

Dr Mujib RAHMAN CEng, FICE, FCIHT, MIAT, FHEA

Position Director of Teaching and Learning
Senior Lecturer in Civil Engineering, Department of Civil and Environmental Engineering

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Career Summary Mujib is a Chartered Engineer, a Senior Lecturer in Civil Engineering and Director of Teaching and Learning at the Department of Civil and Environmental Engineering at Brunel University London. Prior to his present employment, he was a senior lecturer, and postgraduate programme leader at the Nottingham Trent University and was responsible to lead research in construction engineering and infrastructures.

Mujib's research career began in early 1999, as a research assistant in the construction robotics centre at the City University London, working on a multi-disciplinary project funded by the EC 4th Framework programme that focused on hydro-erosion for repair of in-situ concrete (HEROIC). From September 2000 to August 2003, he worked in the Nottingham Transportation Engineering Centre (NTEC) at the University of Nottingham, initially as a research assistant, then being promoted to research associate, where he also completed his doctoral research on the fundamental characterisation of dry process modified asphalt mixtures in 2003 (awarded in 2004).

Following the completion of his doctoral research, Mujib spent five years in the industry. During the first three years (2003-2006), he worked as a senior pavement and material engineer at Jacobs UK Ltd served as a project manager and lead engineer, and co-ordinated a pavement design team for several high-profile design and rehabilitation projects for national and international clients. In 2005, Mujib completed his professional review and become a Chartered Engineer. In 2006, Mujib joined TRL Limited as a senior researcher and engineer. Here he was responsible for various consultancy and R&D projects, notably for the Highways Agency and Department for Transport.

Mujib has gained extensive research experience on the fundamental characterisation of asphalt and concrete materials, non-destructive based evaluation of civil engineering infrastructures, protection of porous construction materials and condition data analysis. Mujib is presently serving as a chairman of Editorial board for ICE transport Journal, an associate editor for Advances in Materials Science and Engineering, and Editorial member of International Journal of Pavement and Journal of Advances in Civil and Environmental Engineering and also member of several national and international technical committees. He is also serving as an external examiner for Architectural Technology Programme at Ulster University and advisor for North South University Bangladesh. Several of his former students are currently faculty members at universities in the UK and around the world.

He is author/co-author of over 90 highly regarded international journals and conference articles and has also written over 100 design and consultancy reports for government departments and private organisations. His research is sponsored by EPSRC, EC, DfT, Highways England, Institution of Civil Engineers and private organisations.

Education **Postgraduate Certificate in Higher Education (PGCHE)**, Nottingham Trent University, 2010

PhD in Civil Engineering, University of Nottingham, Nottingham, 2004
Thesis: Fundamental characterisation of dry process crumb rubber modified asphalt mixtures, Supervisors: Professor Gordon D Airey and Professor Andrew C Collop

MSc in Civil Engineering Structures (with Distinction), City University, London, 1998
Dissertation: Finite element modelling of Impact Echo method for concrete defect detection, Supervisor: Professor Denis A Chamberlain

BSc in Civil Engineering (1st class), Bangladesh University of Engineering and Technology,

Curriculum Vitae

	Dhaka, Bangladesh, 1995 (Equivalent to MEng in UK) Final year dissertation: An automatic scheduling of items and analysis of rates for building construction, Supervisor: Professor Abdul Rouf.
Professional qualification	2005 - Chartered Engineer 2009 - Member of Institution of Civil Engineers (ICE) 2010 - Fellow of Higher Education Academy (HEA) 2016 - Fellow of Chartered Institution of Highways and Transportation (CIHT) 2018 - Fellow of Institution of Civil Engineers (ICE) 2018- Member of Institute of Asphalt Technology (IAT)
Professional experience 08/13 – to date	Senior Lecturer in Civil Engineering Admissions Tutor, Civil Engineering, Brunel University, 2013-2018 Undergraduate Program Leader-Civil Engineering, 2014-2018 Divisional Director of Education, 2014-2015 Departmental Director of Teaching and Learning, 2018- Department of Civil and Environmental Engineering, Brunel University London, UB8 3PH Director of Teaching and Learning and Deputy Head of Civil and Environmental Engineering, responsible to lead academic provisions, annual monitoring, Improving and modifying the L&D programmes, taking strategic inputs from senior management, Developing and implementing departmental strategy, programme design and delivery that delivers a great outcome for individuals academic and the department. Chair of Board studies, and member of college education panel. Senior Lecturer in Civil Engineering responsible to lead four modules and teach subjects related to highways engineering, sustainability and construction, Sustainable infrastructure development, infrastructure and asset management. Researcher to lead research in smart highways and asset management, focusing on inspection, investigation, maintenance and rehabilitation. Presently supervising four PhD students, one H2020 project and two industry sponsored projects. Coordinator of Pavement and Ground Engineering (PAGE) research group and Member of Institute of Energy Future.
08/08 – 07/2013	Senior Lecturer, School of Architecture, Design and the Built Environment Nottingham Trent University, Burton Street, Nottingham, NG1 4BU Responsibilities included teaching various subjects related to structure and highway engineering at undergraduate and postgraduate levels, supervising post graduate research students and programme leadership to MSc structural engineering courses and director of construction engineering and infrastructures research group.
08/06 - 07/08	Senior Highway Engineer and Project Manager, TRL Limited. Pavement Engineering supports for Area 8 Responsible to provide consultancy services for various pavement rehabilitation projects. The projects required strong commercial focus to meet strict deadlines and to ensure good profitability. Management role included pricing for new schemes, budget control, resource allocation, organise, lead site works and liaison with customer on various technical issues. Leadership role involved making decision to resolve technical problems, and making maintenance decisions for short-term (three to five years) and longer-term (five to fifteen years) pavement rehabilitations. Mentoring supports to graduate engineers.

Curriculum Vitae

- 10/03-07/06 **Senior Pavement Engineer**, Jacobs UK Ltd.
(*A brief overview on selected projects*)
Responsibilities included leading a team of design engineers and technicians, providing advice on various pavement construction issues, co-ordination among other highway design and construction teams as well as liaising with employer's representatives.
- 0/00- 09/03 **Research Associate**
Nottingham Centre for Pavement Engineering, School of Civil Engineering, Nottingham University.
(awarded PhD after successful completion of the project)
Characterisation of Dry Process Crumb Rubber Modified Asphalt Mixtures
(Project Value: £351k, Sponsors: EPSRC, Shell Bitumen, SWP, Foster Yeomen, Highways Agency)
A combination of theoretical and laboratory investigations with the aim of understanding the fundamental influence of different commercial binders on the interaction process in the dry process crumb rubber modified asphalt mixtures. The research required extensive laboratory experimentations on the range of rubber modified mixtures to characterise mechanical properties and long-term performance.
- 1/99- 09/00 **Research Assistant**, Construction Robotics Unit, City University, London.
Hydro-Erosion for repair of Insitu-Concrete (HEROIC)
(Project value: £150,000 (HEROIC Project, EU funded Brite/Euram-4th Framework).
Responsibility was concerned with the Hydro Erosion for Repair of In-situ Concrete (HEROIC), a funded by a European Union under Brite / Euram 4th Framework project, where number of European universities and private industries were project partners.
- 09/98 - 03/99 **Research Assistant**, School of Civil Engineering, Nottingham University.
Worked in the EPSRC supported LINK project on the Mechanical Performance of Road Iron work/ Pavement Systems. The work involved fundamental material testing and 2D finite element modelling of the ironwork/pavement system to understand response of the ironwork structure in different loading conditions.
- 02/98-08/98 **Teaching Assistant**, Department of Civil Engineering, The City University, London
Responsible to teach number of undergraduate and MSc courses that include civil engineering laboratory sessions, lectures and assessment of course works.
- 09/96 – 02/98 **MSc in Civil Engineering Structures**, Department of Civil Engineering, The City University, London.
- 05/95-08/96 **Assistant Engineer**, Bangladesh Local Government and Engineering Department, Dhaka, Bangladesh.
Member of a feasibility study group, responsible to assess structural condition of the cyclone shelters around the coastal belt of Bangladesh. The project required significant amount of field works covering over 100 cyclone shelters, and on-site structural condition monitoring using cover meter, Schmidt hammer and assessing the extent of salt attack on the concrete column.

External academic and professional activity

- Chairman of Editorial board, ICE Transport, 2017-
- Editorial Board Member, ICE Transport, 2015-
- Associate Editor, Advances in Materials Science and Engineering, 2017-
- Editorial Board Member, International Journal of Pavement- 2016-
- Editorial Board member- Journal of Advances in Civil and Environmental Engineering, 2015-
- Member of RILEM Cold mix asphalt committee
- Committee Member - Pavement Monitoring and Evaluation, AFD20, Transportation Research Board, USA, 2013-
- Member of Advisory Council, Department of Civil Engineering, North South University, Bangladesh, 2013-
- Committee Member, CIHT South Each Branch, 2015-
- Invited peer reviewer for more than 20 international journals., 2009-
- Member of scientific committee, and session chairs in several international conferences
- External PhD Examiner, Department of Civil Engineering, The University of Nottingham, ,2014,2015, 2016,2017,2018

Curriculum Vitae

- External PhD Examiner, Department of Civil Engineering, Curtin University, Australia, 2017
- External PhD Examiner, Department of Civil Engineering, Liverpool University, 2017
- External PhD advisor, Università degli Studi di Palermo, Italy, 2016-
- External PhD supervisor, University of Free State, South Africa, 2016-
- Honorary Secretary, Midland Branch, CIHT, 2010-2013

Reviewer

- Journal of Construction and Building Materials, 2010-, Journal of Structural Survey, 2011-, Transportation Research Record, 2010-, ICE Transport, 2010-, ASCE Journal of Material in Civil Engineering, 2010-, ASCE Journal of Computing in Civil Engineering, 2011-, Journal of Road Material and Pavement Design, 2012-, Journal of International Journal of Pavement Research and Technology, 2012, Journal of Civil Engineering and Architecture, 2011-, International Journal of Pavement Engineering 2005-, Journal of Construction Robotics, 2012-Iranian Journal of Science and Technology, 2010-

Teaching Experience

Module Leader: (2014)- CE5605- Case Studies and Sustainable Structural Design, (2013-): CE5519 Infrastructure Management, (2013-): CE3606: Sustainable Infrastructure Development, (2013-) CE1003: Construction and Sustainability, (2010-) DESN40120: Analysis and Design of Surface Structure Systems, (2010-) DESN 40112: Health Monitoring and Rehabilitation Design of Surface, (2009-2013)): DESN22055: Structural Analysis and Design, (2009-2013): DESN22059: Structural Engineering, (2009-2013): DESN30141: Design and Construction Project (2009-2013): DESN 30139: Further Structural Engineering

Module Tutor: CE3604 Advance Construction Materials, (2013- 2016)

Award

- Highly Commended Award 2018, Remediation and protection of masonry structures with crystallising moisture blocking treatment, International Journal of Building Pathology and Adaptation, Emerald
- Best Paper, 'Thermal Segregation of Asphalt Material in Road Repair'. 8th International Conference on Maintenance and Rehabilitation of Pavements (MAIREPAV8), Singapore, 27 -29 July 2016.
- Performance of asphalt patch repair, ICE East-midland merit award on research and innovation, 2012
- Conference "Paper of Excellence" "The Influence of Crude Source and Penetration Grade on the Interaction of Crumb Rubber and Bitumen", Asphalt Rubber 2003 Conference, Brasilia, Brazil 2003.
- MSc scholarship, City University, London, 1998
- Bangladesh University of Engineering and Technology Merit Scholarship, Dhaka, 1989-1994
- Bangladesh Chemical Industries Corporation (BCIC) Merit Gold Medal, 1986 & 1988
- Primary and Junior Level Merit Scholarship, Bangladesh, 1981 & 1984

Invited Presentation (2015-)

- Smart highway and asset management- the role of investigation, maintenance and rehabilitation, De La Salle University, Manila, January 2019
- Enhancing road repair, National Asphalt Research Consortium, Nottingham University, February 2019
- Pothole formation: tyre-water- pavement interaction, Pothole: Bridging Science and Engineering, 26th September, Brunel University London, 2018
- The Influence of Near Surface Moisture and Specimen Thickness on Concrete Protection Treatment', 98th TRB annual meeting, Washington D.C, January 2018
- Resilient Infrastructure, MASDAR Institute, Abu Dhabi, April 2017
- Moisture blocking in masonry arch structures, 96th TRB annual meeting, Washington D.C, January 2016
- The role of maintenance and rehabilitation in resilience in infrastructure, Researcher link programme, British Council, Nazarbayev University, Kazakhstan, March 2016
- Thermal segregation in hot mix asphalt patch repair" and " 'Distress Based Pavement Performance Prediction Models', 8th International Conference on Maintenance and Rehabilitation of Pavements (MAIREPAV8), Singapore, 27 to 29 July 2016
- Resilient Infrastructures-the role of protection, maintenance and rehabilitation "- 1st International Workshop on Seismic Risk Assessment and Mitigation Strategies for Existing Buildings and Structures-17-21 October 2016, Morelia, Michoacán, Mexico.
- Concrete Protection by Dual Crystalline Technology, Industry Research Seminar, International Chemcrete and Logan construction, Iowa, USA, October 2015
- Moisture blocking in masonry arch structures, 95th TRB Annual meeting, January 2015
- Technology based pavement distress measurement, The first Brunel symposium in highway maintenance, March 2015

Curriculum Vitae

- Invited presentation at 6th International Conference 'Bituminous Mixtures & Pavements', Thessaloniki, Greece, 10-12 June 2015
- Seminar presentation on Research into Pavement investigation and maintenance, Institute of Energy future, Brunel University London
- Pavement Evaluation and Maintenance at Tongi University, July 15-19, 2015
- The new approach to managing potholes & vital new research, The 15th Annual surveyor Highway Maintenance Conference and Exhibition, 2013
- New approach to managing potholes, Institute of Highway Engineers, 2013
- How many men does it take to fill a hole? An academic study of potholes, APSE, 2013
- The Influence of Thermal Segregation on Asphalt Pavement Compaction, Nottingham Asphalt Research Consortium, 2012
- Application of Texture Analysis and the Kohonen Map on pavement images for Region Segmentation in Crack Detection, 91st Annual Meeting, Transportation Research Board, Washington DC, 2012
- Energy efficient Highway Junction design, The seventh international conference on road and airfield pavement technology, Bangkok, 2011
- Structural assessment of in-service doweled concrete pavement joints, 5th international conference bituminous mixtures and pavements, Thessaloniki, Greece, 2011
- Self-organising map (SOM) based concrete pavement joint evaluation, Data Analysis Working Group (DAWG), 90th Transportation Research Board Meeting, Washington DC, 2011
- EC3 for dummies, The Institution of Structural Engineers, 2010
- 11th International Conference on Asphalt Pavement, Nagoya, Japan, 2010
- Redefining research, The Nottingham Trent University, 2010
- 89th Annual Meeting, Transportation Research Board, Washington DC, 2010
- The sixth International Conference on Maintenance and Rehabilitation of Pavements and Technological Control, Turin, Italy, 2009
- Highway Engineering Workshop, Nottingham Trent University, 2005
- International Conference on Sustainable Waste Management, Kingston University, 2004
- Seminar presentations on various pavement related topic, at Nottingham Centre for Pavement Engineering, 2000 to 2003
- WMR3 Seminar, London, 2001

Media coverage of research

- Pothole, the road to the future, Radio 4, documentary, Broadcasted January 10th, 2019
- Potholes: how engineers are working to fill in the gaps, the conversation, 19th September 2018, <https://theconversation.com/potholes-how-engineers-are-working-to-fill-in-the-gaps-102055>
- Novel approach to concrete protection slows deterioration in harsh conditions, Canadian consulting engineer, December 2017, <https://www.canadianconsultingengineer.com/buildings/concrete-surface-treatment-slows-deterioration-harsh-conditions/1003406535/>
- Novel approach to concrete protection slows deterioration in harsh conditions, phys.org, December 2017, <https://phys.org/news/2017-12-approach-concrete-deterioration-harsh-conditions.html>
- Infrared puts the heat on potholes, The Engineers, 24th January 2017, <https://www.theengineer.co.uk/infrared-heat-could-improve-pothole-repair/>
- Road scanners to find future potholes developed by UK researchers, FT, 2015, <http://www.ft.com/cms/s/0/426e4ace-a569-11e4-bf11-00144feab7de.html#axzz3dJpcJ5fY>
- Potential potholes detected by smart scanner, BBC, 2015, <http://www.bbc.co.uk/news/technology-31001119>
- Pothole update, Radio Ireland, 2015
- 3D imaging estimates pothole volume, Vision system design, <http://www.vision-systems.com/articles/print/volume-19/issue-4/departments/technology-trends/3d-imaging-3d-imaging-estimates-pothole-volume.html>, 2014
- Pothole severity in London, LBC radio London, February 2014
- Pothole problems in UK, Sky news live, March 14, 2012
- Pothole research, BBC East-midland news, 15th December, 2011
- BBC radio Nottingham Drive time live programme, 14th December 2011, interview on pothole repair performance.
- Nottingham Post, 13th December 2011, Researchers look at road potholes
- Fleet news, 13th December 2011, University researchers awarded funding for potholes
BBC, 12th December 2011, <http://www.bbc.co.uk/news/uk-england-nottinghamshire-16144626>, report on pothole research

Curriculum Vitae

- New civil engineer, December 2011, <http://www.nce.co.uk/news/transport/university-researchers-to-investigate-performance-of-pothole-repairs/8623774.article> , report on pothole research.
- Nottingham Trent University E-news, 14th December 2011, pothole research, http://www.ntu.ac.uk/apps/News/116226-15/University_experts_awarded_funding_for_pothole_research.aspx
- Magazine of Institution of structural engineers, September 2011, NDT based evaluation of CFRP retrofitting in concrete structures
- Highways, 16th December, <http://www.highwaysmagazine.co.uk/?p=1413>, Pothole repair study launched.
- Construction managers, How many holes it takes to fill the albert hall?, January 2012, <http://construction-manager.co.uk/features/have-you-thought-jan-12/>
- BBC Breakfast, UK pothole problems, 9th February 2013
- BBC Radio Nottingham, 12th December 2011 and 8th February 2013
- BBC East-midland, Field trials of pothole repair, May 2012
- Sky news live, Pothole problems in UK, March 14, 2012
- BBC East-midland news, 15th December 2011, Pothole research,
- BBC radio Nottingham Drive time live programme, 14th December 2011, interview on pothole repair performance
- New civil engineer, December 2011, report on pothole research.

Research

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Completed PhD (1st Supervisor)

1. 2015-2018, Juliana Byzyka, Development of controlled patch repair system for asphalt pavement, presently employed: Lecturer, Salford University, UK.
2. 2014-2018, Fauzia Saeed, Tyre pavement interaction on pavement surface damage, Employer: Assistant Professor, Omar Al-Mukhtar University, Libya.
3. 2012-2017, Balakrishna Swami, Fundamental characterisation of impregnation concrete structures, submitted (student at NTU, stayed in NTU when I moved Brunel in 2013), Current position: Senior Structural Engineer.
4. 2012-2015, Maher Mahmood, Network level maintenance Decisions for flexible pavement using soft computing-based technique, (student at NTU, stayed in NTU when I moved Brunel in 2013), Present employer: Associate professor, University of Anbar, Anbar, Iraq
5. 2009-2012, Ali al Ghalib, Dynamic-signature as a non-destructive concrete testing evaluation technique, presently employed: Associate Professor, Al-Mustansiriya University, Baghdad, Iraq

Present PhD Supervision

1st Supervisor

2016-2019, Mazen Al-Kheetan, Performance of Hydrophobic Concrete in Adverse condition (submitted)

2019-2021, Zeina Naif Abd Al-Aizziz, Finite Element Simulation of heat-transfer in road repair (1st yr)

2018-2023 Haroon Yousuf, Moisture Blocking for masonry arch structures (1st yr)

2018-2023 Hayden Davies, Hayden Albert Thomas Davie, Fundamental characterisation of cold mix asphalt material. (1st yr)

2019

2nd Supervisor

2015-2018, Saud Ayid R Alshammari, Delay Analysis Technique for Construction Projects

External Supervisor

2016-2019, Samuel Benks, Stress Intensity Failure Rate Propagators of Flexible Pavement, University of Free State, South Africa (writing up)

Research Project and Funding

- PI: H2020 Education4 all, 2017-2020, €187k (Brunel share €45k)
- PI: Performance of asphalt patch repair, 2013-2021, Epicuro Ltd £250k
- PI: Development of hydrophobic concrete, 2015-2018, International Chemcrete, Richmond USA, £12k
- PI: Thermal modelling of asphalt patch repair, 2017-2018, EPSRC DTP funding, £5k
- PI: Modified Hamburg wheel tracking machine, 2017-2022, Cooper Technology, Derby, UK, £55k
- PI: Wheel tracking Machine, Bending Beam Rheometer and Nottingham Asphalt Tester, 2016, Cooper Technology, Derby, £100k

Curriculum Vitae

- PI: Fundamental Characterisation of Crystalline Hydrophobic Treatment for Concrete Protection, Ministry of Education, Jordan, PhD studentship, 2016-2019, £55k
- PI: Influence of Tyre Characteristics and Surface Water on Road Surface Damage, Ministry of Education, Libya, PhD studentship, 2015-2019, £50k
- PI: Performance of 3D Road Marking, 2018-19, £15k (£5k Innovation Voucher, £10k from Preformed Marking Ltd).
- PI: Characterisation of Gully Waste, 2019-20, £8k (£5k Innovation voucher with Southwest College Ireland, and £3k Recon Waste Management, Ireland)

Design and Consultancy Experience (selected projects)

- Lead Engineer and Project Manager, TRL limited, Pavement Engineering supports for Highway Agency (Highways England) Area 8, Client: Carillion-URS and Highways England, Project Value: £200k/year
- Lead Pavement Engineer and Pavement Design Team Coordinator, Jacobs UK Ltd, A2/A282 Dartford Improvement, Principal Contractor: COSTAIN, Principal designer: Jacobs UK Ltd, Client: Highways England, Early Contractor Involvement (ECI) Scheme. Project Value: £125m
- Lead Pavement Engineer and Pavement Design Team Coordinator, Jacobs UK Ltd, M25 Junction1b-3 Widening Scheme, Principal Contractor: COSTAIN, Principal designer: Jacobs UK Ltd, Client: Highways Agency, Early Contractor Involvement (ECI) Scheme. Project Value: £63m
- Lead Pavement Engineer, M4 Jct 29 to Jct 32 Widening, Principal contractor: Carillion, Principal designer: Jacobs UK Ltd, Client: Welsh Assembly, ECI contract, Project Value: £60m
- Project Engineer, Dublin Port Pavement Maintenance Guidelines, (Client: Dublin Port Authority)
- Lead Pavement Engineer, BEAR Scotland: Pavement Investigation Reports, Client: Scottish Executive, Project value: approximately £120k/year)
- Project Manager and Lead Engineer, Edge Lane Drive Pavement Investigation, Client: Liverpool City Council, Project value: £25,000
- Project Manager and Lead Engineer, Paradise Street Pavement Evaluation and Design, Client: Enterprise Liverpool, project value: £25,000
- Project Engineer, Ground floor failure investigations- Disney world distribution centre, Magna Park – Lutterworth, Leicester, Client: Walt Disney, £15,000

Publications

Journal Paper

1. Byzyka, J., Rahman, M., & Chamberlain, D. (2019), Performance enhancement of asphalt patch repair with innovative heating strategy, *ICE transport Journal*.
2. Al-Kheetan, M., Rahman, M., & Chamberlain, D. (2019). Moisture Evaluation of Concrete Pavement Treated with Hydrophobic Surface Impregnates. *International Journal of Pavement Engineering*.
Doi:[10.1080/10298436.2019.1567917](https://doi.org/10.1080/10298436.2019.1567917)
3. Al-Kheetan, M., Rahman, M., & Chamberlain, D. (2019). Performance Enhancement of Self-Compacting Concrete in Saline Environment by Hydrophobic Surface Protection. *Canadian Journal of Civil Engineering*.
4. Al-Kheetan, M., & Rahman, M. (2019). Optimum Mix Design for Internally Integrated Concrete with Crystallising Protective Material. *ASCE Journal of Materials in Civil Engineering*.
5. Byzyka, J., Rahman, M., & Chamberlain, D. (2018). An improved interface temperature distribution in shallow hot mix asphalt patch repair using dynamic heating. *International Journal of Pavement Engineering*.
Doi:[10.1080/10298436.2018.1559315](https://doi.org/10.1080/10298436.2018.1559315)
6. Fauzia, S., Rahman, M., Denis, C., & Phil, C. (2018). Asphalt surface damage due to combined action of water and dynamic loading. *Construction and Building Materials, Volume 196*, 530-538.
Doi:[10.1016/j.conbuildmat.2018.10.225](https://doi.org/10.1016/j.conbuildmat.2018.10.225)
7. Juliana, B., Rahman, M., & Chamberlain, D. (2018). An innovative asphalt patch repair pre-heating method using dynamic heating. *Construction and Building Materials*, 188, 178-197. Doi:[10.1016/j.conbuildmat.2018.08.086](https://doi.org/10.1016/j.conbuildmat.2018.08.086)
8. Balakrishna, M. N., Mohammad, F., Robert, E., & Rahman, M. (2018). Evaluation of chloride absorption in preconditioned concrete cubes. *Malaysian Journal of Civil Engineering, VOL. 4*, 146-157.

Curriculum Vitae

9. Mahmood, M., Mathavan, M., & Rahman, M. (2018). A parameter-free discrete particle swarm algorithm and its application to multi-objective pavement maintenance schemes. *Swarm and Evolutionary Computation*. Doi:[10.1016/j.swevo.2018.03.013](https://doi.org/10.1016/j.swevo.2018.03.013)
10. Rahman, M., Al-kheetan, M., & Chamberlain, D. (2018). Development of Hydrophobic Concrete by Adding Dual-Crystalline Admixture at Mixing Stage. *Structural Concrete*.
11. Saeed, F., Rahman, M., & Chamberlain, D. (2018). Impact of tire and traffic parameters on water pressure in pavement. *Journal of Transportation Engineering, Part B: Pavements (ASCE)*, 144(4). Doi:[10.1061/JPEODX.0000065](https://doi.org/10.1061/JPEODX.0000065)
12. Al-Kheetan, M. J., Rahman, M., & Chamberlain, D. (2017). A Novel Approach of Introducing Crystalline Protection Material and Curing Agent in Fresh Concrete for Enhancing Hydrophobicity. *Construction and Building Materials, Volume 160*, 644-652. Doi:[10.1016/j.conbuildmat.2017.11.108](https://doi.org/10.1016/j.conbuildmat.2017.11.108)
13. Mahmood, M., Rahman, M., & Mathavan, S. (2017). Network Level Multi-Input Deterioration Prediction Model. *Proceedings of the ICE – Transport*. Doi:[10.1680/jtran.16.00170](https://doi.org/10.1680/jtran.16.00170)
14. Byzyka, J., Chamberlain, D., & Rahman, M. (2017). Development of advanced temperature distribution model in hot mix asphalt patch repair. *Proceedings of the ICE – Transport*. Doi:[10.1680/jtran.17.00022](https://doi.org/10.1680/jtran.17.00022)
15. Mathavan, S., Vaheesan, K., Kumar, A., Chandrakumar, C., Kamal, K., Rahman, M., & Stonecliffe-Jones, M. (2017). Detection of Pavement Cracks Using Tiled Fuzzy Hough Transform. *Journal of Electronic Imaging*, 26(5). Doi:[10.1117/1.JEI.26.5.053008](https://doi.org/10.1117/1.JEI.26.5.053008)
16. Al-Kheetan, M., Rahman, M., & Chamberlain, D. (2018). Remediation and Protection of Masonry Structures with Crystallising Moisture Blocking Treatment. *International Journal of Building Pathology and Adaptation*. Doi:[10.1108/IJBPA-02-2017-0011](https://doi.org/10.1108/IJBPA-02-2017-0011)
17. Rahman, M. (2017). Themed issue on transport emissions, climate change and air quality. *Proceedings of the Institution of Civil Engineers – Transport*, 170(2), 63-64. Doi:[10.1680/jtran.2017.170.2.63](https://doi.org/10.1680/jtran.2017.170.2.63)
18. Al-Kheetan, M., Rahman, M., & Chamberlain, D. (2017). Early life performance of a dual crystalline and a polymeric cementitious coating in concrete protection. *Construction & Building Materials*, 141, 64-71.
19. Mathavan, S., Kumar, A., Kamal, K., Nieminen, M., Shah, H., & Rahman, M. (2016). Fast Segmentation of Industrial Quality Pavement Images using Laws Texture Energy Measures and k-Means Clustering. *Journal of Electronic Imaging, Vol 25*(5). Doi:[10.1117/1.JEI.25.5.053010](https://doi.org/10.1117/1.JEI.25.5.053010)
20. Byzyka, J., Rahman, M., & Chamberlain, D. (2017). THERMAL SEGRAGATION OF ASPHALT MATERIAL IN ROAD REPAIR. *Journal of Traffic and Transportation Engineering (JTTE)*, 4(4), 360-371. Doi:[10.1016/j.jtte.2017.05.008](https://doi.org/10.1016/j.jtte.2017.05.008)
21. Rahman, M., & Chamberlain, D. (2017). The Performance of Crystalline Hydrophobic in Wet Concrete Protection. *Journal of Materials in Civil Engineering*, 29(6), 04017008. Doi:[10.1061/\(ASCE\)MT.1943-5533.0001779](https://doi.org/10.1061/(ASCE)MT.1943-5533.0001779)
22. Rahman, M. (2016). 'Editorial-Proceedings of the ICE – Transport'. *Proceedings of the ICE – Transport, Volume 169*(Issue 4), 185-186. Doi:[10.1680/jtran.2016.169.4.185](https://doi.org/10.1680/jtran.2016.169.4.185)
23. Khurram Kamal, Senthana Mathavan., Tayyab Zafar., Imran Moazzam., S. Usman Ahmad., & Rahman, M. (2016). Performance assessment of Kinect as a sensor for pothole imaging and metrology. *International Journal of Pavement Engineering*. Doi:[10.1080/10298436.2016.1187730](https://doi.org/10.1080/10298436.2016.1187730)
24. Rahman, M., & D.A Chamberlain. (2016). APPLICATION OF CRYSTALLISING HYDROPHOBIC MINERAL AND CURING AGENT TO FRESH CONCRETE. *Construction and Building Materials, Vol 127*, 945-949.
25. Rahman, M. (2015). Proceedings of the ICE – Transport. *Proceedings of the ICE – Transport, Volume 168*(Issue TR3), 189-190. Doi:[10.1680/tran.2015.168.3.189](https://doi.org/10.1680/tran.2015.168.3.189)
26. Mathavan, S. M., Rahman, M., Martyn Stone-Cliff Jones and K. Kamal. (2015). Pavement Ravelling Detection and Measurement from Synchronized Intensity and Range Images. *Transportation Research Record: Journal of the Transportation Research Board*.
27. Mathavan, S., Khurram, K., & Rahman, M. (2015). A Review of Three-Dimensional Imaging Technologies for Pavement Distress Detection and Measurements. *IEEE Transactions on Intelligent Transportation Systems*. Doi:[10.1109/TITS.2015.2428655](https://doi.org/10.1109/TITS.2015.2428655)

Curriculum Vitae

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