

## Curriculum Vitae

**John Kaiser S. Calautit, AMIMechE,  
GradIET, GradIED, S.M.ASCE, GradEI**  
Post-Doctoral Research Fellow at University of Leeds



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### Contact Address:

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### Education

- 2011 – 2013 PhD in Civil Engineering, University of Leeds, Leeds, UK  
*Dissertation Topic: The Application of Low Energy Technology Within the Built Environment*
- 2006 – 2010 BEng Hons (Class I) in Mechanical Engineering Graduate  
Heriot-Watt University, UK  
*Dissertation Topic: Numerical Investigation into the feasibility of integrating wind tower into residential buildings in the UAE*
- 2005 - 2006 Bachelor of Science in Mechanical Engineering  
Mapua Institute of Technology, Manila, Philippines

### Research/Work Experience

- 2013 – 2016 Post-Doctoral Research Fellow in Stadium Cooling: School of Civil Engineering, University of Leeds, UK (*Thermal Comfort of Spectators and Players in Qatari Stadiums, Qatar National Research Fund 6th Cycle, NPRP 6-461-2-188*)

Responsible for undertaking research under the guidance of the principal investigator and support the supervision of students who are also working on the research, producing research reports and publications, presenting at international seminars and conferences, collaborating with research colleagues and support staff, and contribute to relevant teaching activities within the department.

- 2011 – 2013 Research Associate: School of Civil Engineering, University of Leeds, UK (*Integration of Passive Ventilation and Novel Cooling Systems for Reducing Air Conditioning Loads in Buildings, Qatar National Research Fund 3rd Cycle, NPRP 09-138-2-059*)

Responsible for the development of a prototype low energy residential building cooling device for Qatari residents based on traditional wind

tower arrangements, dissemination of research findings, presenting at international seminars and conferences, collaborating with research colleagues and support staff, providing guidance and support to any students associated with the project, supporting joint research activities and undertake any other duties relevant to the programme of research.

2010 – 2011 Mechanical Design Engineer: Gietart Middle East, Dubai, U.A.E.

Responsible for the design and development of new/modified shot blasting systems requested by project teams and via customer requests, 3D modeling using Pro-E Creo Elements, preparing of detail manufacturing drawings using AutoCAD/Solidworks, the production of layouts and technical reports, organising prototype manufacture, rapid prototyping direct from CAD data, prepare outline engineering schematics, brief engineering consultants on scope of design, brief and commission site investigation, testing and problem solving.

### **Consultancy Work Experience**

- CFD modelling of energy efficient residential buildings in Dubai, U.A.E (Nakheel)
- CFD and wind tunnel testing of wind tower technologies (Midtherm Engineering)
- CFD modelling of building construction perimeters (Board UK boards)
- Dynamic thermal modelling of office spaces in University of College London using sustainable energy analysis tools (Cynergin UK)
- Dynamic thermal modelling and design of teaching spaces in the School of Civil Engineering (University of Leeds)
- CFD modelling of a hand-held device for respiratory rate measurement (Sheffield Hallam University, UK)

### **Editorial Experience**

- Member of the editorial board of international journals: American Journal of Energy Research; ISSN:2328-7330 and American Journal of Civil Engineering and Architecture; ISSN:2328-398
- Member of the program committee of international conferences: International Symposium on Tools and Methods of Competitive Engineering (TMCE 2014)
- Reviewer of international journals: Building and Environment; ISSN: 0360-1323, Energy and Buildings; ISSN: 0378-7788, and Open Journal of Energy Efficiency;2169-2637

### **Research Interest**

- Innovative and effective technology solutions
- Engineering and technology
- Green technologies
- Design optimisation methods

- Industrial and manufacturing engineering
- Material engineering
- Civil and architecture engineering
- Environmental engineering
- Computational modelling
- Wind tunnel modelling
- Dynamic thermal modelling

### **Skills and Expertise**

- Computational Fluid Dynamics (CFD) background in: building aerodynamics, natural ventilation systems, indoor air quality, airflow movement, heat transfer models, heat exchangers, HVAC, heat recovery, CHT, solar loading, sliding meshes, MRF, porous media, species transport, integrated/coupled thermal comfort model, stadiums (Gambit, Fluent and AirPak)
- 3D CAD Modeling (AutoCAD, Solid Edge, Pro/Engineer, PTC Creo, I-DEAS, Micro Station and Solid works)
- 3D rapid prototyping of scaled models
- Wind tunnel experimentation
- Dynamic thermal modelling: sustainable building design and building performance simulations (AutoCAD Ecotect Analysis, IES VE and TRNSYS)
- Finite Element Method modelling (ANSYS and Abaqus FEA)
- Application design and programming
- Engineering design and engineering manufacture

### **Selected Publications**

- J.K. Calautit, B.R. Hughes, H. Chaudhry, and S.A. Ghani, CFD Analysis of a heat transfer device integrated wind tower system for hot and dry climate, ICAC 2012 Special Issues, **Applied Energy**, 2013 (Article in press).
- J.K. Calautit, H. Chaudhry, B.R. Hughes, and S.A. Ghani, Comparison between evaporative cooling and a heat pipe assisted thermal loop for a commercial wind tower in hot and dry climatic conditions, Sustainable Development of Energy, Water and Environment Systems (SDEWES) Special Issues, **Applied Energy**, 101, 740-755, 2013.
- B.R. Hughes, H. Chaudhry, and J.K. Calautit, Passive energy recovery from natural ventilation air streams, **Applied Energy**, 113, 127-140, 2013.
- J.K. Calautit, B.R. Hughes, and S.A. Ghani, Numerical Investigation of the Integration of Heat Transfer Devices into Wind Towers, **Chemical Engineering Transactions Special Issue SDEWES 2012**, 34, 43-48, 2013.
- B.R. Hughes, J.K. Calautit, and S.A. Ghani, The Development of Commercial Wind Towers for Natural Ventilation: A Review, **Applied Energy**, 92, 606-627, 2012.

- J.K. Calautit, B.R. Hughes, and S.A. Ghani, A Numerical Investigation into the Feasibility of Integrating Green Building Technologies into Row Houses in the Middle East, **Architectural Science Review Special Issue**, 1, 1-18, 2012.
- J.K. Calautit, B.R. Hughes, and S.A. Ghani. Numerical Investigation of the Integration of Heat Transfer Devices Into Wind Tower, **The 7th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), Ohrid, Macedonia, 2012**, SDEWES12-0037.
- J.K. Calautit, B.R. Hughes, and S.A. Ghani. CFD Analysis of a Heat Transfer Device Integrated Wind Tower System for Hot and Humid Climate, Heat and Mass Transfer In Energy Applications, **The 4th International Conference on Applied Energy (ICAE), Suzhou, China, 2012**, ICAE2012-3-D1-5.

### **Professional Membership to Organization**

2013 – present	Member of the National Society of Professional Engineers (NSPE)
2013 – present	Member of the Chartered Institute of Buildings (CIOB)
2012 – present	Graduate Member (GradEI) of the Energy Institute
2012 – present	Graduate Member (GradIET) of the Institution of Engineering Technology
2011 – present	Graduate Member (GradIED) of the Institution of Engineering Designers
2011 – present	Student Member (S.M.ASCE) of the American Society of Civil Engineers
2010 – present	Member of the Engineers Without Borders UK
2007 – present	Associate Member (AMIMechE) of the Institution of Mechanical Engineers
2007 – present	Member Society of Petroleum Engineers Europe

### **Honors Received**

- Recognition and appreciation of research contributions to ICAE2012 (The 4<sup>th</sup> International Conference on Applied Energy), Suzhou, China, 2012
- Recognition and appreciation of research contributions to SDEWES (The 7th Conference on Sustainable Development of Energy, Water and Environment Systems), Ohrid, Republic of Macedonia, 2012
- BEng Mechanical Engineering Honours First Class Degree
- First Prize, Robotics Challenge Competition 2008, Most Intelligent and Most Elegant Robot, Heriot-Watt University, Dubai, U.A.E.
- Deans Lister (No. 5) Mapua Institute of Technology, Manila, Philippines 2006
- Graduated with Honors, Second Honorable Mention in Secondary School NFPS, Sharjah, U.A.E. 2005

## References

### **Dr. Ben Hughes**

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University of Leeds, UK  
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### **Dr. Lik Fang Sim**

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School of Mechanical Engineering  
Qatar University, Qatar  
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