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Make a Difference with an EIT Doctor of Engineering

Thursday 30 September | Information Session

Presented By

Professor Akhtar Kalam | EIT Academic Board Chairman

Dr. Morteza Alizadeh | EIT Research Coordinator and Lecturer

Mr. Abdullah Mujahid | EIT Doctor of Engineering student

Agenda

1 Welcome & Introduction

EIT's Doctor of Engineering (DEng)

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1. Course structure
 2. Entry requirements
 3. Potential job outcomes
 4. How to Apply
 5. Student support
 6. DEng supervisors
 7. Research topics

3 Hear from current DEng Student – Abdullah Mujahid

4 Conclusion and Q&A





Professor Akhtar Kalam

Head of EIT's Academic Board

Currently working as the Head of External Engagement in the College of Engineering and Science at Victoria University, Melbourne. A former Deputy Dean of the Faculty of Health, Engineering and Science for 7 years.

Concurrent appointment as Distinguished Professor at the University of New South Wales, Sydney, Australia; MRS Punjab Technical University – Bhatinda, India; Crescent University – Chennai, India; VIT – Vellore, India and 5 Malaysian universities.

He is currently the Editor in Chief of the Australian Journal of Electrical and Electronic Engineering.

He has conducted research, provided industrial consultancy and published over five hundred publications on his area of expertise and written over 29 books in the area.

More than 40 PhD students have graduated under his supervision.

He is an external examiner of many external doctoral students in Australia and overseas.

His major areas of interests are power system analysis, communication, control, protection, renewable energy, smart grid, IEC61850 implementation and cogeneration systems.



Dr Seyed Morteza Alizadeh

EIT's Research Coordinator

Morteza holds a PhD in electrical engineering-power systems from Victoria University, Australia.

He has contributed to many international conferences held by professional technical organizations, such as IEEE and Springer, as a session chairman and technical program committee member.

He is also leading a special issue in the journal of Energies.

Morteza is currently working at EIT as a lecturer. He is also coordinating research activities and research training with a focus on Doctorate of Engineering course.

His major areas of interests are power system analysis, industrial automation, renewable energy, modelling and simulation and artificial intelligence, IEC61850 standard

We are dedicated to ensuring that you receive a world-class education and gain skills that you can immediately implement in the workforce.



World-Class Australia Accredited Education

Our vocational programs and higher education degrees are registered and accredited by the Australian Government. We have programs that are also recognized under three international engineering accords.



Engineering Specialists

EIT is one of the only institutes in the world specializing in Engineering. We deliver professional certificates, diplomas, advanced diplomas, undergraduate and graduate certificates, bachelor's and master's degrees, and a Doctor of Engineering.



Industry Experienced Lecturers

Our lecturers are highly experienced engineers and subject specialists with applied knowledge. The technologies employed by EIT, both online and on-campus, enable us to source our lecturers from a large, global pool of expertise.



Industry Oriented Programs

Our programs are designed by industry experts, ensuring you graduate with cutting-edge skills that are valued by employers. Our program content remains current with rapidly changing technology and industry developments.



Unique Delivery Model

We deliver our programs via a unique methodology that makes use of live and interactive webinars, an international pool of expert lecturers, dedicated learning support officers, and state-of-the-art technologies such as hands-on workshops, remote laboratories, and simulation software.



World Class Universities

1. High in ranking lists
2. Employment recognition
3. Research: creating and disseminating knowledge
4. Scale of the university



World Class Higher Education

1. International recognition, benchmarking and partnering
2. Long term Graduate employability
3. Excellence in Teaching, Learning and Assessment (TLA)
4. International Performance Standards
5. Scholarly activity to support TLA

*Synthesized from presentations at 17th Malaysian Education Summit: Moving Towards a World Class Education System: Building and Sustaining World Class Universities ASLI June 2013



About

Graduates of the Professional Doctor of Engineering (DEng) will be able to make original and significant contributions to the development, application and evaluation of professional knowledge by engaging with practical problems of demonstrated importance to their employment context and the wider body of engineering and technical knowledge.

An Australian accredited qualification (accredited by the Tertiary Education Quality and Standards Agency (TEQSA); Australia's independent national quality assurance and regulatory agency for higher education).



Level
Leads to an Australian Qualification Framework (AQF) level 10



Duration
3 years full time or part-time equivalent



Delivery
Online or On-campus



Structure
120 credit points:
32 coursework +
88 research
Coursework +
doctoral
dissertation

The EIT Doctor of Engineering (DEng) is a practically oriented professional doctor of engineering which is suited to the direct needs of solving industry problems. A PhD track focuses more on academic or scientific research.

There are a huge number of PhDs being offered around the world. If you want a really good outcome to your research and a credential of huge value, the simplest solution is to seriously consider MIT, Cambridge, Oxford, or equivalent. These will most assuredly help you in your academic or scientific research career if that is what you seek. But if you are an engineering working professional with a keen interest to solve problems that benefit industry and society at large, then the DEng is for you!

There are a few concerns when it comes to the standard research-based PhD for the following reasons:

- The supervision and support are often very limited meaning that the doctoral candidate is on their own for most of the time – this is distressing and can contribute to an increased drop-out rate
- The lack of tight supervision can mean a less than desirable quality in the research work and resultant PhD
- The emphasis on pure research often results in a doctorate where there are no practical outcomes and thus no support for the graduate in getting a job/work outcome
- The lack of any supporting course work in the degree means less rigour and understanding of the high standards required for a high-quality research-based approach
- Can take a significantly long time to complete

We have thus crafted a professional doctorate that is aimed at applied research, focusing on developing specialized skills for practical application in the engineering workforce. The outcomes of the research and investigation have direct and immediate benefits to industry. It prepares the individuals for professional engineering, with an emphasis on engineering practice, high technical competence, and innovation preparing graduates for technical leadership roles in the engineering industry.

We have also built-in significant support systems for the candidate, no matter where they are located. We have recognized that the online or blended model can work really well today with the available modern technologies and strong support for the candidate. The support systems come in the usual way of collegial support from the doctoral supervisors/lecturers/peers and comprehensive course work undertaken over at least two years ensuring the candidate has the tools and know-how to engage in high-quality applied research. We also have a dedicated learning support officer (LSO) who will be there with you every step of your journey.

We believe the EIT DEng program will become a marker of someone who has worked on high quality applied research of use to industry and the graduate would be a chartered or professional engineer of note.

You can view more discussions on this issue on Wikipedia: https://en.wikipedia.org/wiki/Doctor_of_Engineering

Course Structure

Year 1	Units	Research or Coursework	Credit Points
Terms 1 & 2 (equivalent to 1 semester)	• DEng601 - Engineering Practice and Key Research Methodology	Coursework	4
	• DEng602 - Technology Evaluation and Intellectual Property	Coursework	4
	• DEng603 - Applied Mathematical Modelling and Simulation	Coursework	4
	• DEng604 - Data Acquisition	Coursework	4
Terms 3 & 4 (1 semester)	• DEng700 - Research Project Proposal (over 2 terms)	Research	12
Year 2			
Terms 1 & 2 (equivalent to 1 semester)	• *DEng801 - Advanced Data Analysis	Coursework	8
	• DEng802 - Doctoral Dissertation Research Paper 1	Research	14
Terms 3 & 4 (1 semester)	• *DEng803 - Big Data Analysis and Pattern Recognition	Coursework	8
	• DEng804 - Doctoral Dissertation Research Paper 2	Research	14
Year 3			
Terms 1 & 2 (2 semesters)	• DEng900 - Doctoral Dissertation (over 4 terms)	Research	48
Total Coursework Units (equivalent to 2 semesters)			32
Total Research Units (equivalent to 4 semesters)			88
TOTAL CREDIT POINTS (equivalent to 6 semesters or 3 years)			120

* Elective units - Other approved postgraduate unit/s as appropriate to the relevant field of study (Master- year 2 level unit) can be taken on by the student in consultation with their supervisor. These alternative unit/s, endorsed by the supervisor, must be approved by the ACC/Deputy Dean. DEng801 & DEng803 units need to be substituted with 2 MEng elective units for credit equivalence.



Flexibility

Our online programs are designed to suit working professionals with practical experience in their field.



Unique Delivery Model

We deliver our online programs via a unique methodology that has been honed over 10 years.



Industry Oriented

Applied, industry focused and provides mutual benefit to industry and academia.



Work Integrated

Link your education to workplace issues and solve problems that you are passionate about in innovative and flexible ways.



Research

You will pursue an independent investigation into a research problem of your own design that makes a significant and original contribution to knowledge in the context of professional practice.



Contribution

Prepares candidates for the highest level of professional practice, in which they can contribute significantly to the development of their discipline in Engineering.

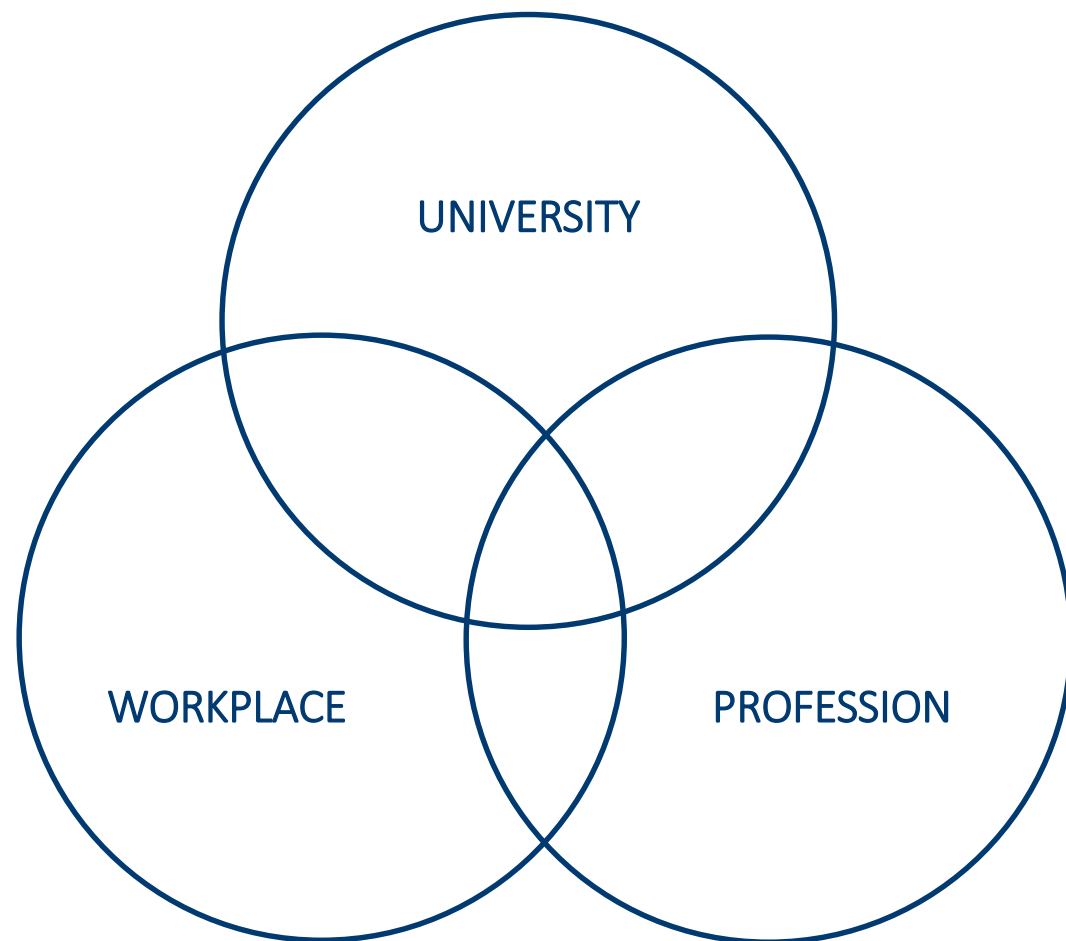


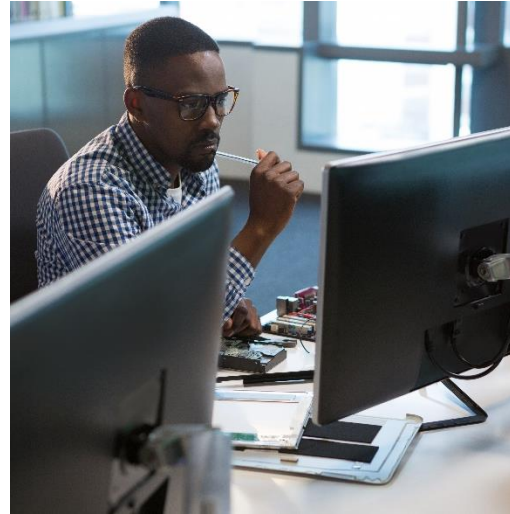
Figure 1: The Hybrid Curriculum of the Professional Doctorate
(Adapted from Lee, Green and Brennan (2000) referenced in Malfroy and Yates (2003))

<http://www.proceedings.informingscience.org/InSITE2006/IJDSv1p035-044Fink14.pdf>



Academic sector

Attract talented researchers and professionals with the ability to communicate effectively to contribute to their local and international profile and reputation.



Businesses and organizations in the private sector

Hiring researchers/professionals to develop and improve products, processes or services, and create a competitive edge through innovation.



Government agencies

Hiring researchers/professionals is a way to access specialist knowledge and skills.

To gain entry into this program, applicants need one of the following:

- A. BE Honours, Graduate Diploma (or equivalent) with minimum Second-Class Honours Division A (H2A) **OR**
- B. An appropriate and relevant Master degree from EIT or other recognised tertiary institution **OR**
- C. Satisfying the Dean (or delegate) of their fitness to undertake further advanced work. This would be established by:
 - *Relevant four-year undergraduate qualification from a recognised institution **AND***
 - *Submission of a resume demonstrating, at least five years professional practice in a relevant field with ability to demonstrate, or be in a position to produce their own substantial, original professional contributions in the relevant engineering field and/or published research work **AND***
 - *An appropriate level of English Language Proficiency as outlined in the Admissions Policy.*

More information can be found here: <https://www.eit.edu.au/courses/doctor-of-engineering/>

- A. A candidate can apply for credit at the point of admission through Prior Recognition Learning (RPL) . Credit will not be granted towards a thesis, dissertation or alternative research component.
- B. Any candidate transferring from a coursework Master degree from EIT or another recognised institute or university may apply and receive credit for a maximum of 2 units (8 credit points).
- C. Any candidate transferring from a Master’s degree by research from a recognised institution may apply and receive credit for a maximum of 2 units (8 credit points).
- D. Any candidate transferring from a professional doctorate degree from a recognised institution may apply and receive credit for a maximum of 2 units (8 credit points).
- E. Direct Entry will only be granted to graduates of Bachelor Honours, Graduate Diplomas or Masters from a cognate discipline from a recognised institution.
- F. Graduates of a 3-year Bachelor degree will NOT be granted direct entry (regardless of work experience) and will be advised to successfully complete an EIT Graduate Diploma or a two-year EIT Master degree to gain entry.

It will take approximately 3 weeks from submitting your application to receiving your Letter of Offer.

1. Visit our website and fill in an enquiry form.
2. An EIT Course Advisor will call you to discuss your enquiry.
3. You will receive an email which provides you details about the start date, cost of the program and a link to our online application portal.
4. Your application will need to include a resume, a 500 word statement as to why you wish to complete the Doctor of Engineering and 1000 word research proposal. Certified identity and academic documents will also need to be provided.
5. If you wish to discuss your research proposal with a member of the academic team before completing your application, please let your Course Advisor know and they will provide the relevant contact details.
6. Once you complete your application, our admissions team will assess it for entry requirements.
7. If you meet entry requirements, your application will be forwarded to the Research Committee for review and allocation of a potential supervisor.
8. All applications will be interviewed (with research supervisor and delegate).
9. Letters of Offer will be sent via admissions.



Learning Support Officer



Associate/Assistant Supervisor



Research Coordinator



Industry Supervisor as appropriate



Comprehensive Orientation



Library Resources



Academics



Study support



Principal Supervisor



Remote labs and simulation software



Conference support/Journal
Publication Support



Scholarships via assistantships

EIT Dean's High Achievers Doctorate Scholarship	
<i>Applicable to:</i>	Domestic and International students who have a record of academic excellence and high achievement and who are seeking to commence the Professional Doctor of Engineering program at EIT.
<i>Number offered:</i>	Limited to 2 scholarships per semester*
<i>Value:</i>	25% discount on tuition fees for the next term/semester**
<i>Delivery locations:</i>	Online and On-campus

**When multiple applications meeting the eligibility criteria are received, the scholarship panel will select 2 recipients based on higher academic grades.*

***Discounts will be applied to the tuition fees for up to a maximum of 4 units in one semester/term. Discounts are applied to the amount and currency invoiced to the student.*

Assistantships	
<i>About:</i>	Research Doctorate students may be awarded assistantships, which fall into 2 general categories: Teaching Assistant (TA) and Graduate Assistant (GA). Assistantships are an arrangement in which financial support is given to a graduate student who engages in teaching and/or research in furtherance of the institute's academic mission, as well as his or her graduate education.
<i>Applicable to:</i>	Full-time and part-time Doctorate students
<i>Value:</i>	10% discount on total tuition fees for the next term/semester* Teaching assistants and Graduate assistants will be paid at a stipend rate of AUD\$32/hour or equivalent for their duties

**Discounts will be applied to the tuition fees for up to a maximum of 4 units in one semester/term. Discounts are applied to the amount and currency invoiced to the student.*

Full Scholarship and Assistantships information, including eligibility criteria and conditions, will be available on the EIT website: www.eit.edu.au

DEng supervisors



Professor Akhtar Kalam
Chair of EIT's Academic Board
Head of External Engagement in the
College of Engineering and Science,
Victoria University, Australia



Professor Vivian Tam
Associate Dean (Research and HDR) and
Discipline Leader at School of Engineering,
Design and Built Environment, Western
Sydney University, Australia



Dr M. Reza Hosseini
Associate Head of School (Research)
Faculty of Sci Eng & Built Env, Deakin
University, Australia



Professor Assed Naked Haddad
Federal University of Rio de
Janeiro, Brazil



Dr Zubair Baig
Senior Lecturer and Co-Director of
Research Lab at School of Information
Technology, Deakin University



Associate Professor Duy Ngo
School of Engineering, The
University of Newcastle, Australia



Dr. Seyed Morteza Alizadeh
Research Coordinator and Lecturer
Engineering Institute of Technology,
Melbourne, Australia



Dr. Ana Evangelista
Course Coordinator and Lecturer
Engineering Institute of Technology,
Perth, Australia



Dr Akhlaqur Rahman
Course Coordinator and Lecturer
Engineering Institute of Technology,
Melbourne, Australia



Dr. Yuanyuan Fan
Course Coordinator and Lecturer
Engineering Institute of Technology,
Perth, Australia



Dr. Milind Siddhpura
Course Coordinator and Lecturer
Engineering Institute of Technology,
Perth, Australia



Dr. Arti Siddhpura
RPL & PD coordinator and Lecturer
Engineering Institute of Technology,
Perth, Australia

Civil Engineering	Research Topics
	High-Grade CO2 Concrete for Low Life-Cycle Costing and Emissions
	Novel multiple-constraint model for green buildings and life-cycle analyses
	Utilisation of waste glass fines in concrete applications
	Building Information Modelling (BIM) or Digital Engineering (DE)
	Circular economy in the built environment
	Construction planning, scheduling, and budgeting, optimization, simulation, and decision-making
	Design and analysis of structures and infrastructures with special interest to multi-objective optimization, simulation, and new applications and methods
	Resilient cities and risk reduction
	Risk assessment (Qualitative and quantitative risk assessment of industrial and civil infrastructures; Risk analysis tools and methods, Risk management strategies and standards)
Electrical Engineering	Research Topics
	Coordinated Operation and Planning of Hybrid Energy Systems
	Advanced Topologies and Control Techniques for Multilevel Converters
	A Novel Voltage Stability Model for Transient Analysis in Distribution Network Connected Wind Power Plant
	Advanced Technologies for DC Microgrid Plug-and-Play Operations
	Advanced Artificial Intelligence-based Techniques in Virtual Power Plants
	Smart Grids and Microgrids: Challenges and Developments
	Green hydrogen energy technologies

Industrial Automation, Instrumentation and Process Control	Research Topics
	Multiphase flow modelling and CFD modelling
	Hydrogen economy and process modelling
	Erosion Modelling
	Multivariable System Identification from Operational Data Using Deep Neural Networks
Information Technology	Research Topics
	Digital forensics for unmanned aerial objects
	Machine Learning for IoT Security
	IT/OT security for critical infrastructures
Mechanical Engineering	Research Topics
	Asset Management in Hydrogen
	Spot Weld Quality Analysis in dissimilar metals
	Assessment of large scale industrial refrigeration with low TEWI (total equivalent warming impact) refrigerants.
	Application of additive manufacturing for rapid and cost-effective product development of different projects
	Modeling and Optimization of various additive manufacturing processes
	Cyber physical systems or IoT in Manufacturing
	AI based manufacturing process simulation (large range of conventional & unconventional manufacturing processes can be covered)
	FEA in biomedical implants
	Bio-inspired compliant mechanisms
	Heat transfer applications in semiconductor cooling or microfluidics

The Doctor of Engineering contains 120 credit points in total made up of four research-based units and six coursework units. The duration is three years' full time or the part-time equivalent. Successful students will need to spend a minimum of 20 hours per fortnight for coursework units and a minimum of 60 hours per fortnight for research units.

On-Campus:

- Coursework units require on-campus attendance for live tutorials
- Research units require attendance on-campus for 2 x 2 hours a week (2 separate days)

Online Intakes

- 31 January 2022, Application Deadline: **20 December 2021**
- 27 June 2022, Application Deadline: **16 May 2022**

On-Campus Intakes – Perth, Western Australia

- 21 February 2022, Application Deadline: **10 January 2022**
- 1 August 2022, Application Deadline: **20 June 2022**

Scholarships Cut-off date: 4 weeks before the program start date

Hear from one of our current DEng students!

Abdullah Mujahid

- Professional Electrical Engineer
- Doctor of Engineering Student
- Engineering Institute of Technology

Educational Background:

- Bachelor of Science in Electrical Engineering
 - University of the East, Philippines
- Master of Engineering (Power System)
 - MAPUA University, Philippines

Current Work: Senior Electrical Engineer & Facilities Planning Engineer

Employer: King Fahad Medical City

Location: Riyadh, Saudi Arabia

Affiliations:

- Saudi Council of Engineers
- Institute of Integrated Electrical Engineers, Inc.



- World-class Australian accredited education
- Flexibility
- Dissertation is relevant to current work
- Affordable
- Excellent academic support
- Very approachable research supervisors
- Highly qualified instructors

- **Coursework:**
 - **Completed:** DEng601 and DEng602 → 1st Semester 2021
 - **Current:** DEng603 and DEng604 → 2nd Semester 2021
- **Publication**
 - First doctorate research paper presented on 28th September 2021 in the 31st Australasian Universities Power Engineering Conference (AUPEC)
- **Current Research Work**
 - Working on a practical engineering research that aims to provide automated assistance to patients of healthcare facilities

- **Healthcare Facilities Automation**
 - Development of a robot that will provide assistance to patients while navigating within the medical facility.
 - Answering the call or challenge of Saudi Vision 2030
- **After DEng**
 - Conduct more industry related research works and innovation
 - Work in engineering institutions such as EIT to share KSA to others
 - Maintain competitiveness in engineering profession



Upcoming Webinars



Gas Turbines – What Does the Future Hold?

Technical Topic Webinar

3.00PM - 4.00PM (AWST)
Thursday 7 October 2021

[Register Now](#)



Arc Flash: What Is It and How Do We Design for It?

Technical Topic Webinar

3.00PM - 4.00PM (AWST)
Thursday 21 October 2021

[Register Now](#)



See all upcoming webinars and events here:
<https://www.eit.edu.au/news-events/events/>

Upcoming Virtual Conference

Insight into Power System Protection & Design

Renewable Energy • Microgrids • IEC 61850 • Electrical Safety

Virtual Event | 7th October 2021

Presented by:
 **IDC**
Technologies

50% Student
Discount Available



**Professor
Akhtar
Kalam**

Head of External
Engagement,
Victoria University



**Thomas
Wearne**

Alice Springs Future
Grid Project Lead,
Power and Water
Corporation



**Peter
Mangan**

Managing Director,
Applied Power
Technologies



**Raúl
Barrera**

Lead Engineer,
Voltex Power
Engineers. CEO,
Power & Plant
Training Pty Ltd



**Erwin
Boermans**

Founding Director,
COMFORTiD



**Phil
Kreveld**

Author and Industry
Electrical Specialist,
Electrical
Connection

<https://www.events.idc-online.com/upcoming-conferences/insight-into-power-system-protection-design-virtual-event>

Q&A





Engineering Institute of Technology.

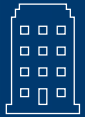
Thank you for attending.

Contact Us



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