

KUA HARN WEI (Dr)

PhD (Building Technology) MIT, MSc (Theoretical Physics) NUS, Dual Masters (Technology & Policy; Civil & Environmental Engineering) MIT, BSc (Physics, 2nd Upper Hons) NUS



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CURRICULUM VITAE

ACADEMIC QUALIFICATIONS:

- Dual Masters (Civil & Environmental Engineering, and Technology & Policy), MIT, 2002
- Master of Science (by research), Theoretical Physics, National University of Singapore, 1999
- PhD (building technology), MIT, 2006

EMPLOYMENT RECORD:

- Teaching Assistant, NUS (1999-2000)
- Senior Tutor, NUS (2000 - 2006)
- Assistant Professor, NUS (2006 - 2014)
- Associate Professor, NUS (2014 - present)

ADMINISTRATIVE LEADERSHIP:

- Assistant Dean (Academic), 2016 – present
- Deputy Head (Research), 2013 – 2016
- Residence Fellow, Raffles Hall, 2012 – present
- Leader, Smart Materials Laboratory, Department of Building, 2015 – present
- Army Office, Singapore Armed Forces, 1990 – present

PROFESSIONAL/CONSULTING ACTIVITIES:

- Treasurer, Life Cycle Sustainability Assessment Section, International Society for Industrial Ecology, 2015-present
- Co-theme leader (on sustainable buildings and cities), International Sustainable Development Research Conference, 2014 – present
- Advisor or council member of numerous governmental organizations and NGOs
- Guest editors, “Journal of Industrial Ecology” and “Sustainable Development”, 2015 - 2016
- Reviewer for several top-tiered international peer-reviewed journals (such as Energy & Building) and international research grant organizations
- Conference track chairman or Scientific Committee member for numerous international conferences

- More than 50 invited speeches locally and internationally, including at the Forum for Science, Technology and Innovation for Sustainable Development, workshop on Sustainable Consumption and Production, organized by International Council for Science (ICSU, which was headed by Nobel Laureate Prof Lee Yuan Tseh), on 11th June 2012, 4-6 pm, in Rio de Janeiro, Brazil.

UNDERGRADUATE TEACHING:

- PF2504 Materials Technology

GRADUATE TEACHING:

- ISD5104 Energy & Ecology
- BPS5228 Advanced Building Materials and Structures

RESEARCH INTERESTS:

- Life cycle sustainability assessment
- Bio-based building materials capable of direct air capture of carbon dioxide and air purification
- Policies to promote household energy conservation

SELECTED PUBLICATIONS:

- Kua, H W, "Integrated policies to promote sustainable use of steel slag for construction – a consequential life cycle embodied energy and greenhouse gas emission perspective". *Energy and Buildings*, 101 (2015): 133. [Impact factor: 2.973]
- Kua, H W and C L Wong, Analysing the life cycle greenhouse gas emission and energy consumption of a multi-storied commercial building in Singapore from an extended system boundary perspective". *Energy and Buildings*, 51 (2012): 6-14 [Impact factor: 2.973]
- Kua, H W and S Kamath, An attributional and consequential life cycle assessment of substituting concrete with bricks. *Journal of Cleaner Production*, 81 (2014): 190-200. [Impact factor: 4.959]
- Kua, H W and M A Maghimai Raj, Steel-versus-Concrete Debate Revisited – Global Warming Potential and Embodied Energy Analyses based on an Attributional and Consequential Life Cycle Perspective. *Journal of Industrial Ecology*, DOI: 10.1111/ji (2016). [Impact factor: 3.265]
- Kua*, H W and Y Lu, Environmental impacts of substituting tempered glass with polycarbonate in construction – an attributional and consequential life cycle perspective. *Journal of Cleaner Production*, 137, 910-921(2016). [Impact factor: 4.959]

AWARDS:

- A total of more than 60 local or international academic awards
- Annual Teaching Excellence Award, 2011/2012 and 2013/2014
- SDE Teaching Award, 2011/2012, 2012/2013, 2013/2014 and 2014/2015
- Bellagio Centre Academic Writing Residence fellow, Rockefeller Foundation, 2014
- Fellow, Brown International Advanced Research Institute, 2012
- Invited and funded (by Santander) to attend the Globalization TrendLab workshop (on "Sustainability: New Perspectives and Opportunities"), hosted by Lauder Institute, Wharton School, University of Pennsylvania, USA, 9-13 April 2012.
- ASEAN Environmentally Sustainable Cities Award 2008, 2011
- MIT Martin Family Society of Fellow for Sustainability (2002-2003)
- MIT Carroll L. Wilson Fellow (2001)