

# Ozan Keysan

## Curriculum Vitae

September 2019

Address: Orta Doğu Teknik Üniversitesi  
Elektrik-Elektronik Müh., 06800, Ankara  
Phone: +90 312 210 7586  
Email: [keysan@metu.edu.tr](mailto:keysan@metu.edu.tr)  
Web: <http://keysan.me>

### Experience

2014–Present	Assistant Professor	Department of Electrical and Electronics Engineering Middle East Technical University, Ankara, Turkey
2011–2014	Research Associate	Institute for Energy Systems, University of Edinburgh
2010–2012	Electrical Machine Design Consultant	NGenTec, Edinburgh
2009–2010	Research Associate	Institute for Energy Systems, University of Edinburgh
2005–2009	Research Assistant	Middle East Technical University

### Education & Qualifications

2013	PhD	Electrical Engineering, University of Edinburgh, UK <i>Thesis Title: Superconducting Generators for Large Offshore Wind Turbines</i>
2008	MSc	Electrical-Electronics Engineering, Middle East Technical University <i>Thesis Title: A Non-Invasive Speed and Position Sensor for Induction Machines Using External Search Coils</i>
2005	BSc	Electrical-Electronics Engineering, Middle East Technical University

### Academic & Administrative Work

- Vice Chair, Dept. of Electric-Electronics Engineering, 2018-2019.
- Advisor to Dean, 2016-2018.
- Member of the Executive Board, METU-Wind Center, 2016-Present
- Member of the Executive Board, Design Factory, 2016-2017.
- Associate Editor, IET Renewable Power Generation, 2016-Present.
- EU Cost Action Rapporteur, 2017

### Research Interests

My main area of interests are renewable energy generation, smart-grids and design of electrical machines. In particular, I am working on novel electrical machine topologies such as integrated modular motor drives, superconducting machines and permanent-magnet machines. I also worked on the implementation of direct-drive systems to renewable energy systems such as wind, wave and tidal energy converters.

## Research Experience & Projects

2018–2019	USTDA	USA, Trade and Development Agency, <b>METU Smart Campus Project</b> : This project is the only funded project from the Smart Cities call of 2016. In the project, feasibility analysis of smart city concepts for METU will be investigated. These include roof-top PVs, electric shuttle bus, electric bike network, smart LED lighting, combined heat and power generation facilities. The project aims to make METU campus a sustainable, self-sufficient green campus. Project has been signed in September 2017, and it is expected to be completed in April 2019. Project budget: \$830.000.
2017–2018	TUBITAK 3501	<b>Development of a 7,5 kW Permanent Magnet Integrated Modular Motor Drive System</b> : The aim of this project is to develop an IMMD system where the electric motor and its drive are integrated into a single package. The motor and drive will consist of several modules to increase fault tolerance. Gallium Nitride (GaN) power semiconductor devices will be used to reduce the size and increase the efficiency. Project budget: 177.000 TL.
2017–2019	ASELSAN SST	<b>Electromagnetic Design and Optimization of a 10 MJ Electromagnetic Launcher - Phase II</b> : Second phase of the TUFAN railgun project in which a 10 MJ prototype will be tested. Detailed 3D FEA models are developed to obtain electrical, mechanical force, and thermal characteristics of the railgun. Project budget: 392.000 TL.
2017–2018	ASELSAN MGEO	<b>Design of a high performance linear servo actuator and PCB Motor</b> : Two high performance actuators (linear and axial flux permanent magnet) will be designed and manufactured in this project. The aim is to manufacture these actuators in Turkey instead of exporting. Project budget: 198.000 TL.
2017–2018	EnerjiSa-H2020 Project	<b>Pattern Recognition in Power Systems</b> : The aim of EPR Project is to implement pattern recognition techniques for power systems to detect faults and plan predictive maintenance on system components. METU's work packages consist of synthetic inertia implementation in wind turbines to improve power system stability and analyze distribution level power quality to detect anomalies. Total Project budget: € 2.400.000.
2017	ASELSAN UGES	<b>Feasibility analysis and design of a 2.5MW direct-drive wind turbine generator</b> : In this project techno-economic analysis of different generator technologies are performed to find the most suitable generator technology for ASELSAN. A detailed electromagnetic, structural and thermal optimization of a direct-drive generator using FEA tools is presented. Project budget: 87.000TL.
2016–2017	ASELSAN SST	<b>Electromagnetic Design and Optimization of a 200kJ-2MJ Electromagnetic Launcher</b> : In this project electromagnetic and thermal analyses are performed on the TUFAN railgun project. Detailed 3D FEA models are developed to obtain electrical, mechanical force, and thermal characteristics of the railgun. Project budget: 397.000 TL.
2016	METU BAP	<b>Design of a Modular Data Acquisition Board.</b>
2016	ANDAR Servo	<b>Design and Manufacturing of a Eddy Current Damper for Aerospace Application.</b>
2016	ANDAR Servo	<b>Design and Manufacturing of a Brushless PM Servo Motor.</b>

2016	Newton Fund	<b>Design of a superconducting wind turbine prototype.</b>
2016	TUBITAK-2232	<b>Design of modular and fault-tolerant generators for direct-drive wind turbines.</b>
2014	NAREC	<b>Design of next generation HVDC network for the offshore renewable energy industry.</b> My role in the project is to design a high-frequency high-power transformer that can be coupled to the HVDC transmission line.
2011–2014	EU FP7 Project	<b>Marina Platform Project</b> is an EU FP7 project with 17 industrial and academic partners. I am working as a full-time researcher in the project, which aims to design combined wave and wind energy platforms. I've led the work package in the University of Edinburgh, the aim of which is to compare different generator topologies and power take-off systems in terms of efficiency and reliability.
2013	United Arab Emirates Uni.	<b>Design of a 5 kW permanent-magnet linear generator test rig.</b>
2013	General Electric	A project to validate the <b>superconducting generator</b> topology that I developed during my PhD. General Electric agreed to loan the superconducting coil, vacuum chamber and other test equipments for the cryogenic experiments.
2011	NGenTec	Design consultant for a <b>medium-speed PM generator design</b> . Electromagnetic optimization a 5 MW, 300 rpm permanent-magnet generator has been completed.
2010	NGenTec	<b>Design and optimization of a 1 MW, 12 rpm direct-drive generator for a wind turbine.</b> The machine has been manufactured and successfully tested.
2010	SMART R&D Grant	<b>Design and testing of a 25 kW axial flux permanent-magnet generator.</b> The experimental results have been used to evaluate the thermal performance of the generator and the cooling system.
2010	Hayward Tyler	<b>Feasibility analysis of a submerged and flooded permanent-magnet generator.</b> Thermal performance of the flooded generator has been investigated as well as the corrosion mechanisms and fluid drag losses.
2009–2010	NPower Project	<b>Feasibility analysis of direct-drive PM generators for two wave energy converters</b> (Aquamarine,AWS Ocean Power) and two tidal energy converters (Marine Current Turbines, Scotrenewables) have been investigated. An analytical and optimization tool is developed, and licensed by University of Edinburgh for further use.

## Teaching Experience

### Middle East Technical University

For a full list of courses that I taught please visit my courses webpage.

- Electromechanical Energy Conversion I–II (EE361, EE362).
- Static Power Conversion I–II (EE463, EE464).
- Utilization of Electrical Energy (EE462).
- Design of Electrical Machines (EE564).
- Collaborative Design Studio (ID403)

## School of Engineering, University of Edinburgh

### Laboratory Supervision:

- Power Engineering Lab (2nd year): This course introduces students to the techniques and equipment used in the generation, transmission, distribution and utilisation of electrical power.
- Power Generation Lab (3rd year): The lab aims to give the students experience in working with rotating machines and power electronic equipment and synchronization to the grid.

### Courses:

- The Industrial Doctoral Centre for Offshore Renewable Energy (four-year EngD programme), "Introduction to Superconductivity and Superconducting Generators".

## Honours & Awards

- |           |   |
|-----------|---|
| 2018      | Educator of the Year Award, Parlar Foundation   |
| 2018      | Best Lecturer, 2017-2018 Spring semester (based on student evaluations), METU.                    |
| 2017      | Best Lecturer, 2017-2018 Fall semester (based on student evaluations), METU.                      |
| 2017      | Best Poster Award, Renewable Energy and Energy Efficiency Conference, DAAD.                       |
| 2013      | Staff Scholarship, University of Edinburgh.   |
| 2012      | Young Researcher Support, International Conference on Superconductivity and Magnetism, ICSM.      |
| 2012-2013 | PhD Overseas Fee Waiver and Stipend, University of Edinburgh.                                     |
| 2011      | Young Researcher Award and Travel Grant, European Conference on Applied Superconductivity, EUCAS. |
| 2011      | IEEE Membership and Travel Grant, IEEE Power Electronics Society.                                 |
| 2011      | Best Poster Award, IEEE International Electric Machines and Drives Conference, IEMDC.             |
| 2010      | Best Paper Award, IEEE International Conference on Electrical Machines, ICEM.                     |
| 2010-2012 | PhD Scholarship on Renewable Energy, Hopewell Holdings, Hong Kong.                                |
| 2005-2007 | TUBITAK Graduate Fellowship.  |
| 2005      | Ranked 2nd in the Academic Personnel and Graduate Education Exam (ALES).                          |
| 2005      | Finalist in the METU Entrepreneurship Competition (Yeni İşler Yeni Fikirler).                     |
| 2001-2005 | Dean's high honour list (3 times), Dean's honour list (3 times).                                  |

## Courses & Seminars

- HPI, Design Thinking Workshop, 3 days, 2016.
- Aalto Design Factory, Design factory crash course, 2 days, 2015.
- Future Reliable Renewable Energy Conversion Systems, 4th Flagship Seminar, Chongqing, China, 2012.
- Supervising Postgraduate Research, Iain Davidson, 2013.
- Large-Scale Parallel Computing, University of Edinburgh, 2013.
- Superconducting Machines, UK Magnetics Society, University of Oxford, 2012.
- Thermal and Mechanical Aspects of High Performance Electrical Machines, UK Magnetics Society, 2011.
- LaTeX for scientific publications, Skills Development Edinburgh, 2010.
- Opera 2D/3D FEA Analysis of Electrical Machines, Cobham Ltd. Vector Fields, 2009.
- Marine and Tidal Energy Workshop, Industrial Problems in Marine Energy Workshop, 2009.

- Project Management for Researchers, Fistrat Training & Consultancy Ltd., 2009.
- Project Presentation on International Venture Capital Forum, Athens, 2006.
- Project Management and Entrepreneurship Course, 30 days, METU Technopolis, 2005.

## Memberships

2011–Present IEEE Member  
 2011–Present IEEE Power and Energy Society Member  
 2010–Present UK Magnetics Society Member  
 2005–Present TMMOB Electrical Engineers Society Member

## Software

- Programming: Python, R, Matlab, C++.
- Finite Element Analysis: Opera, FEMM, ANSYS, Gmsh, GetDP.
- Computer Aided Design: SolidWorks, AutoCad.
- Computational Fluid Dynamics: OpenFOAM.

## Activities & Hobbies

Mountaineering Active Member of METU Mountaineering Club  
 Sailing Dinghy and Yacht Sailing, Certificate of Competence For Operators of Pleasure Craft.  
 Blogging asuyatuyolar.org

## Languages

English (Fluent), Spanish (Intermediate), Chinese (Beginner)

# Publications

## Refereed Journal Papers

1. Ceylan, D., M. Karagoz, Y. Cevik, B. Yildirim, H. Polat, and O. Keysan. Simulations and Experiments of EMFY-1 Electromagnetic Launcher. *IEEE Transactions on Plasma Science* **47**(7) (2019), 3336–3343.
2. Mueller, M. A., J. Burchell, Y. C. Chong, O. Keysan, A. McDonald, M. Galbraith, and E. J. P. Echenique Subiabre. Improving the Thermal Performance of Rotary and Linear Air-Cored Permanent Magnet Machines for Direct Drive Wind and Wave Energy Applications. *IEEE Transactions on Energy Conversion* **34**(2) (2019), 773–781.
3. Tarvirdilu Asl, R., H. M. Yüksel, and O. Keysan. Multi-objective design optimization of a permanent magnet axial flux eddy current brake. *Turkish Journal of Electrical Engineering & Computer Sciences* **27**(2) (2019), 998–1011.
4. Temiz, H., E. Demirok, O. Keysan, A. Türkay, and B. Çetinkaya. Performance comparison of passive series R and shunt R-C damped LCL filter for grid-connected inverters. *The Journal of Engineering* **2019**(18) (2019), 4698–4702.
5. Uğur, M. and O. Keysan. Multi-physics design optimisation of a GaN-based integrated modular motor drive system. *The Journal of Engineering* **2019**(17) (2019), 3900–3905.
6. Zeinali, R. and O. Keysan. A Rare-Earth Free Magnetically Geared Generator for Direct-Drive Wind Turbines. *Energies* **12**(3) (2019), 447.
7. Ceylan, D., M. U. Gudelek, and O. Keysan. Armature Shape Optimization of an Electromagnetic Launcher Including Contact Resistance. *IEEE Transactions on Plasma Science* **46**(10) (2018), 3619–3627.



8. Ugur, M. and O. Keysan. Tümüleşik Modüler Motor Sürücü Sistemi Tasarımı. *Fırat Üniversitesi Mühendislik Bilimleri Dergisi* **30**(3) (2018), 75–83.
9. Radyjowski, P., O. Keysan, J. Burchell, and M. Mueller. Development of a superconducting claw-pole linear test-rig. *Superconductor Science and Technology* **29**(4) (2016), 044002.
10. Keysan, O. Future Electrical Generator Technologies for Offshore Wind Turbines. *Engineering & Technology Reference* (December 2014) (2015), 1–20.
11. Keysan, O. and M. Mueller. A modular and cost-effective superconducting generator design for offshore wind turbines. *Superconductor Science and Technology* **28**(3) (2015), 034004.
12. Keysan, O. and H. B. Ertan. Real-Time Speed and Position Estimation Using Rotor Slot Harmonics. *IEEE Transactions on Industrial Informatics* **9**(2) (2013), 899–908.
13. Hodgins, N., O. Keysan, A. McDonald, and M. A. Mueller. Design and Testing of a Linear Generator for Wave-Energy Applications. *IEEE Transactions on Industrial Electronics* **59**(5) (2012), 2094–2103.
14. Keysan, O., M. Mueller, A. McDonald, N. Hodgins, and J. Shek. Designing the C-GEN lightweight direct drive generator for wave and tidal energy. *IET Renewable Power Generation* **6**(3) (2012), 161.
15. Keysan, O., D. Olczak, and M. A. Mueller. A Modular Superconducting Generator for Offshore Wind Turbines. *Journal of Superconductivity and Novel Magnetism* **26**(5) (2012), 2103–2108.
16. Keysan, O. and M. A. Mueller. A Homopolar HTSG Topology for Large Direct-Drive Wind Turbines. *IEEE Transactions on Applied Superconductivity* **21**(5) (2011), 3523–3531.
17. Keysan, O. and B. Ertan. Determination of rotor slot number of an induction motor using an external search coil. *Facta universitatis - series: Electronics and Energetics* **22**(2) (2009), 227–234.

## Book Chapters

1. Keysan, O. “Application of high-temperature superconducting machines to direct drive renewable energy systems”. In: *Electrical Drives for Direct Drive Renewable Energy Systems*. Ed. by M. Mueller and H. Polinder. Elsevier, 2013, pp.219–252. ISBN: 84569-783-9.

## Patent

1. Keysan, O. and H. B. Ertan. *Speed and Rotor Position Estimation of Electrical Machines Using Rotor Slot Harmonics and Higher Order Rotor Slot Harmonics*. 2011.

## Papers in Conference Proceedings

1. Cakal, G. and O. Keysan. Design of Double Sided Linear Motor with Easy to Manufacture Hairpin Plate Winding. In: *2019 12th International Symposium on Linear Drives for Industry Applications (LDIA)*. d. IEEE, 2019, pp.1–5. ISBN: 978-1-5386-5804-8.
2. Ertekin, O. Keysan, M. Göl, H. Bayazit, T. Yıldız, A. Marr, M. Ganji, S. Teimourzadeh, O. B. Tör, and S. Özkavaf. “METU Smart Campus Project (iEAST)”. In: *Lecture Notes in Networks and Systems*. Vol. 76. 2019, pp.287–297. ISBN: 9783030180720.
3. Akgemci, A., R. Zeinali, and O. Keysan. Minimization of EMF Harmonics and Cogging Torque for a Medium Speed RFPM Wind Turbine Generator. In: *2018 7th International Conference on Renewable Energy Research and Applications (ICRERA)*. Vol. 5. Paris: IEEE, 2018, pp.342–347. ISBN: 978-1-5386-5982-3.
4. Cakal, G., R. Zeinali, and O. Keysan. Design and Optimization of Reduced Torque Ripple Rotary Voice Coil Motor. In: *2018 XIII International Conference on Electrical Machines (ICEM)*. IEEE, 2018, pp.663–669. ISBN: 978-1-5386-2477-7.
5. Duymaz, E., S. Pourkeivannour, D. Ceylan, I. Sahin, and O. Keysan. Design of a Power Plant Emulator for the Dynamic Frequency Stability Studies. In: *2018 XIII International Conference on Electrical Machines (ICEM)*. IEEE, 2018, pp.152–157. ISBN: 978-1-5386-2477-7.
6. Karakaya, F., M. Ugur, and O. Keysan. Investigation of Turn-on and Turn-off Characteristics of Enhancement-Mode GaN Power Transistors. *2018 20th European Conference on Power Electronics and Applications, EPE 2018 ECCE Europe* (2018), P.1–P.9.

7. Mutlu, M. K., O. Keysan, and B. Ulutas. Limited-Jerk Sinusoidal Trajectory Design for FOC of PMSM with H-Infinity Optimal Controller. In: *2018 IEEE 18th International Power Electronics and Motion Control Conference (PEMC)*. IEEE, 2018, pp.704–710. ISBN: 978-1-5386-4198-9.
8. Sahin, I. and O. Keysan. A new model predictive torque control strategy with reduced set of prediction vectors. In: *2018 IEEE 12th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG 2018)*. IEEE, 2018, pp.1–6. ISBN: 978-1-5386-2508-8.
9. Ugur, M. and O. Keysan. Design of a GaN Based Integrated Modular Motor Drive. In: *2018 XIII International Conference on Electrical Machines (ICEM)*. Immd. IEEE, 2018, pp.1471–1477. ISBN: 978-1-5386-2477-7.
10. Ugur, M., E. Duymaz, M. Gol, and O. Keysan. Evaluation of Photovoltaic Systems for Reactive Power Compensation in Low Voltage Power Systems. In: *2018 IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT-Europe)*. IEEE, 2018, pp.1–6. ISBN: 978-1-5386-4505-5.
11. Ugur, M., H. Sarac, and O. Keysan. Comparison of Inverter Topologies Suited for Integrated Modular Motor Drive Applications. In: *2018 IEEE 18th International Power Electronics and Motion Control Conference (PEMC)*. IEEE, 2018, pp.524–530. ISBN: 9781538641989.
12. Ceylan, D., M. U. Gudelek, and O. Keysan. Armature shape optimization of an electromagnetic launcher using genetic algorithm. In: *2017 IEEE 21st International Conference on Pulsed Power (PPC)*. Vol. 2017-June. IEEE, 2017, pp.1–6. ISBN: 978-1-5090-5748-1.
13. Ceylan, D. and O. Keysan. Effect of conducting containment on electromagnetic launcher efficiency. In: *2017 18th International Symposium on Electromagnetic Fields in Mechatronics, Electrical and Electronic Engineering (ISEF) Book of Abstracts*. Poland: IEEE, 2017, pp.1–2. ISBN: 978-1-5386-1661-1.
14. Ugur, M. and O. Keysan. DC link capacitor optimization for integrated modular motor drives. In: *2017 IEEE 26th International Symposium on Industrial Electronics (ISIE)*. Vol. i. Edinburgh: IEEE, 2017, pp.263–270. ISBN: 978-1-5090-1412-5.
15. Zeinali, R. and O. Keysan. A Novel Magnetic Geared Superconducting Generator Design for Direct-Drive Wind Turbines. In: *10th Japanese-Mediterranean Workshop on Applied Electromagnetic Engineering for Magnetic, Superconducting and Nano Materials*. Izmir, 2017, pp.16–18.
16. Alemdar, O. and O. Keysan. Design and implementation of an unregulated DC-DC transformer (DCX) module using LLC resonant converter. In: *8th IET International Conference on Power Electronics, Machines and Drives (PEMD 2016)*. Dcx. Institution of Engineering and Technology, 2016, pp.6 .–6 . ISBN: 978-1-78561-188-9.
17. Mueller, M., O. Keysan, and J. Bernholz. Analytical model for superconducting generators for wave energy systems. In: *8th IET International Conference on Power Electronics, Machines and Drives (PEMD 2016)*. Institution of Engineering and Technology, 2016, pp.6 .–6 . ISBN: 978-1-78561-188-9.
18. Macadré, L.-m., F. D. Mcauliffe, O. Keysan, M. H. Donovan, S. Armstrong, J. Murphy, and K. Lynch. Optimal Power Aggregation Methods for Marine Renewable Energy Converters ; a Combined Economic and Reliability Approach. In: *EWTEC - European Wave and Tidal Energy Conference*. Nantes, France, 2015.
19. Mcdonald, A. and O. Keysan. How electrical machine and drivetrain design can influence Offshore Wind Cost of Energy? In: *UK Magnetics Society Electromagnetics in Renewable Energy Generation*. 2015, pp.6–9.
20. İnanır, F, P Kutukcu, and O. Keysan. Designing and Optimizing of High Field MRI Magnets Composed of 4 Layer Superconducting Coils Made of MgB2 Wires. In: *European Conference on Applied Superconductivity*. 2A-LS-P-01. 2015, pp.2015.
21. Burchell, J., O. Keysan, and M. Mueller. Proposed Structure for a HTS Generator for Direct Drive Offshore Wind Turbines. In: *EWEA 2014*. 2014, pp.145–148.
22. Keysan, O., J. Burchell, M. Mueller, P. Radyjowski, J. Burchell, and M. Mueller. Towards More Reliable and Cost Effective Superconducting Generators for Wind Turbines. In: *7th IET International Conference on Power Electronics, Machines and Drives (PEMD 2014)*. Manchester: Institution of Engineering and Technology, 2014, pp.4.2.02–4.2.02. ISBN: 978-1-84919-815-8.
23. Keysan, O. and M. A. Mueller. Sizing of Electrical Generators for a Floating OWC Array. In: *European Wind Energy Conference*. Barcelona, 2014, pp.1–7.

24. Echenique, E. J., O. Keysan, and M. A. Mueller. Rotor loss prediction in air-cored permanent magnet machines. In: *2013 International Electric Machines & Drives Conference*. Ed. by Chicago. IEEE, 2013, pp.303–310. ISBN: 978-1-4673-4974-1.
25. Keysan, O., J. Burchell, and M. A. Mueller. Magnetic and structural analysis of a transverse flux claw pole linear machine. In: *2013 IEEE International Conference on Industrial Technology (ICIT)*. Cape Town: IEEE, 2013, pp.1904–1908. ISBN: 978-1-4673-4569-9.
26. Mueller, M. and O. Keysan. An open source tool to estimate mass and efficiency of wind turbine power take-off systems. In: *2nd IET Renewable Power Generation Conference (RPG 2013)*. Beijing: Institution of Engineering and Technology, 2013, pp.3.15–3.15. ISBN: 978-1-84919-758-8.
27. Keysan, O and M. Mueller. A linear superconducting generator for wave energy converters. In: *6th IET International Conference on Power Electronics, Machines and Drives (PEMD 2012)*. Bristol: IET, 2012, pp.B134–B134. ISBN: 978-1-84919-616-1.
28. Keysan, O. and M. A. Mueller. A Transverse Flux High-Temperature Superconducting Generator Topology for Large Direct Drive Wind Turbines. *Physics Procedia* **36** (2012), 759–764.
29. Keysan, O., A. McDonald, and M. Mueller. A direct drive permanent magnet generator design for a tidal current turbine(SeaGen). In: *2011 IEEE International Electric Machines & Drives Conference (IEMDC)*. IEEE, 2011, pp.224–229. ISBN: 978-1-4577-0060-6.
30. Keysan, O. and M. Mueller. Superconducting generators for renewable energy applications. In: *IET Conference on Renewable Power Generation (RPG 2011)*. Vol. 2020. Edinburgh: IET, 2011, pp.12–12. ISBN: 978-1-84919-536-2.
31. Hodgins, N., O. Keysan, A. McDonald, and M. Mueller. Linear generator for direct drive wave energy applications. In: *The XIX International Conference on Electrical Machines - ICEM 2010*. IEEE, 2010, pp.1–6. ISBN: 978-1-4244-4174-7.
32. Keysan, O. and H. Bulent Ertan. Higher order rotor slot harmonics for rotor speed & position estimation. In: *2010 12th International Conference on Optimization of Electrical and Electronic Equipment*. Brasov: IEEE, 2010, pp.416–421. ISBN: 978-1-4244-7019-8.
33. Keysan, O. and H. Bulent Ertan. Speed & position estimation by demodulating rotor slot harmonics. In: *The XIX International Conference on Electrical Machines - ICEM 2010*. 3. IEEE, 2010, pp.1–6. ISBN: 978-1-4244-4174-7.
34. Keysan, O., A. McDonald, and M. Mueller. Integrated Design and Optimization of a Direct Drive Axial Flux Permanent Magnet Generator for a Tidal Turbine. In: *International Conference on Renewable Energies and Power Quality - ICREPQ'10*. Granada, 2010.
35. Keysan, O., M. Mueller, R. Doherty, M. Hamilton, and A. McDonald. C-GEN, a lightweight direct drive generator for marine energy converters. In: *5th IET International Conference on Power Electronics, Machines and Drives (PEMD 2010)*. Institution of Engineering and Technology, 2010, pp.244–244. ISBN: 978 1 84919 231 6.
36. Hodgins, N., A. McDonald, J. Shek, O. Keysan, and M. Mueller. Current and Future Developments of the C-GEN Lightweight Direct Drive Generator for Wave & Tidal Energy. In: *Proceedings of the 8th European Wave and Tidal Energy Conference*. Uppsala, 2009.

## National Papers

1. Ertan, H. B. and O. Keysan. Rotor Oluk Harmoniklerini Kullanarak Asenkron Motorlar İçin Gerçek Zamanında Sensörsüz Hız ve Konum Kestirimi. In: *Eletrik-Elektronik ve Bilgisayar Mühendisliği Sempozyumu*. 2012, pp.1–6.
2. Keysan, O. and H. B. Ertan. Asenkron Motorlarda Oluk Sayısının Gövde Dışına Takılan Bir Bobinle Belirlenmesi. *EMO Bilimsel Dergi* **2**(3) (2012), 29–35.
3. Ertan, H. B. and O. Keysan. Govde disina yerlestirilmis bobin ile asenkron motor hizinin olculmesi. In: *Elektrik-Elektronik, Bilgisayar, Biyomedikal Mühendisliği 13. Ulusal Kongresi*. Vol. 2. 3. 2009, pp.37–43.



## Technical Reports

1. Keysan, O. and M. A. Mueller. *Marina Platform Deliverable 7.2.2, Wind Energy System Components*. Tech. rep. 2012, pp. 1–67.
2. Keysan, O. and M. A. Mueller. *Marina Platform Deliverable 7.3, Critical Components for Wave Energy Converter Power Take-off Systems*. Tech. rep. 2012, pp. 1–48.
3. Keysan, O. *Hayward Tyler, Marinisation of a Direct Drive Permanent Magnet Machine*. Tech. rep. 2010, pp. 1–30.
4. Keysan, O. *Aquamarine Power, Oyster C-Gen Rotary Machine Design*. Tech. rep. 2009, pp. 1–45.
5. Keysan, O. *Archimedes Wave Swing, C-Gen Direct Drive Linear Machine Design*. Tech. rep. 2009, pp. 1–28.
6. Keysan, O. *Marine Current Turbines, C-Gen Direct Drive Machine Design*. Tech. rep. 2009, pp. 1–31.
7. Keysan, O. *Scotrenewables, Tidal Turbine C-Gen Direct Drive Machine Design*. Tech. rep. 2009, pp. 1–48.

## Theses

1. Keysan, O. “Superconducting Generators for Large Offshore Wind Turbines”. PhD Dissertation. University of Edinburgh, 2014, p. 228.
2. Keysan, O. “A Non-Invasive Speed and Position Sensor for Induction Machines Using External Search Coils”. MSc. Middle East Technical University, 2008, p. 213.

## Theses Supervised

1. Lütfi Boyacı, Proton Irradiation and Gamma Ray Irradiation Testing Studies on the Commercial Grade GaNFETs to Investigate their Characteristics under the Space Radiation Environment, MSc 2019
2. Aykut Demirel, Condition Monitoring and Fault Diagnosis of Electrical Motor Drive Systems, MSc 2019
3. Mehmet Kaan Mutlu, Limited-jerk Sinusoidal Trajectory Design for Field Oriented Control of Permanent Magnet Synchronous Motor With H-infinity Optimal Controller, MSc 2019
4. Hakan Temiz, Grid Impedance Estimation Based Adaptive Controller Design for Back-to-Back Wind Turbine Power Converters for Stable Operation in Distorted and Weak Grid, MSc 2019
5. Erencan Duymaz, Investigation of Inertial Support Limits in Wind Turbines and the Effects in the Power System Stability, MSc 2019
6. Aysel Akgemci, Hybrid Excited Synchrnous Generator Design and Comparison of Direct Drive Wind Turbines, MSc 2019
7. Doğa Ceylan, Electromagnetic Simulation and Optimization of an Electromagnetic Launcher, MSc 2018.
8. Mert Bildirici, Reducing the Cost of Electric Transmission and Distribution Systems with Wind Generation by Means of Energy Storage and Demand Side Management, MSc 2018.
9. Aydın Başkaya, Design of a Modular, Axial-flux Direct Drive Permanent Magnet Generator For Wind Turbines, MSc 2018.
10. Melih Var, Improvement of the Electric Field Distribution in the Medium Voltage Gas Insulated Inductive Voltage Transformer, MSc 2017.
11. Öztürk Şahin Alemdar, Design and Implementation of an Unregulated DC/DC Transformer Module Using LLC Resonant Converter, MSc 2016.
12. Mario Recio Lara, Development of a mobile phone application to detect speed and faults of electrical machines\*, MSc 2013.
13. Marzia Akbari, Comparison and control of power take-off systems for combined wind/wave energy platforms, MSc 2013.