynamics
- Soil-structure interaction
- Human-structure interaction

RESEARCH LINKS

Google scholar: http://scholar.google.co.uk/citations?user=6z2AD0UAAAAJ
Scopus: https://www.scopus.com/authid/detail.uri?authorId=57203056974
ResearchGate: https://www.researchgate.net/profile/Mohammed_Hussein12
Research ID: http://www.researcherid.com/rid/I-4911-2016
ORCID: http://orcid.org/0000-0003-2594-5804

MAIN ADMINISTRATIVE ROLES

- Head of Department of Civil and Environmental Engineering, Qatar University, January 2017 – August 2023.
- Undergraduate Admissions Tutor of the Department of Civil Engineering, University of Nottingham, July 2010 – May 2013.
- Postgraduate Research Admissions Tutor for the Department of Civil Engineering, University of Nottingham, January 2008 – August 2010.

WORK EXPERIENCE

February 2021- current
Full Professor, Department of Civil and Environmental Engineering (previously known as the Department of Civil and Architectural Engineering), College of Engineering, Qatar University, Doha, Qatar.

Sep 2014- Jan 2021
Associate Professor in Civil Engineering, Department of Civil and Architectural Engineering, College of Engineering, Qatar University, Doha, Qatar.

July 2013- Aug 2014

Senior Lecturer in Railway Dynamics, Department of Civil and Environmental Engineering, Faculty of Engineering and the Environment, University of Southampton, Southampton, UK.

Sep 2006- June 2013
Lecturer in Civil Engineering (promoted to Associate Professor with announcement in March 2013 and with effect from August 2013), Department of Civil Engineering, University of Nottingham, Nottingham, UK.

Sep 2005- Aug 2006
Research Associate, University of Cambridge, Department of Engineering, Cambridge, UK.

Sep 2002-Aug 2006
Part-time Supervisor (during PhD and postdoc) of Structural Mechanics, Materials and Mechanical Vibration for undergraduate students at Trinity College, Fitzwilliam College and Robinson College, Cambridge University.

Aug 2000-May 2001
Teaching assistant, Department of Civil Engineering, University of Khartoum, Khartoum, Sudan.

May 2000- Aug 2000
Site Engineer, Farahab Engineering, Khartoum, Sudan.

QUALIFICATIONS

- PGCHE, Postgraduate Certificate of Higher Education, University of Nottingham, Nottingham, UK, June 2013.
- PhD, Engineering Department, University of Cambridge, UK, July 2005.
  Dissertation title: Vibration from Underground Railways.
- B.Sc. First Class Honours, Department of Civil Engineering, University of Khartoum, Sudan, July 2000.

AWARDS & DISTINCTIONS

- Qatar University Outstanding Faculty Service Award for the AY 2023 - 2024, awarded by Qatar University President in Sep 2024.
- College of Engineering Dean's Award for Services for College's faculty members, Qatar University, May 2024.
- Times Higher Education (THE) MENA International Award – Student Recruitment Campaign of the Year, Leader of winning team, November 2023.
- Listed in the top highly cited scientists in the world for 2024, 2023, 2022, 2021, 2020, 2019 and honoured by Qatar University President as one of the university distinguished scientists in April 2021.

- Cambridge Overseas Trust and London Underground Limited: a PhD Scholarship awarded in Oct 2002.
- Fellowship of the Cambridge Commonwealth Society, Cambridge, UK, awarded in May 2002.
- The Sudanese Engineering Society prize for the best final year project in Civil Engineering, University of Khartoum, awarded in June 2000.
- The 1st prize in mathematics. The 1st Olympics competition for high schools. University of Sudan, awarded in April 1993.

MEMBERSHIPS

- Fellow of the Higher Education Academy.
- Affiliate Member of the American Society of Civil Engineers (ASCE).
- Affiliate Member of Structural Engineering Institute (SEI).
- Graduate Member of the Institution of Civil Engineers (ICE).
- Member of the International Institute of Acoustics and Vibration (IIAV).
- Fellow of the Cambridge Commonwealth Society.

SERVICES

Beside serving on various committees and taskforces at the University of Southampton and University of Nottingham, I served as Head of Department of Civil and Environmental Engineering (Previously known as the Department of Civil and Architectural Engineering) at Qatar University from January 2017 to August 2023. The main activities and achievements, on the top of running the routine business of the department, are highlighted below:

- Initiation and Major role in the development of new programs in the department (Minor in Engineering Project Management and Concentration in Environmental Engineering) beside leadership in initiating and proposing the change of name of department to include Environmental Engineering.
- High quality dedicated effort in outreach of home students including the initiation and development of innovative Winter Camp and THE Award Winning Program of Engineer of the Future that won the Times Higher Education (THE) MENA Awards – Student Recruitment Campaign of the Year November 2023. This is one of total 10 awards in various categories in Higher education from 270 entries submitted by higher institutions from 17 different countries in the region. Leadership and initiation of a

unique comprehensive marketing campaign to attract home students to study Civil Engineering including the development of high quality video materials of short interviews with students and alumni for the use in communications with schools, presentations and in social media.

- Major role and effort in securing the 2023 ABET accreditation for the Civil Engineering undergraduate program beside major role and effort in the preceding internal reviews for undergraduate and postgraduate programs.
- Leadership and initiation of proposal of ISO-certification submitted to the Office of Research Planning and Quality at Qatar University. High contribution to the follow-up effort leading to the ISO-certification and recent re-certification as the first teaching department in QU pursuing such exercise.
- Initiation of the successful series of international conference in Civil Infrastructure and Construction, leading the communications for the first version in 2020, and chairing the organizing committee for the second version in 2023. Both attracted large number of audience, keynote speakers, executive speakers, government and local organizations, and professional institutions. Both conferences received the patronage of Prime Minister who attended the last version in 2023.
- Development of strong industrial interaction including the initiation and proposal to develop Ashghal Chair in the Department. Attracting of over 5.0M QAR to departmental activities.
- Maintaining of high level of interaction with media to disseminate outcomes of activities (including 2 interviews with Qatar TV and over 10 interviews/statements for local newspapers).
- Supporting the development of processes in the department to improve effectiveness and leading strong interaction with alumni and stakeholders that contributed positively to departmental progress in QS and Shanghai subject rankings.

I served in other roles and committees in Qatar University such as the Senior Design Project coordination of the Civil Engineering Program (August 2023- current), membership of the Civil Engineering program's Curriculum Committee (September 2015- December 2016), and membership of Qatar University Senate (August 2016- December 2016).

I served in the following main roles before joining Qatar University:

- Undergraduate Admissions Tutor of the Department of Civil Engineering, University of Nottingham, July 2010 – May 2013.
- Postgraduate Research Admissions Tutor for the Department of Civil Engineering, University of Nottingham, January 2008 – August 2010.

PROFESSIONAL ACTIVITIES

- Chair of organizing committee, the International Conference on Civil Infrastructure and Construction (CIC 2023), April 2022-Februrary 2023.
- Member of the Editorial Board for Transportation Geotechnics Journal, from February 2021-current.
- Member of organizing committee, the International Conference on Civil Infrastructure and Construction (CIC 2020), February 2019-Februrary 2020.
- Director for the International Institute of Acoustics and Vibration (IIAV), from July 2015- July 2019.
- Co-organiser of a conference session in ICSV on Road & Rail Traffic Noise & Vibration, held in UK from 23-27 July 2017.
- Co-organiser of a conference session in COMPDYN on Vibration induced by rail and road traffic, held in Greece from 15-17 June 2017.
- Co-organiser of a conference session in the EuroRegio 2016 congress, held in Portugal from 13-15 June 2016.
- Member of panel for Qatar's underground infrastructure and deep foundation summit, 31 May – 3 June 2015, Doha, Qatar.
- Co-organiser of a conference session in COMPDYN on Vibration induced by rail and road traffic, Greece from 25-27 May 2015.
- Member of the railway vibration expert panel for the IOA branch meeting on the 13th of May 2013 in Nottingham.
- Co-organiser of a conference session in the 11th Biennial International Conference on Vibration Problems (ICOVP-2013) in Lisbon, Portugal, in September 9 - 12, 2013.
- Organiser of a conference session in the International Conference on Computing in Civil and Building Engineering, Nottingham from the 30 June to 2 July 2010.
- Member of the organising committee of the International Conference on Computing in Civil and Building Engineering, Nottingham from the 30 June to 2 July 2010.

- Chairman of sessions for the 8th International Conference on Structural Dynamics (EURODYN) in July 2011.
- Chairman of sessions for the 16th International Congress on Sound and Vibration in July 2009.
- Chairman of sessions for the 14th International Congress on Sound and Vibration in July 2007.
- Reviewer for the following high-quality journals including:
  1- Journal of Sound and Vibration
  2- Engineering Structures
  3- Soil Dynamics and Earthquake Engineering
  4- Tunnelling and Underground Space Technology
  5- Journal of Rail and Rapid Transit
  6- Applied Mathematical Modelling
  7- Applied Acoustics

INVITED LECTURES & SEMINARS

1- Energy harvesting from railway slab-tracks, Cambridge University Engineering Department, Cambridge, 20/11/2020.
2- On the dynamic performance of floating-slab tracks, the 6th Underground Infrastructure & Deep Foundations Summit, Doha, Qatar, 24/5/2016.
3- The impact of ground-borne vibrations from railways on infrastructure and buildings above the ground and the engineering solutions, the 5th Underground Infrastructure & Deep Foundations Summit, Doha, Qatar, 2/6/2015.
4- An efficient numerical model for calculating vibration in a building from underground railway trains, International conference on vibration problems, Key Note lecture, Lisbon, Portugal, 12/9/2013.
5- Researches on ground-borne vibration at the University of Nottingham, Cambridge University Engineering Department, Cambridge, 23/11/2012.
6- Understanding the generation and propagation of vibration from railways, China Academy of Railway Sciences, Beijing, China, 24/10/2012.
7- Understanding the generation and propagation of vibration from railways, Beijing Jiaotong University, Beijing, China, 23/10/2012.
8- Modelling ground-borne vibration from railways: new developments and validation, Porto University, Porto, Portugal, 20/7/2012.

9- The dynamic behaviour of railway slab tracks, Cambridge University Engineering Department, Cambridge, 18/5/2007.
10- Using the PiP model for computing ground vibration from underground railways, Katholieke Universiteit Leuven, Belgium, 5/12/2006.

RESEARCH PROJECTS/CONTRACTS

1. **M.F.M. Hussein**, (Lead-PI), J. Renno (PI), Use of vibration measurements for monitoring the condition of wheels and tracks: towards the development of smart infrastructure for underground railway tunnels, Industrial funding from Qatar Rail, value $318k, start 15/12/2024, end 14/12/ 2027.
2. **M.F.M. Hussein** *(Primary Research Mentor*), J. Renno *(Research Mentor*), Control of Environmental Noise from Road Traffic: a web-based user interface, Undergraduate Research Experience Program (UREP), value $30k, start 1/10/2024, end 30/09/2025, Grant Ref: UREP31-088-2-028.
3. J. Renno (Lead-PI), **M.F.M. Hussein** (PI), Using Machine Learning for Building Digital Twins, Graduate Assistantship for PhD student, Qatar University, value QAR576k, start 20/8/2023, end 19/8/2027.
4. **M.F.M. Hussein** *(Lead-PI)*, J. Renno *(PI)*, Prediction and Attenuation of Ground-borne noise and Vibration in Buildings, Industrial funding from Qatar Rail, value $204k, start 9/11/2022, end 8/11/2024, Grant Ref: QUEX-QatarRail-22/23-4.
5. **M.F.M. Hussein** *(Lead-PI)*, J. Renno *(PI)*, Control of Ground-borne Noise and Vibration from Doha Metro, Industrial funding from Qatar Rail, value $192k, start 23/5/2021, end 22/11/2023, Grant Ref: QUEX-CENG-QR-21/22-1.
6. **M.F.M. Hussein** *(Lead-PI)*, Framework for Railway Research, Industrial funding from Qatar Rail, value $180k, start 16/10/2017, end 30/04/2020, Grant Ref: QUEX-CENG-RAIL17/18.
7. **M.F.M. Hussein** *(Lead-PI)*, Investigating the effects of soil inhomogeneity and tunnel cross-sections on vibration from underground railways, Qatar University Grant, value 66,000 QAR, start 08/01/2017, end 31/12/2018, Ref: QUUG-CENG-CAE-17\18-2.
8. O. Avci (*Lead-PI*)**, M.F.M. Hussein** (*PI*), A Unified Approach to Vibration Serviceability Assessment of Floors, QNRF 8th cycle, Value $800k, 10/02/2016-10/08//2019, Grant Ref: NPRP8-836-2-353.

9. **M.F.M. Hussein** (*Primary Research Mentor*), O. Avci (*Research Mentor*), O. Abdeljaber (*Research Mentor*), Characterization of soil profile and properties by Spectral Analysis of Surface Waves, Undergraduate Research Experience Program (UREP), Value $30k, 1/11/2016-31/10/2017, Grant Ref: UREP19-042-2-016.
10. O. Avci (*Primary Research Mentor*), **M.F.M. Hussein** (*Research Mentor*), Lateral Design Assessment of Low and Mid-Rise Reinforced Concrete Structures in Doha, Undergraduate Research Experience Program (UREP), Value $50k, 1/1/2016-6/1/2017, Grant Ref: UREP18-144-2-058.
11. **M.F.M. Hussein** *(Lead-PI)*, Vibration of Civil Engineering Structures, Qatar University Students Grant, value 31,500 QAR, start 20/09/2015, end 19/09/2016, Grant Ref: QUST-CENG-SPR-14/15-22.
12. **M.F.M. Hussein** *(Lead-PI)*, Modelling of Rotational Stiffness of pads and its influences on dynamics of railway tracks, Qatar University Start-up Grant, value 39,270 QAR, start 21/09/2015, end 31/03/2016, Grant Ref: QUSG-CENG-CAE-14\15-4.
13. **M.F.M. Hussein** *(Lead-PI)*, Modelling Of Train Induced Vibration (MOTIV), EPSRC responsive mode, Value £262,000, start 1/9/2012, end: 28/2/2017, Grant Ref: EP/K005847/1.
14. **M.F.M. Hussein** *(Lead-PI)*, Visiting Research Fellowship, Trinity College Cambridge University, Value £4,775, from July to December 2012, Ref: CM12.95.
15. **M.F.M. Hussein** *(Lead-PI)*, EPSRC CASE studentship on developing holistic approach for the design of railway infrastructure, Value £88k, 10/5/2011, end: April 2016, Grant Ref: EP/J500483/1.
16. **M.F.M. Hussein** *(Lead-PI)***,** Measurements of vibration from trams in Nottingham, the Nuffield Foundation for undergraduate student placement, 15/2/2011, Value £1,440, Grant Ref: URB/39498.
17. **M.F.M. Hussein** *(Lead-PI)***,** equipment for dynamic testing in centrifuge environment, internal divisional funding, Value £7k, 8/5/2009.
18. **M.F.M. Hussein** *(Lead-PI)*, Research fellowship, KU Leuven, €2k, June 2005.

SUPERVISED POSTGRADUATE STUDENTS

I supervised over 25 different students on postgraduate projects at the University of Nottingham and the University of Southampton. The list below is for the supervision of postgraduate research, including MSc thesis and PhD Dissertations at Qatar University, University of Southampton, and University of Nottingham.

1. Using Machine Learning for Building Digital Twins, Research Assistant name: Hana Yaseen Abedrabbh Shmayleh, Qatar University, (Feb 1, 2024 - Jan 31, 2027), Supervisors: Renno, J. (50%), Hussein, M.F.M. (50%).
2. Estimating the unevenness of roads and railway tracks using AI based methods, Research Assistant name: Kais Aiman Douier, Qatar University, (Oct 1, 2020 - Sep 30, 2024), Supervisors: Hussein, M.F.M. (50%), Renno, J. (50%).
3. Investigating the behaviour of in-track countermeasures in reducing ground-borne vibration from underground railways, Research Assistant name: Hana Yaseen Abedrabbh Shmayleh, Qatar University, (November 1, 2020 - Oct 31, 2023), Supervisors: Hussein, M.F.M. (100%).
4. Effect of service facilities on ground-borne vibration from underground railways, student name: Abdimagid Mustaf, Qatar University, (Sep 1, 2022 - August 31, 2024), Supervisors: Hussein, M.F.M. (50%), Renno, J. (50%).
5. Developing new type of dampers for railway tracks, Research Assistant name: Elbadri, Y., Framework for Railway Research (Project supported by Qatar Rail), Qatar University, (November 1, 2018 - June 30, 2019), Supervisors: Hussein, M.F.M. (50%), Sassi, S. (50%).
6. Energy harvesting from railway tracks, Research Assistant name: Elshafei, S., Framework for Railway Research (Project supported by Qatar Rail), Qatar University, (October 1, 2018 - April 4, 2019), Supervisors: Hussein, M.F.M. (50%), Renno, J. (40%), Muthalif, A. (10%).
7. Numerical and experimental investigation of a special type of floating-slab tracks, Student name: Alabbasi, S., MSc Thesis, Qatar University, (January 1, 2017 - April 1, 2019), Supervisors: Hussein, M.F.M. (100%).
8. Discrete Element modelling of railroad ballast under simulated train loading, Student name: Alabbasi, Y., MSc Thesis, Qatar University, (January 1, 2017 - April 1, 2019) , Supervisors: Hussein, M.F.M. (100%).
9. Real-time structural damage detection using one-dimensional convolutional neural networks, Student name: Abedeljaber, O., PhD Dissertation, Qatar University, (January 1, 2016 - December 28, 2018), Supervisors: Avci, O. (40%), Hussein, M.F.M. (30%), Kiranyaz, S. (30%).
10. An investigation of vibration from underground tunnels by using a plane-strain finite element model, Student name: Aldous, K., MSc Thesis, Qatar University, (February 1, 2016 - April 1, 2018) , Supervisors: Hussein, M.F.M. (100%).
11. Operational model analysis using Ambient Vibration Data for Al-SINYAR Tower and FEM updating, Student name: Alkhamis, K., MSc Thesis, Qatar University, (February 1, 2017 - December 1, 2017) , Supervisors: Hussein, M.F.M. (100%).
12. Analytical Modelling of the vibration of railway track, Student name: Kostovasilis, D., PhD Dissertation, University of Southampton, (October 1, 2012 - June 21, 2017), Supervisors: Thompson, D.J. (75%) and Hussein, M.F.M. (25%).
13. Assessment of Bonded Post-tensioned Concrete with Ruptured Tendons, Student name: Abdelatif, A., PhD Dissertation, University of Nottingham, (September 1, 2009 - December 1, 2013), Supervisors: Owen, J.S. (50%) and Hussein, M.F.M. (50%).

14. Modelling the non-linear behaviour of railway Tracks, Student name: Koroma, S., PhD Dissertation, University of Nottingham, (September 1, 2009 - December 1, 2013), Supervisors: Hussein, M.F.M. (75%) and Owen, J.S. (25%).
15. Crowd-induced lateral bridge vibration, Student name: Carroll, S., PhD Dissertation, University of Nottingham, (September 1, 2009 - July 1, 2013) , Supervisors: Owen, J.S. (50%) and Hussein, M.F.M. (50%).
16. Flexural Crack Modelling for Vibration-Based Damage Detection of Reinforced Concrete Beams, Student name: Hamad, W., PhD Dissertation, University of Nottingham, (September 1, 2008 - October 1, 2012), Supervisors: Owen, J.S. (50%) and Hussein, M.F.M. (50%).
17. Modelling vibration from surface sources and underground tunnels using centrifuge modelling, Student name: Wenbo, Y., PhD Dissertation, University of Nottingham, (September 1, 2007 - September 1, 2011), Supervisors: Hussein, M.F.M. (70%) and Marshall A. (30%).

CONSULTANCIES

- I served as Chair of expert-panel from Qatar University to provide engineering feedback on a court case for the Supreme Judiciary Council in Qatar, 1/5/2016-13/12/2016.

- I was involved in the EPSRC project MOTIV (see details under research projects) with an approved consultancy by the College of Engineering at Qatar University.

- I was member of the University of Southampton Consultants offering expertise for consultancies in the field of dynamics and vibration and in particular ground-borne vibration from railways.

- I was a member of the Nottingham University Consultants - undertaken a number of Structural Engineering consultancies including lab testing and certification of design software.

- Invited to act as a consultant for a proposed research project led by Dr. Pedro Costa of the University of Porto to the FCT- Portuguese authority for scientific and technical research. The project is about modelling and experimental assessment of vibration induced by traffic in tunnels, 26/3/2012.

EXTERNAL EXAMINATION

1. Kolothum Thodika Azoom, Development of hybrid damping-restrainer joint system for the modular structures, Universiti Putra Malaysia, review of PhD dissertation, 22/12/2023.

2. Hassan Liravi, PhD dissertation, Acoustical and Mechanical Engineering Laboratory, Universitat Politècnica de Catalunya, 29/7/2022.

3. Joao Barbosa, PhD dissertation, Department of Civil Engineering, Porto University, 22/9/2015.
4. Qian Wang, MPhil dissertation, Department of Engineering, University of Cambridge, 4/10/2013.
5. Nawras Hamdan, PhD dissertation, Institute of for Infrastructure & Environment, Heriot Watt University, Edinburgh, 30/7/2013.
6. David Paul Wilson, MSc Essay, Department of Architecture, University of Cambridge, 22/6/2011.
7. Kirsty Kuo Newton, PhD dissertation, Department of Engineering, University of Cambridge, 27/9/2010.
8. Maarten Beckers, MSc dissertation, Department of Civil Engineering, Katholieke Universiteit Leuven, 24/6/2010.
9. Lars Rikse, MSc dissertation, Department of Civil Engineering, Katholieke Universiteit Leuven, 2/7/2007.

SOFTWARE DEVELOPMENT

I developed and co-developed a number of software packages for analysing practical problems in Civil Engineering. The main software application is PiP software for calculating vibration from railways. The software is developed in collaboration with Dr. Hugh Hunt of the University of Cambridge. Since the release of version 3 in September 2009, more than 400 users have downloaded and used the software, ranging from vibration and noise consultants to academics and researchers with interests in railway noise and vibration. The users are distributed geographically, with a majority from the UK, Australia, USA and China. The software has been used by consultants as well as the developers in the assessment of the vibration environment from real railway tunnels, see <www.pipmodel.com> for more details about the software. I was also a member of the team who developed MOTIV software (which resulted from the research project MOTIV), see <https://motivproject.co.uk/motiv-software/>.

PUBLICATIONS

Journal papers

1. Douier, K., Renno, J. and **Hussein, M.F.M.,** Reconstructing Road Roughness Profiles using ANNs and Dynamic Vehicle Accelerations, 2024, Infrastructures, 9(11):198.

2. Shamayleh, H.Y.A. and **Hussein, M.F.M.**, 2024, Investigating the effects of in-track countermeasures to reduce ground-borne vibration from underground railways. Journal of Low Frequency Noise, Vibration & Active Control, 14613484241244625.

3. Colaco, A., Alves Costa, P., **Hussein, M.F.M.**, 2024, The influence of rail unevenness profile on the generation of ground vibrations by railway traffic. Applied Sciences, 14, 20, 9312.

4. Alsharo, A., Douier, K., **Hussein, M. F.M.**, Renno, J., 2024, Investigating the effect of using softer rail-pads on ground-borne vibration from underground railways. International Journal of Rail Transportation, 12, 5, 803-826.

5. Lamprea-Pineda, A.C., Connolly, D.P., Castanheira-Pint, A., Alves-Costa, P., **Hussein, M.F.M.**, Woodward, P.K., 2024, On railway track receptance, Soil Dynamics and Earthquake Engineering, 177, 108331.

6. Badri, Y., Alhams, A., Sassi, S., **Hussein, M.F.M.**, Renno, J., 2023, Enhancing the Damping Effect of MRF Damper Using an External Magnetic Excitation System. Materials Research Express, 10, 9, 095703.

7. **Hussein, M.F.M.**, Renno, J., Muthalif, A., 2023, Energy Harvesting from Railway Slab-Tracks with Continuous Slabs, Journal of Vibration and Control, 29, 3-4, 882-901.

8. Lamprea-Pineda, A.C., Connolly, D.P., **Hussein, M.F.M.**, 2022, Beams on elastic foundations–a review of railway applications and solutions, Transportation Geotechnics, 33, 100696.

9. Avci, O., Alkhamis, K., Abdeljaber, O., Alsharo, A., **Hussein, M.F.M.**, 2022, Operational modal analysis and finite element model updating of 230 m tall tower, Structures, 37, 154-167.

10. Badri, Y., Sassi, S., **Hussein, M.F.M.**, Renno J., 2022, Experimental and numerical investigation of damping in a hybrid automotive damper combining viscous and multiple-impact mechanisms, Journal of Vibration and Control, 28, 23-24.

11. Alabbasi, Y., **Hussein, M.F.M.**, 2021, Geomechanical Modelling of Railroad Ballast: A Review, Archives of Computational Methods in Engineering, 28, 3, 815-839

12. Badri, Y., Syam, T., Sassi, S., **Hussein, M.F.M.**, Renno J., Ghani, S., 2021, Investigating the characteristics of a magnetorheological fluid damper through CFD modeling, Materials Research Express, 8, 5, 055701.

13. Avci, O., Abdeljaber, O., Kiranyaz, S., **Hussein, M.F.M.**, Gabbouj, M., Inman, D., 2021, A Review of vibration-based damage detection in civil structures: from traditional methods to machine learning and deep learning applications, Mechanical Systems and Signal Processing, 147, 107077.

14. Abdelatif, A.O, Owen, J.S., and **Hussein, M.F.M.**, 2020, A Novel Test Method for Tendon Re-anchorage in Bonded Post Tensioned Concrete using ESPI Full Field measurement, Materials and Structures, 53, 59.

15. Alabbasi, S., **Hussein, M.F.M.**, Abdeljaber, O., Avci, O., 2020, A Numerical and Experimental Investigation of a Special Type of Floating-Slab Tracks, Engineering Structures, 215, 110734.

16. Abdeljaber, O., **Hussein, M.F.M.**, Avci, O., Davis, D., Reynolds, P., 2020, A Novel Video-Vibration Monitoring System for Walking Pattern Identification on Floors, Advances in Engineering Software, 139, 102710.

17. Alabbasi, Y., **Hussein, M.F.M.**, 2019, Large-Scale Triaxial and Box Testing on Railroad Ballast: A Review, SN Applied Sciences, 1, 1592.

18. Ntotsios, E., Thompson, D.J., **Hussein, M.F.M.**, 2019, A comparison of ground vibration due to ballasted and slab tracks, Transportation Geotechnics, 21, 100256.

19. Muhammad, Z., Reynolds, P., Avci, O., **Hussein, M.F.M.**, 2019, Review of Pedestrian Load Models for Vibration Serviceability Assessment of Floor Structures, Vibration, 2, 1, 1-24.

20. Avci, O., Abdeljaber, O., Kiranyaz, S., **Hussein, M.F.M.**, Inman, D.J., 2018, Wireless and real-time structural damage detection: A novel decentralized method for wireless sensor networks, Journal of Sound and Vibration 424, 158-172.

21. Brookes, D., Hamad, W.I., Talbot, J.P., Hunt, H.E.M., **Hussein, M.F.M.**, 2018, The dynamic interaction effects of railway tunnels: Crossrail and the Grand Central Recording Studios, Journal of Rail and Rapid Transit, 1-18.

22. Ntotsios, E., Thompson, D.J., **Hussein, M.F.M.**, 2017, The effect of track load correlation on ground-borne vibration from railways, Journal of Sound and Vibration, 402, 142-163.

23. Verachtert, R., Hunt, H.E.M., **Hussein, M.F.M.**, Degrande, G., 2017, Changes of perceived unevenness caused by in-track vibration countermeasures in slab track, European Journal of Mechanics - A/Solids, 65, 40-58.

24. Younis, A., Avci, O., **Hussein, M.F.M.**, Davis, B., Reynolds, P., 2017, Dynamic Forces Induced on Building Floors by a Single Pedestrian: A Literature Review, the Applied Mechanics Reviews, 69, 020802, 17 pages.

25. Abdelatif, A.O, Owen, J.S., and **Hussein, M.F.M.**, 2017, Modelling and parametric study of the re-anchorage of ruptured tendons in bonded post-tensioned concrete, Journal of Structural Engineering, 143 (12), art. no. 04017162.

26. Koroma, S.G., Thompson, D.J., **Hussein, M.F.M.**, Ntotsios, E., 2017, A mixed space-time and wavenumber-frequency domain procedure for modelling ground vibration from surface railway tracks, Journal of Sound and Vibration, 400, 508-532

27. Kostovasilis, D., Thompson, D.J., **Hussein, M.F.M.**, 2017, A semi-analytical beam model for the vibration of railway tracks, Journal of Sound and Vibration, 393, 321-337.

28. **Hussein, M.F.M.** and Costa. P.A., 2017, The effect of end bearings on the dynamic behavior of floating-slab tracks with discrete slab units, International Journal of Rail Transportation, 5, 1, 38-46

29. Thompson, D., Jiang, J., Toward, M.G.R, **Hussein, M.F.M.**, Ntotsios, E., Dickmans, A., Coulier, P., Lombaert, G. and Degrande, G. 2016, Reducing railway-induced ground-borne vibration by using open trenches and soft-filled barriers, Soil Dynamics and Earthquake Engineering, 88, 45-59.

30. Abdelatif, A.O, Owen, J.S., and **Hussein, M.F.M.**, 2016, Rapid assessment of bonded post-tensioned concrete beams with ruptured tendons, Sudan Engineering Society Journal, 62 (2), 14-17.

31. Thompson, D.J., Jiang, J., Toward, M.G.R., **Hussein, M.F.M.**, Dijckmans, A., Coulier, P., Degrande, G., Lombaert, G., 2015, Mitigation of railway-induced vibrations by using subgrade stiffening. Soil Dynamics and Earthquake Engineering, 79(part A), 89-103.

32. Koroma, S.G., **Hussein, M.F.M.**, Owen, J.S., 2015, The effects of preload and nonlinearity on the vibration of railway tracks under a harmonic load, Journal of Low Frequency Noise, Vibration and Active Control, 34, 3, 289–306.

33. Hamad, W.I., Owen, J.S., **Hussein, M.F.M.**, 2015, Modelling the degradation of vibration characteristics of reinforced concrete beams due to flexural damage, Structural Control and Health Monitoring, 22, 6, 939–967.

34. Abdelatif, A.O, Owen, J.S., and **Hussein, M.F.M.**, 2015, Modelling the prestress transfer in pre-tensioned concrete elements, Finite Elements in Analysis and Design, 94, 47–63.

35. **Hussein, M.F.M.**, Hunt, H.E.M., Kuo, K.A., Costa, P.A., and Barbosa, J., 2015, The use of sub-modelling technique to calculate vibration in buildings from underground railways, Journal of Rail and Rapid Transit, 229,3, 303-314.

36. **Hussein, M.F.M.**, Francois, S. , Schevenels, M., Hunt, H.E.M., Talbot, J.P., Degrande, G., 2014, The fictitious force method for efficient calculation of vibration from a tunnel embedded in a multi-layered half-space, Journal of Sound and Vibration, 333, 25, 6996–7018.

37. Carroll, S.P., Owen, J.S. and **Hussein, M.F.M.**, 2014, Experimental identification of the lateral human-structure interaction mechanism and assessment of the inverted-pendulum biomechanical model, Journal of Sound and Vibration, 333, 22, 5865–5884.

38. Koroma, S.G., **Hussein, M.F.M.**, Owen, J.S., 2014, Vibration of a beam on continuous elastic foundation with nonhomogeneous stiffness and damping under a harmonically excited mass, Journal of Sound and Vibration, 333,9, 2571–2587.

39. Yang, W., **Hussein, M.F.M.**, Cox C., and Marshall A., 2013. Centrifuge and numerical modelling of ground-borne vibration from an underground tunnel, Soil Dynamics and Earthquake Engineering, 51, 23-34.

40. Hamad, W.I., Owen, J.S., **Hussein, M.F.M.**, 2013, An efficient approach of modelling the flexural cracking behaviour of un-notched plain concrete prisms subject to monotonic and cyclic loading, Engineering Structures, 51, 36-50.

41. Carroll, S.P., Owen, J.S., and **Hussein, M.F.M.**, 2013. Reproduction of lateral ground reaction forces from visual marker data and analysis of balance response while walking on a laterally oscillating deck, Engineering Structures, Engineering Structures, 49, 1034-1047.

42. Carroll, S.P., Owen, J.S., and **Hussein, M.F.M.**, 2013. A coupled biomechanical/discrete element crowd model of crowd-bridge dynamic interaction & application to the Clifton Suspension Bridge, Engineering Structures, 49, 58–75.

43. Yang, W., **Hussein, M.F.M.**, Marshall, A., and Cox, C., 2013. Centrifuge and numerical modelling of ground-borne vibration from surface sources, Soil Dynamics and Earthquake Engineering, 44, 78–89.

44. Jones, S., Kuo, K.A., **Hussein, M.F.M.**, and Hunt, H.E.M., 2012. Prediction uncertainties and inaccuracies resulting from common assumptions in modelling vibration from underground railways, Journal of Rail and Rapid Transport, 226(5), 501-512.

45. Carroll, S.P., Owen, J.S., and **Hussein, M.F.M.**, 2012. Modelling crowd-bridge dynamic interaction with a discretely defined crowd, Journal of Sound and Vibration, 331(11), 2685-2709.

46. Kuo, K.A., Hunt, H.E.M. and **Hussein, M.F.M.**, 2011. The effect of a twin tunnel on the propagation of ground-borne vibration from an underground railway, Journal of Sound and Vibration, 330(25), 6203-6222.

47. Jones, S., **Hussein, M.F.M.**, and Hunt, H.E.M., 2010. Use of PiP to investigate the effect of a free surface on ground vibration due to underground railways, Acoustics Australia, 38(1), 20-24.

48. **Hussein, M.F.M.** and Hunt, H.E.M., 2009. A numerical model for calculating vibration due to a harmonic moving load on a floating-slab track with discontinuous slabs in an underground railway tunnel, Journal of Sound and Vibration, 321(1-2), 363-374.

49. **Hussein, M.F.M.** and Hunt, H.E.M., 2007. A numerical model for calculating vibration from a railway tunnel embedded in a full-space. Journal of Sound and Vibration, 305(3), 401-431.

50. Gupta, S., **Hussein, M.F.M.**, Degrande, G., Hunt, H.E.M. and Clouteau, D., 2007. A comparison of two numerical models for the prediction of vibrations from underground railway traffic. Soil Dynamics and Earthquake Engineering, 27(7), 608-624.

51. **Hussein, M.F.M.** and Hunt, H.E.M., 2006. Modelling of Floating-Slab track with Discontinuous Slab Part I: Response to Oscillating Moving Loads. Journal of Low Frequency Noise, Vibration and Active Control, 25(1), 23-40.

52. **Hussein, M.F.M.** and Hunt, H.E.M., 2006. Modelling of floating-slab track with discontinuous slab Part 2: response to moving trains. Journal of Low Frequency Noise, Vibration and Active Control, 25(2), 111-118.

53. **Hussein, M.F.M.** and Hunt, H.E.M., 2006. Modelling of floating-slab tracks with continuous slabs under oscillating moving loads. Journal of Sound and Vibration, 297(1-2), 37-54.

54. **Hussein, M.F.M.** and Hunt, H.E.M., 2006. A power flow method for evaluating vibration from underground railways. Journal of Sound and Vibration, 293(3-5), 667-679.

Books and Book chapters

55. Alnahhal, W., **Hussein, M.F.M.**, Al-Ansari, A., Al-Kuwari, M., Ahmed, E., Gunduz, M., Plevris, V., Khamidi, M., Ayari, M., 2023, Proceedings of the 2nd International Conference on Civil Infrastructure and Construction (CIC 2023), Qatar University Press.

56. Sirin, O., Ebead, U., Eid, H., Gunduz, M., and **Hussein, M.F.M.**, 2020, Proceedings of International Conference on Civil Infrastructure and Construction (CIC 2020), Qatar University Press.

57. Talbot, J.P., Hunt, H.E.M. and **Hussein, M.F.M.**, 2019, Computational tools for predicting ground vibration from railways, A chapter in the book: Ground Vibrations from High-speed Railways: Prediction and mitigation, Editor: V. Krylov, ICE publishing, 77-95.

58. Hunt, H.E.M. and **Hussein, M.F.M.**, 2007. Ground-borne vibration transmission from road and rail systems – Prediction and control. Chapter 123 in: Malcolm J. Crocker, ed. Handbook of Noise and Vibration Control. John Wiley and Sons, New York, 1458-1469.

Conference papers

59. Shamayleh, H., Renno, J., **Hussein, M.F.M.**, 2024, Estimating the Parameters of a Structure by Using its Dynamic Response: a study based on a cantilever beam, the 11th International Conference on Advanced Materials, Mechanics and Structural Engineering (AMMSE), Incheon, South Korea, 13-15 December 2024.

60. Mustaf, A., **Hussein, M.F.M.**, and Renno, J., 2024, Investigating the influence of a second tunnel and utility corridor on ground-borne vibration induced by underground railways, The 30th International Congress on Sound and Vibration (ICSV30), Amsterdam, the Netherlands, 8-11 July.

61. Abdallah, O., **Hussein, M.F.M.**, and Renno, J., 2024, Numerical simulation of ground-borne vibration transnission to planned third-party buildings from metro lines: integrating the Pipe-in-Pipe model and Finite Element in 2D calculations, The 30th International Congress on Sound and Vibration (ICSV30), Amsterdam, the Netherlands, 8-11 July.

62. Colaco, A., Ramos, A., Alves Costa, P., **Hussein, M.F.M.**, 2023, Prediction of ground-borne vibrations induced by railway traffic based on machine learning techniques, the 54th Spanish Congress of Acoustics -TECNIACÚSTICA 2023, Cuenca, Spain, 18-20 October.
63. Colaco, A., Ramos, A., Alves Costa, P., **Hussein, M.F.M.**, 2023, Prediction of vibrations induced by railway traffic using a surrogate model, XLIV Ibero-Latin American Congress on Computational Methods in Engineering, Porto, Portugal, 13-16 November.
64. Shamayleh, H.Y.A. and **Hussein, M.F.M.**, 2023, Investigating the dynamic effect of in-track vibration countermeasures, Techni Acustica he 29th International Congress on Sound and Vibration (ICSV29), Prague, Czech Republic, 9-13 July.
65. Alsharo, A., Douier, K., **Hussein, M.F.M.**, and Renno, J., 2023, A measurement campaign to investigate the effect of using soft railpads on ground-borne vibration from underground railways, The 29th International Congress on Sound and Vibration (ICSV29), Prague, Czech Republic, 9-13 July.
66. Douier, K., **Hussein, M.F.M.**, and Renno, J., 2023, Modal Characterization and Road Roughness Reconstruction Using Dynamic Vehicle Accelerations and ANNs, the 9th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Athens, Greece, 12-14 June.
67. Lamprea-Pineda, A., Castanheira-Pinto, A., Alves Costa, P., Woodward, P.K., **Hussein, M.F.M.**, Connolly, D., 2023, Railway Track Structural Dynamics Via Periodic Approaches, the 9th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Athens, Greece, 12-14 June.
68. Douier, K., **Hussein, M.F.M.**, and Renno, J., 2023, Road Profile Estimation Using Full/Quarter-Car Model with Artificial Neural Networks, the 15th International Conference on Vibration Problems (ICOVP15), Doha, Qatar, 5-8 February.
69. Lamprea-Pineda, A, Connolly, D., **Hussein, M.F.M.**, Alves Costa, P., and Woodward, P., Modelling the Critical Speed Amplification Effect on Railway Track-Ground Systems, 2022, The Fifth International Conference on Railway Technology: Research, Development and Maintenance, Montpellier, France, 22-25 August.
70. Shamayleh, H.Y.A. and **Hussein, M.F.M.**, 2022, Investigating the effect of preload on the behavior of rail pads for railway tracks under quasi-static and dynamic loads, The 10th International Conference on Wave Mechanics and Vibrations (WMVC), Lisbon, Portugal, 4-6 July.
71. Douier, K., **Hussein, M.F.M.**, and Renno, J., Reconstruction of Road Defects from Dynamic Vehicle Accelerations by using the Artificial Neural Networks, 2022, The 10th

International Conference on Wave Mechanics and Vibrations (WMVC), Lisbon, Portugal, 4-6 July.

72. Douier, K., **Hussein, M.F.M.**, and Renno, J., Predicting road roughness Profile using dynamic vehicle accelerations and Artificial Neural Networks, 2022, The 28th International Congress on Sound and Vibration (ICSV), Singapore 24-28 July.

73. Lamprea-Pineda, A., Connolly, D., Woodward, P.K., **Hussein, M.F.M.**, Alves Costa, P., 2022, Semi-analytical of train induced ground-borne vibrations effects, The 28th International Congress on Sound and Vibration (ICSV), Singapore 24-28 July.

74. Avci, O., Alkhamis, K., Abdeljaber, O., **Hussein, M.F.M.**, 2022, Operational Modal Analysis and Finite Element Model Updating of a 53-Story Building, the 39th IMAC, A Conference and Exposition on Structural Dynamics, Orlando, Florida, USA, 8-11 February.

75. Avci, O., Abdeljaber, O., Kiranyaz, S., **Hussein, M.F.M.**, Gabbouj, M., and Inman, D., 2022, A New Benchmark Problem for Structural Damage Detection: Bolt Loosening Tests on a Large-Scale Laboratory Structure, the 39th IMAC, A Conference and Exposition on Structural Dynamics, Orlando, Florida, USA, 8-11 February.

76. Elshafei, S., **Hussein, M.F.M.**, Renno, J., Muthalif, A., 2021, Energy harvesting from railway vibrations – A numerical study based on beam-on-elastic-foundation under quasi-state loading, the 8th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete, Greece, 28-30 June.

77. Badri, Y., Syam, T., Sassi, S., **Hussein, M.F.M.**, Renno, J., and Ghani, S., 2021, Numerical study on the damping characteristics of a shock absorber valve utilizing different velocities through CFD analysis, the 8th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete, Greece, 28-30 June.

78. Edirisinghe, T.L., Talbot, J.P., and **Hussein, M.F.M.**, 2020, Accounting for the influence of the free surface on the vibration response of underground railway tunnels: a new iterative method, ISMA 2020-International Conference on Noise and Vibration Engineering, 7-9 September.

79. Badri, Y., **Hussein, M.F.M.**, Sassi, S., and Renno, J., 2020, Investigation of the Effect of the Force-Frequency on the Behaviour of a New Viscous Damper for Railway Applications, International Conference on Civil Infrastructure and Construction (CIC 2020), Doha, Qatar, 2-5 February.

80. Alabbasi, Y., **Hussein, M.F.M.**, 2020, Comparison of the Mechanical Behavior of Railroad Ballast in a Box Test under Sinusoidal and Realistic Train Loadings Using Discrete Element

Method, International Conference on Civil Infrastructure and Construction (CIC 2020), Doha, Qatar, 2-5 February.

81. Alabbasi, Y., **Hussein, M.F.M.**, 2019, Investigating the behavior of railroad ballast in a box test under sinusoidal and simulated train loading, the 7th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete, Greece, 24-26 June.

82. Alabbasi, S., **Hussein, M.F.M.**, Abdeljaber, O., Avci, O., 2019, Investigating the Dynamics of a special type of a floating-slab track, the 7th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete, Greece, 24-26 June.

83. Abdeljaber, O., **Hussein, M.F.M.**, Avci, O., 2018, In-service video-vibration monitoring for identification of walking patterns in an office floor, the 25th International Congress on Sound and Vibration (ICSV25), Hiroshima, Japan, 8-12 July.

84. Aldous, K., **Hussein, M.F.M.**, Abdeljaber, O., 2018, Ground-borne vibration investigation by modelling the tunnel-soil interaction using a Finite Element Package, the 25th International Congress on Sound and Vibration (ICSV25), Hiroshima, Japan, 8-12 July.

85. Pinto, A., Costa, P.A., Colaco, A., Lopes, P., **Hussein, M.F.M.**, 2017, Ground-borne vibrations due to railway traffic in urbanized areas: a numerical study about traffic in trench cross-sections, In: the 6th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (Compdyn), Rhodes Island, Greece, 15–17 June.

86. Evangelos, N., Thompson, D. J., **Hussein, M.F.M.**, 2017, The effect of track unevenness correlation on railway induced ground vibration, In: the 6th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (Compdyn), Rhodes Island, Greece, 15–17 June.

87. Hunt, H.E.M., **Hussein, M.F.M.**, Hamad, W.I., 2017, the PiP model and progress in ground vibration from railways, Acoustics 2017, Perth, Australia, 19-22 November.

88. **Hussein, M.F.M.** and Costa. P.A., 2016, The effect of end bearings on the dynamic behavior of floating-slab tracks with discrete slab units, In ICSV23: 23rd International Congress on Sound and Vibration, Athens, Greece, 10 - 14 July.

89. Abdelatif, A.O, Owen, J.S., and **Hussein, M.F.M.**, 2016, Rapid assessment of bonded post-tensioned concrete beams, the 1st conference on civil engineering, Merowe, Sudan, 13th-15th Dec.

90. Tehrani, M.G., **Hussein, M.F.M.**, 2015, Energy harvesting from moving loads on a beam with elastic foundation, In: International Conference on Engineering Vibration (ICoEV2015), Ljubljana, Slovenia, 7-10 September.

91. Kostovasilis, D., Thompson, D.J., **Hussein, M.F.M.**, 2015, The effect of vertical-lateral coupling of rails including initial curvature, In: the 22nd International Congress on Sound and Vibration (ICSV22), Florence, Italy, 12 to 16 July.

92. Jin, Q., Thompson, D.J., Lurcock, D., Toward, M., Ntotsios, E., Koroma, S., **Hussein, M.F.M.**, 2015, Experimental validation of a numerical model for the ground vibration from trains in tunnels, In: the 10th European Congress and Exposition on Noise Control Engineering (EuroNoise), Maastricht, The Netherlands, May 31st to June 3rd.

93. Hamad, W.I., Ntotsios, E., Hunt, H.E.M. **Hussein, M.F.M.**, Thompson, D.J., and Talbot, J.P., 2015, Modelling the dynamic pile-soil-pile interaction in a multi-layered half-space, In: the 10th European Congress and Exposition on Noise Control Engineering (EuroNoise), Maastricht, The Netherlands, May 31st to June 3rd.

94. Ntotsios, E., Thompson, D.J., and **Hussein, M.F.M.**, 2015, Effect of rail unevenness correlation on the prediction of ground-borne vibration from railways, In: the 10th European Congress and Exposition on Noise Control Engineering (EuroNoise), Maastricht, The Netherlands, May 31st to June 3rd.

95. Koroma, S.G., Thompson, D.J., **Hussein, M.F.M.**, and Evangelos, N., 2015, A mixed space-time and wavenumber domain model for predicting vibration from railway tracks, In: the 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete Island, Greece, 25–27 May.

96. Ntotsios, E., Hamad, W.I., Thompson, D.J., **Hussein, M.F.M.**, Hunt, H.E.M., Talbot, J.P., 2015, Predictions of the dynamic response of piled foundations in a multi-layered halfspace due to inertial and railway induced loadings, In: the 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete Island, Greece, 25–27 May.

97. Hamad, W.I., Hunt, H.E.M., Talbot, J.P., **Hussein, M.F.M.**, Thompson, D.J., 2015, The dynamic interaction of twin tunnels embedded in a homogeneous half-space, In: the 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete Island, Greece, 25–27 May.

98. Ntotsios, E., Koroma, S.G., Hamad, W.I., Thompson, D.J., Hunt, H. E.M., Talbot, J.P., **Hussein, M.F.M.**, 2015, Modelling train induced vibration, In: IMechE Stephenson conference, London UK, 21-23 April.

99. Koroma, S.G., **Hussein, M.F.M.**, Thompson, D.J., and Evangelos, N., 2014, The effect of non-linearity of railway tracks on ground-borne vibration. In ICSV21: 21st International Congress on Sound and Vibration, Beijing China, 13 - 17 July.

100. Jiang, J. Toward, M., Dijckmans, A., Thompson, D.J., Degrande, G., Lombaert, G., **Hussein, M.F.M.**, 2014, The influence of soil conditions on railway induced ground-borne vibration and relevant mitigation measures, In ICSV21: 21st International Congress on Sound and Vibration, Beijing Shi, 13 - 17 July.

101. Verachtert R., Hunt, H.E.M., **Hussein, M.F.M.**, Degrande, G., 2014, Changes in railway unevenness after the installation of in-track vibration countermeasures, In: the 9th International Conference on Structural Dynamics (EURODYN), Porto, Portugal, 30th June-2nd July.

102. Hamad, W.I., Hunt, H.E.M., **Hussein, M.F.M.**, and Talbot, J.P., 2014, Tunnel-soil-pile interaction in the prediction of vibration from underground, In: the 9th International Conference on Structural Dynamics (EURODYN), Porto, Portugal, 30th June-2nd July.

103. Kostovasilis, D., **Hussein, M.F.M.**, , Thompson, D.J., 2014, A holistic approach for the design and assessment of railway tracks, In: the 9th International Conference on Structural Dynamics (EURODYN), Porto, Portugal, 30th June-2nd July.

104. Ntotsios, E., **Hussein, M.F.M.**, Thompson, D.J., 2014, A comparison between different approaches for calculating Power Spectral Densities of ground-borne vibration from railway trains, In: the 9th International Conference on Structural Dynamics (EURODYN), Porto, Portugal, 30th June-2nd July.

105. Toward, M.G.R., Jiang, J., Dijckmans, A., Coulier, P., Thompson, D.J., Degrande, G., Lombaert, G. and **Hussein, M.F.M.**, 2014, Mitigation of railway induced vibrations by using

subgrade stiffening and wave impeding blocks. In: the 9th International Conference on Structural Dynamics (EURODYN), Porto, Portugal, 30th June-2nd July.

106. Kuo, K.A., Hunt, H.E.M., Jones, S., **Hussein, M.F.M.**, 2013. Recent developments in the Pipe-in-Pipe model for underground-railway vibration predictions. In: the 11th International Workshop on Railway Noise (IWRN), Uddevalla, Sweden, 9th-13th of September, Proceedings published in Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 126, 2015, 321-328.

107. **Hussein, M.F.M.**, Hunt, H.E.M., Kuo, K.A., Costa, P.A., Barbosa, J., 2013, A numerical model for calculating vibration in a building with pile foundation from underground railway trains, In: the 11th Biennial International Conference on Vibration Problems, Lisbon, Portugal, 9th-12th of September.

108. Kostovasilis, D., Koroma, S.G., **Hussein, M.F.M.**, Owen, J.S., 2013, The effect of preload and nonlinearity on the vibration of railway tracks under harmonic load, In: the 11th Biennial International Conference on Vibration Problems, Lisbon, Portugal, 9th-12th of September.

109. Koroma, S.G., **Hussein, M.F.M.**, Owen, J.S., the effects of railpad nonlinearity on the vibration of railway tracks under harmonic load, 2013, In: the 11th Biennial International Conference on Vibration Problems, Lisbon, Portugal, 9th-12th of September.

110. Koroma, S.G., **Hussein, M.F.M.**, Owen, J.S., 2013, The effects of railpad nonlinearity on the dynamic behaviour of railway track. In the Institute of Acoustics conference, Nottingham, UK, 13th May.

111. Kostovasilis, D., Koroma, S.G., **Hussein, M.F.M.** and Owen, J.S., 2013, The effect of curvature on the dynamic behaviour of a railway track. In the Institute of Acoustics conference, Nottingham, UK, 13th May.

112. **Hussein, M.F.M.,** Hunt, H.E.M., Kuo, K.A., Costa, P.A., Barbosa, J., 2013, the dynamic effect of a piled-foundation building on an incident vibration field from underground railway tunnel, In: the 20th International Congress on Sound and Vibration, Bangkok, Thailand, 7th-11th of July.

113. Abdelatif, A.O, Owen, J.S., and **Hussein, M.F.M.**, 2013, Re-anchorage of a Ruptured Tendon in Bonded Post-Tensioned Concrete Beams: Model validation, the 10th International

Conference on Damage Assessment of Structures (DAMAS), Dublin, Ireland, 8th-10th July, Proceedings published in Key Engineering Materials, 569-570, 302-309.

114. Hamad, W.I., Owen, J.S., **Hussein, M.F.M.**, 2013, The sensitivity of vibration characteristics of reinforced concrete beams under incremental static and cyclic loading, the 10th International Conference on Damage Assessment of Structures (DAMAS), Dublin, Ireland, 8th-10th July, Proceedings published in Key Engineering Materials, 569-570, 327-334.

115. Carroll, S.P., Owen, J.S., and **Hussein, M.F.M.**, 2013, An Optically Based Assessment of Pedestrian Frontal-Plane Balance Behaviour While Walking on a Laterally Oscillating Treadmill, the 4th International Conference on Computational Methods on Structural Dynamics and Earthquake Engineering (CompDyn 2013) Kos Island, Greece, 12th-14th June.

116. Abdelatif, A.O., Owen, J.S., and **Hussein, M.F.M.**, 2012, Modeling the Re-anchoring of a Ruptured Tendon in Bonded Post-tensioned Concrete, In: BIC 2012 conference, Brescia, Italy, 17th-20th of June.

117. Hamad, W.I., Owen, J.S., **Hussein, M.F.M.**, 2011, A flexural crack model for damage detection in reinforced concrete structures, In: the 9th International Conference on Damage Assessment of Structures (DAMAS), Oxford, UK, 11th-13th of July, Proceedings published in Journal of Physics,Conference Series, 305(1), 6203-6222.

118. Yang, Yenbo., **Hussein, M.F.M.**, Cox C., and Marshall A., 2011. Physical and numerical modelling of ground-borne vibration from a surface source. In: the 8th International Conference on Structural Dynamics (EURODYN), Leuven, Belgium, 4th-6th of July.

119. Carroll, S.P., Owen, J.S., and **Hussein, M.F.M.**, 2011. Crowd-bridge interaction by combining biomechanical and discrete element models. In: the 8th International Conference on Structural Dynamics (EURODYN), Leuven, Belgium, 4th-6th of July.

120. Hamad, W.I., Owen, J.S., **Hussein, M.F.M.**, 2011, The use of fictitious crack model in modelling the vibration behaviour of cracked reinforced concrete beams, In: the 8th International Conference on Structural Dynamics (EURODYN), Leuven, Belgium, 4th-6th of July.

121. Jones, S., Kuo, K.A., **Hussein, M.F.M.**, Hunt, H.E.M., 2011. Prediction inaccuracies and uncertainties associated with common assumptions in modelling vibration from underground

railways. In: the 8th International Conference on Structural Dynamics (EURODYN), Leuven, Belgium, 4th-6th of July.

122. Kuo, K.A., **Hussein, M.F.M.**, and Hunt, H.E.M., 2010. The effects of a second tunnel on the propagation of ground-borne vibration from an underground railway. In: The 10th International Workshop on Railway Noise and Vibration, Nagahama, Japan, 18th-22nd of October, Proceedings published in Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 118:307-314.

123. **Hussein, M.F.M.,** 2010. Modelling vibration from surface and underground railways as an evolutionary random process. In: the International Conference on computing in Civil and Building Engineering, Nottingham, 30th June-2nd July.

124. Osman, A.S., **Hussein, M.F.M.**, 2010. Dynamic response of a laterally-loaded infinite rigid cylinder embedded in a saturated poroelastic medium. In: the International Conference on computing in Civil and Building Engineering, Nottingham, 30th June-2nd July.

125. Hamad, W.I., Owen, J.S., **Hussein, M.F.M.**, 2010. Modelling the nonlinear behaviour of a cracked reinforced concrete beam. In: the International Conference on computing in Civil and Building Engineering, Nottingham, 30th June-2nd July.

126. Carroll, S.P., Owen, J.S., and **Hussein, M.F.M.**, 2010. Modelling crowd-bridge interaction with a discretely defined crowd. In: SECED Young Engineers Conference, London, UK, 4th of November.

127. Coulier, P., Beckers, M., Kuo, K.A., **Hussein, M.F.M.**, Hunt, H.E.M., Degrande, G. 2010. Vibrational discomfort in buildings. Transport Research Arena Conference. Brussels, Belgium, 7-11 June.

128. Hunt, H.E.M., **Hussein, M.F.M.**, Jones, S., Kuo, K.A., 2010. Ground-borne vibration from underground railways: some commonly-made modelling assumptions and their associated inaccuracies and uncertainties. In: Noise in the Built Environment, Ghent, 29th-30th April.

129. **Hussein, M.F.M.**, Hunt, H.E.M., 2009, A computationally efficient software application for calculating vibration from underground railways. The 7th International Conference On Modern Practice in Stress and Vibration Analysis, Cambridge, UK, 8–10 September, Proceedings published in Journal of Physics, Conference series, 181(1), 012057.

130. **Hussein, M.F.M.**, 2009. A comparison between the performance of floating-slab track with continuous and discontinuous slabs in reducing vibration from underground railway tunnels. In: the 16th International Congress on Sound and Vibration, Krakow, Poland, 5th-9th of July.

131. **Hussein, M.F.M.**, 2009. A numerical model of a moving wheel-set on a floating-slab track with discontinuous slab in an underground railway tunnel. In: NOVEM2009: Noise and Vibration: Emerging Methods, Oxford, UK, 5th-8th of April.

132. **Hussein, M.F.M.** and Hunt, H.E.M., 2009. A software application for calculating vibration due to moving trains in underground railway tunnels. In: NOVEM2009: Noise and Vibration: Emerging Methods, Oxford, UK, 5th-8th of April.

133. Kuo, K.A., Jones, S., Hunt, H.E.M. and **Hussein, M.F.M.**, 2008. Applications of PiP: Vibration of embedded foundations near a railway tunnel. In: the 7th European Conference on Structural Dynamics (EURODYN), Southampton, UK, 7th-9th of July.

134. **Hussein, M.F.M.**, Hunt, H.E.M., Rikse, L., Gupta, S., Degrande, G., Talbot, J.P., Francois, S. and Schevenels, M., 2007. Using the PiP model for fast calculation of vibration from a railway tunnel in a multi-layered half-space. In: The 9th International Workshop on Railway Noise and Vibration, München, Germany, 4th-8th of September, Proceeding published in Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 99/2008, 136-142.

135. Hunt, H.E.M. and **Hussein, M.F.M.**, 2007. Accuracy, and the prediction of ground vibration from underground railways. In: the 5th Australasian Congress on Applied Mechanics, Brisbane, Australia, 10th-12th of December.

136. Hunt, H.E.M. and **Hussein, M.F.M.**, 2007. Vibration from railways: can we achieve better than +/-10dB prediction accuracy?. In: the 14th International Congress on Sound and Vibration, Cairns, Australia, 9th-12th of July.

137. **Hussein, M.F.M.** and Hunt, H.E.M., 2007. Modelling of floating-slab tracks with discontinuous slabs in underground railway tunnels. In: the 14th International Congress on Sound and Vibration, Cairns, Australia, 9th-12th of July.

138. **Hussein, M.F.M.** and Hunt, H.E.M., 2007. The PiP model, a software for calculating vibration from underground railways. In: the 14th International Congress on Sound and Vibration, Cairns, Australia, 9th-12th of July.

139. Rikse, L., Hunt, H.E.M., **Hussein, M.F.M.**, Degrande, G. and Gupta, S., 2007. A model for calculating vibration from a railway tunnel buried in a full-space including rigid bedrock. In: the 14th International Congress on Sound and Vibration, Cairns, Australia, 9th-12th of July.

140. Gupta, S., Degrande, G., Chebli, H., Clouteau, D., **Hussein, M.F.M.** and Hunt, H.E.M., 2006. A numerical model for prediction of vibration from underground railways. In: the 7th World Congress on Computational Mechanics (WCCM), Los Angeles, USA, 16th-22nd of July.

141. Gupta, S., Degrande, G., Othman, R., Clouteau, D., **Hussein, M.F.M.** and Hunt, H.E.M., 2006. A coupled periodic FE-BE model for ground-borne vibrations from underground railways. In: the 3rd European Conference on Computational Mechanics, Lisbon, Portugal, 5th-9th of June.

142. Gupta, S., Degrande, G., Clouteau, D., **Hussein, M.F.M.** and Hunt, H.E.M., 2006. A numerical model for prediction of vibration from underground railways. In: Euromech Colloquium 484, Delft, the Netherlands, 19th-22nd of September.

143. Gupta, S., Fiala, P., **Hussein, M.F.M.**, Chebli, H., Degrande, G., Auguszinovicz, F., Hunt H.E.M. and Clouteau, D., 2006. A numerical model for ground-borne vibrations and reradiated noise in buildings from underground railways. In: ISMA International Conference on Noise and Vibration Engineering, Leuven, Belgium, 18th-20th of September.

144. **Hussein, M.F.M.**, Gupta, S., Hunt, H.E.M., Degrande, G. and Talbot, J.P., 2006. An efficient model for calculating vibration from a railway tunnel buried in a half-space. In: the 13th International Congress on Sound and Vibration, Vienna, Austria, 2nd-6th of July.

145. Gupta, S., **Hussein, M.F.M.**, KLEIN, R., Degrande, G. and Hunt, H.E.M., 2005. A comparison of prediction models for vibrations from underground railway traffic. In: the 12th international congress on Sound and Vibration, Lisbon, Portugal, 11th-14th of July.

146. **Hussein, M.F.M.** and Hunt, H.E.M., 2004. A power flow method for evaluating vibration from underground railways. In: the 8th International Workshop on railway noise, Buxton, Derbyshire, UK, 8th-11th of September.

147. Talbot, J.P., Hunt, H.E.M. and **Hussein, M.F.M.**, 2004. A prediction tool for the optimisation of maintenance activity to reduce disturbance due to ground-borne vibration from underground railways. In: the 8th International Workshop on railway noise, Buxton, Derbyshire, UK, 8th-11th of September.

148. **Hussein, M.F.M.** and Hunt, H.E.M., 2004. Dynamic effect of slab discontinuity on underground moving trains. In: the 11th international congress on Sound and Vibration, St.Petersburg, Russia, 5th-8th of July.

149. Hunt, H.E.M., **Hussein, M.F.M.** and Talbot, J.P., 2003. Insertion Loss Models for evaluating the performance of vibration counter-measures for underground railways. In: the tenth international congress on Sound and Vibration, Stockholm, Sweden, 7th-10th of July.

150. **Hussein, M.F.M.** and Hunt, H.E.M., 2003. An Insertion Loss Model for evaluating the performance of floating-slab track for underground railway tunnels. In: the 10th international congress on Sound and Vibration, Stockholm, Sweden, 7th-10th of July.

Conference publications related to Higher Education

151. **Hussein, M.F.M.**, The use of flipped-class rooms for university engineering students, abstract and presentation, February 2021, Education, Engineering Education and Instruction Technology Conference (EEEITC 21), Doha, Qatar.

152. **Hussein, M.F.M.**, Improving the student learning experience by using mobile and computer technology in delivering multiple choice questions, April 2017, Proceedings of the joint 8th IFEE2017 and 3rd TSDIC2017, Sharjah, United Arab Emirates.

153. **Hussein, M.F.M.**, Impact of entry qualifications on university performance of Civil Engineering students, abstract and presentation, Feb 2012, The 19th Learning & Teaching Conference, University of Nottingham.

154. **Hussein, M.F.M.**, Munro, R., Wanatowski, D., Developing and assessing methods to engage students in WebCT, abstract and presentation, Sep 2008, The 13th Learning & Teaching Conference, University of Nottingham.