Timothy Charles Green

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Summary:
I am Director of the Energy Futures Lab and a Professor of Power Engineering at Imperial College London. My main role is to promote and facilitate interdisciplinary research and education across Imperial College in the field of energy systems and climate change mitigation. To do this I engage with almost every academic department. This entails looking for opportunities to start new research initiatives and engaging with corporate and public funders to support the work. My own research interests are power electronics and control for future energy networks. This includes innovation in modular multi-level converters for HVDC and control of them for enhanced grid services; use of power electronics for increasing flexibility asset use in distribution networks and the use of micro-grids for enhancing supply provision and security. I led EPSRC's Energy Network's Hub, "HubNet" which is consortium of UK universities funded at about £1M per year. I also lead a variety of collaborative projects with universities in China, Korea and India addressing smart grids and microgrids. I work with GE Grid Solutions (formerly Alstom) on converter optimisation for HVDC and UK Power Networks of use of power electronics in energy networks. My teaching covers electricity systems, electrical machines and power electronics. I was elected Fellow of the Royal Academy of Engineering in September 2018.

Publications:
92 journal papers including 59 IEEE Transactions/Proceedings papers and 14 IEE/IET Proceedings papers plus over 220 conference papers. Also 3 book chapters and 7 patents. List and repository at http://www.imperial.ac.uk/people/t.green/publications.html

Google scholar profile with total citations of 16,000 and h-index of 57
http://scholar.google.co.uk/citations?user=PWvm-uEAAAAJ&hl=en

Awarded IET Power Electronics Premium for Best Paper 2017 for "Cell capacitor sizing in multilevel converters: cases of the modular multilevel converter and alternate arm converter", IET Generation, Transmission & Distribution 2009 Premium for paper entitled "Intermittent Renewable generation and the cost of maintaining power system reliability" and ICE 2008 Telford Award for paper entitled "Renewables and the grid: understanding intermittency"

Educational History

1986-89	Ph.D. in electrical engineering Heriot-Watt University, Edinburgh, UK
1983-86	B.Sc.(Eng.) in electrical engineering with first class honours Imperial College of Science, Technology and Medicine, University of London, UK

Employment History

2014-	Director of the Energy Futures Lab
2008-	Deputy Head of Department, Electrical and Electronic Engineering
2008-2013	Director of Undergraduate Studies, Electrical and Electronic Engineering
2005-	Professor of Electrical Power Engineering
2003-2005	Reader in Electrical Power Engineering
1994-2003	Lecturer / Senior Lecturer, Department of Electrical and Electronic Engineering, Imperial College London, London
1990-1994	Lecturer, Computing and Electrical Engineering, Heriot-Watt University, Edinburgh.

Membership of Professional Bodies

Fellow of The Royal Academy of Engineering (since 2018)
Chartered Engineer in the UK (registration number 530001)
Fellow of The Institution of Engineering and Technology (membership number 19427451, associate member since 1987, member since 2001, fellow since 2015)

Senior Member of The Institute of Electrical and Electronic Engineers (membership number 00089532, member since 1989, senior member since 2003) including membership of Power and Energy, Industry Applications and Power Electronics Societies. Member of the Long-Range Planning Committee of Power and Energy Society (2012 - 15). Vice-chair of the UK and Republic of Ireland chapter of the IEEE Power Electronics Society (1994 - 96).

Examples of Recent Research Grants

'16-'20	Co-Investigator on Joint UK-India Clean Energy Centre (JUICE), EP/P003605/1, a consortium of universities in UK and India examining solar, storage and microgrid technologies. Total UK funding £6M.
'16-'18	Principal Investigator for extension of HubNet Consortium funded at £2.1M.
'16-'18	Principal Investigator for UK-Korea award "Resilient Hybrid Technology for High-value Microgrids", a consortium with Oxford and 3 Korean partners on optimising of AC+DC microgrids for supply security. Funded at £1M.
'14-'23	Co-Director CDT in "Future Power Networks and Smart Grids", collaboration with Strathclyde funding 55 PhD students, final budget being negotiated.
'14-'17	Principal Investigator for UK-India award "Reconfigurable Distribution Networks", EP/K036327/1, a consortium of Imperial, Cardiff and Warwick with three Indian partners. RCUK Energy Programme contribution of £1.2M
'13-'17	Co-Investigator for UK-China award "Interface and Network Infrastructure to Support EV Participation in Smart Grids", EP/L00089X/1, a consortium of Strathclyde and Imperial with two Chinese partners. RCUK Energy Programme contribution of £0.94M
'13-'17	Co-Investigator for Components Theme of award "Underpinning Power Electronics", EP/K034804/1, a consortium of Bristol, Manchester, Nottingham, Imperial, Greenwich, Warwick. EPSRC contribution of £2.0M
'13-'15	Principal Investigator for UK-China award "Enhanced Renewable Integration through Flexible Transmission Options", a consortium of Imperial, Cardiff and Birmingham with three Chinese partners. RCUK Energy Programme contribution of £1.0M
'11-'16	Principal Investigator for "HubNet: research leadership and networking for power networks", a consortium with a founding membership of 8 universities. RCUK Energy Programme contribution of £4.4M.
'11-15'	Principle Investigator for "Top and Tail Transformation", a consortium of 6 UK universities exploring power electronics and materials solutions to building new continental Supergrids infrastructure and for redefining local distribution networks. Funded at £4M over 4 years.

Industrial Research Collaboration
Over an 8-year period I have been a consultant to GE Grid Solutions (formerly Alstom) on next-generation converter circuits and control for HVDC technology. I have collaborated with UK Power Networks on several projects, most recently a Low-Carbon Network Fund afield trial of 24 "soft open-points" in London and Brighton, a technology I proposed and for which my team create the control algorithms. I have previously collaborated with ABB on transmission system damping provision and with National Grid on power electronics.

Other Activities
Member of the following advisory boards: Electrical Systems and Controls, Rolls-Royce; Carbon Measurement, NPL; RCUK Energy Programme; Universities in the SET Plan, UNI-SET.
External examiner at University College Dublin (2013-16), Strathclyde (2006-2010) and Heriot-Watt (2005-2009) Universities.