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Department		Electronic Engineering		
Research Profile		ORCID ID: https://orcid.org/0000-0002-4755-8648		
		Research Gate ID: https://www.researchgate.net/profile/Muhammad-Ayub-2		
		Google Scholar Profile ID: https://scholar.google.com/citations?user=z1WtPVYAAAAJ&hl=en		
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Qualification				
Year	Degree/Certificate	Name of the Institute/ University	Field of study	
-	Post Doctorate	-	-	
2020	PhD	Hanyang University South Korea	Electrical and Electronic Engineering	
2017	MS/ Mphil	Hanyang University South Korea	Electrical and Electronic Engineering	
2008	Graduation	BUITEMS Quetta	Electronic Engineering	
Publications in HEC Recognized journals				
S. No.	Title of Paper	Name of Journal	National/ International	Publication date
1	M. Ayub , S. Atiq, Q. Ali, A. Hussain and B. Kwon, "Dual-mode Wound Rotor Synchronous Machine for Variable Speed Applications," in IEEE Access , doi: 10.1109/ACCESS.2020.2999609 (https://ieeexplore.ieee.org/abstract/document/9107105) . IF: 4.098	IEEE ACCESS	International	2020
2	M. Ayub , S. Atiq, G. J. Sirewal and B. Kwon, "Fault-Tolerant Operation of Wound Field Synchronous Machine Using Coil Switching," in IEEE Access , vol. 7, pp. 67130-67138, 2019. (https://ieeexplore.ieee.org/document/8721051) IF: 3.557	IEEE ACCESS	International	2019

3	M. Ayub , A. Hussain, G. Jawad and B. Kwon, "Brushless Operation of a Wound-Field Synchronous Machine Using a Novel Winding Scheme," in IEEE Transactions on Magnetics , vol. 55, no. 6, pp. 1-4, June 2019, Art no. 8201104. https://ieeexplore.ieee.org/document/8635517 IF: 1.467	IEEE Transactions on Magnetics	International	2019
4	M. Ayub , G. Jawad and B. Kwon, "Consequent-Pole Hybrid Excitation Brushless Wound Field Synchronous Machine with Fractional Slot Concentrated Winding," in IEEE Transactions on Magnetics , vol. 55, no. 7, pp. 1-5, July 2019, Art no. 8203805. https://ieeexplore.ieee.org/document/8621010 IF: 1.467	IEEE Transactions on Magnetics	International	2019
5	M. Ayub , Bukhari, S.S.H., Jawad, G. and B. Kwon, "Brushless wound field synchronous machine with third-harmonic field excitation using a single inverter," in Electrical Engineering Springer (2019) 101: 165. https://link.springer.com/article/10.1007/s00202-019-00763-3 IF:1.269	Electrical Engineering Springer	International	2019
6	M. Ayub , S.S.H. Bukhari, G. J. Sirewal and B. Kwon, "Brushless wound rotor synchronous machine with third harmonic field excitation," in Electrical Engineering Springer 2019, https://link.springer.com/article/10.1007/s00202-019-00868-9 IF:1.269	Electrical Engineering Springer	International	2018
7	M. Ayub , A. Hussain, G. Jawad, and B. Kwon, "Wye-delta Stator Winding for Brushless Operation of Wound Field Synchronous Machine," in International Journal of Applied Electromagnetics and Mechanics , 2020, https://content.iospress.com/articles/international-journal-of-applied-electromagnetics-and-mechanics/jae209433?resultNumber=0&totalResults=319&start=0&q=Wye-delta+Stator+Winding+for+Brushless+Operation+of+Wound+Field+Synchronous+Machine&resultsPageSize=10&rows=10 IF: 0.684	International Journal of Applied Electromagnetics and Mechanics	International	2020
8	A. Arif, N. Baloch, M. Ayub and B. -I. Kwon, "Wide-Speed Range Operation of PM Vernier Machines Using Wye and Wye-delta winding Configurations," in IEEE Access, doi: 10.1109/ACCESS.2020.3023763. https://ieeexplore.ieee.org/document/9195474 IF: 4.098	IEEE ACCESS	International	2020
9	G. J. Sirewal, M. Ayub , S. Atiq and B. Kwon, "Analysis of a Brushless Wound Rotor Synchronous Machine Employing a Stator Harmonic Winding," in IEEE Access, vol. 8, pp. 151392-151402, 2020, doi: 10.1109/ACCESS.2020.3017102., https://ieeexplore.ieee.org/document/9169628 IF: 4.098	IEEE ACCESS	International	2021
10	S. Sin, M. Ayub and B. -I. Kwon, "Investigation Study of Multi-Mode Multi-Speed Operation Method for Surface-Mounted Permanent Magnet Synchronous Machines," in IEEE Access, vol. 8, pp. 169470-169485, 2020, doi: 10.1109/ACCESS.2020.3024183. https://ieeexplore.ieee.org/document/9197706 IF: 4.098	IEEE ACCESS	International	2019
11	N. Baloch, J. Kwon, M. Ayub and B. Kwon, "Low-Cost Dual-Mechanical-Port Dual-Excitation Machine for Washing Machine Application," in IEEE Access, vol. 7, pp. 87141-87149, 2019. https://ieeexplore.ieee.org/document/8753519 IF: 3.557	IEEE ACCESS	International	2019
12	Jawad, M. Ayub , and B. Kwon, "Design and Analysis of a PM-assisted Brushless WRSM for Improving Torque Characteristics," in International Journal of Applied Electromagnetics and Mechanics , 2020. https://content.iospress.com/articles/international-journal-of-applied-electromagnetics-and-mechanics/jae209429 IF: 0.684	International Journal of Applied Electromagnetics and Mechanics	International	2020

13	S.S. Bukhari, M. Ayub , B. Kwon. A Three-Phase Line-Interactive UPS System to Eliminate the Inrush Current Phenomenon during Switching-in of an Auxiliary Load while Powering the Main Load. Journal of Electrical Engineering & Technology . 2018 Jul;13(4):1623-30. https://www.dbpia.co.kr/Journal/articleDetail?nodeId=NODE07470248 IF: 0.525	Journal of Electrical Engineering & Technology	International	2018
14	S. Bukhari, M. Ayub , S. Atiq, B. Kwon. A three-phase off-line UPS system for transformer coupled loads. IEICE Electronics Express . 2017;14(20):20170815. https://www.istage.jst.go.jp/article/elex/14/20/14_14.20170815/article IF: 0.344	IEICE Electronics Express	International	2018
15	S. S. H. Bukhari, G. J. Sirewal, M. Ayub and J. Ro, "A New Small-Scale Self-Excited Wound Rotor Synchronous Motor Topology," in IEEE Transactions on Magnetics , doi: 10.1109/TMAG.2020.3009372. https://ieeexplore.ieee.org/document/9141346 IF: 1.848	IEEE Transactions on Magnetics	International	2021
16	A. Roshanzamir, K. -Y. Hwang, S. -H. Lee, J. -W. Kwon, M. Ayub and B. -I. Kwon, "Dual-Mode Brushless Wound Rotor Synchronous Machine for High Starting Torque," in IEEE Access , vol. 10, pp. 41657-41663, 2022, doi: 10.1109/ACCESS.2022.3167886. https://ieeexplore.ieee.org/document/9758692 IF: 3.367	IEEE ACCESS	International	2022
17	Ayub, M. ; Bukhari, S.S.H.; Sirewal, G.J.; Arif, A.; Kwon, B.-I. Utilization of Reluctance Torque for Improvement of the Starting and Average Torques of a Brushless Wound Field Synchronous Machine. <i>Electr. Eng.</i> 2021, 103, 1–7. https://link.springer.com/article/10.1007/s00202-020-01174-5 IF: 1.671	Electrical Engineering Springer	International	2021
18	S. Sin, M. Ayub and B. Kwon, "Operation Method of Non-Salient Permanent Magnet Synchronous Machine for Extended Speed Range," in IEEE Access , doi: 10.1109/ACCESS.2020.3000256. https://ieeexplore.ieee.org/document/9109268 IF: 4.098	IEEE ACCESS	International	2020

Paper Presented

S. No.	Title of Paper	Name of Conference	National/International	Date
1	M. Ayub , H. Chang and B. Kwon, "Design of interior permanent magnet synchronous machine for torque characteristic improvement by increasing reluctance torque and reducing leakage flux," 2017 20th International Conference on Electrical Machines and Systems (ICEMS), Sydney, NSW, 2017, pp. 1-6.	2017 20th International Conference on Electrical Machines and Systems (ICEMS), Sydney, NSW, 2017	International	2018
2	M. Ayub , S. Bukhari, G. Sirewal and B. Kwon, "Brushless Wound Rotor Synchronous Machine With Third Harmonic Field Excitation Using Single Inverter.," 2018 IEEE International Magnetics Conference (INTERMAG), Singapore, 2018, pp. 1-1.	2018 IEEE International Magnetics Conference (INTERMAG), Singapore, 2018	International	2018
3	M. Ayub , A. Hussain, G. Sirewal and B. Kwon, "Brushless Operation of a Wound Field Synchronous Machine using a Novel Scheme", 2018 IEEE Conference on Electromagnetic Field Computation (CEFC 2018), Hangzhou, China.	2018 IEEE Conference on Electromagn	International	2018

		etic Field Computation (CEFC 2018), Hangzhou, China.		
4	M. Ayub , S. Atiq, G. Sirewal and B. Kwon, "Fault-tolerant Operation of Wound Field Synchronous Machine using Winding Switching", 2018 IEEE Conference on Electromagnetic Field Computation (CEFC 2018), Hangzhou, China.	2018 IEEE Conference on Electromagnetic Field Computation (CEFC 2018), Hangzhou, China.	International	2018
5	M. Ayub , and B. Kwon, "Utilization of Reluctance Torque to Improve Starting Torque and Average Torque of a Brushless-Wound Field Synchronous Machine", 2019 IEEE Joint MMM-Intermag Conference, 2019, Washington DC, USA.	2019 IEEE Joint MMM-Intermag Conference, 2019, Washington DC, USA.	International	2019
6	M. Ayub , G. Jawad, and B. Kwon, "Consequent-pole Hybrid Excitation Brushless Wound Field Synchronous Machine with Fractional Slot Concentrated Winding", 2019 IEEE Joint MMM-Intermag Conference, 2019, Washington DC, USA.	2019 IEEE Joint MMM-Intermag Conference, 2019, Washington DC, USA.	International	2019
7	G. Jawad, M. Ayub , and B. Kwon, "Field Current Control of a Brushless Synchronous Machine using Single Inverter Based Sub-Harmonic Field Excitation", 2019 IEEE Joint MMM-Intermag Conference, 2019, Washington DC, USA.	2019 IEEE Joint MMM-Intermag Conference, 2019, Washington DC, USA.	International	2019
8	G. J. Sirewal, M. Ayub and B. Kwon, "A Self-Excitation Scheme for a Brushless Synchronous Generator," 2019 10th International Conference on Power Electronics and ECCE Asia (ICPE 2019 - ECCE Asia), Busan, Korea (South), 2019, pp. 1227-1232.	2019 10th International Conference on Power Electronics and ECCE Asia (ICPE 2019 - ECCE Asia), Busan, Korea (South), 2019	International	2019
9	M. Ayub , Q. Ali, G. J. Sirewal and B. Kwon, "Wide Speed-range Operation of a Dual-mode Wound Field Synchronous Machine," 2019 10th International Conference on Power Electronics and ECCE Asia (ICPE 2019 - ECCE Asia), Busan, Korea (South), 2019, pp. 1233-1238.		International	2019
10	M. Ayub , G. Sirewal, A. Hussain, and B. Kwon, "Wye-delta Stator Winding for Brushless Operation of Wound Field Synchronous	2019 International Symposium	International	2019

	Machine," 2019 International Symposium on Applied Electromagnetics and Mechanics (ISEM) 2019, Nanjing, China. (Excellent Paper Poster Presentation Award)	on Applied Electromagnetics and Mechanics (ISEM) 2019, Nanjing, China.		
11	M. Ayub , G. Sirewal, and B. Kwon, "Reluctance Torque Utilization to Improve the Starting and Average Torques of a Brushless Wound Field Synchronous Machine," 2019 International Symposium on Applied Electromagnetics and Mechanics (ISEM) 2019, Nanjing, China.	2019 International Symposium on Applied Electromagnetics and Mechanics (ISEM) 2019, Nanjing, China.	International	2019
12	G. Sirewal, M. Ayub , and B. Kwon, "Design and Analysis of a PM-assisted Brushless WRSM for Improving Torque Characteristics," 2019 International Symposium on Applied Electromagnetics and Mechanics (ISEM) 2019, Nanjing, China.	2019 International Symposium on Applied Electromagnetics and Mechanics (ISEM) 2019, Nanjing, China.	International	2019
13	G. J. Sirewal, M. Ayub and B. I. Kwon, "Analysis of a Brushless Wound Rotor Synchronous Machine with Additional Stator Harmonic Winding," Eighteenth Biennial IEEE Conference on Electromagnetic Field Computation (CEFC 2018), Hangzhou, China 2018	Eighteenth Biennial IEEE Conference on Electromagnetic Field Computation (CEFC 2018), Hangzhou, China 2018	International	2018
14	G. J. Sirewal, M. Ayub and B. I. Kwon, "Design and Analysis of a PM-assisted Brushless WRSM for Improving Torque Characteristics," Eighteenth Biennial IEEE Conference on Electromagnetic Field Computation (CEFC 2018), Hangzhou, China 2018	Eighteenth Biennial IEEE Conference on Electromagnetic Field Computation (CEFC 2018), Hangzhou, China 2018	International	2018
15	A. Hussain, M. Ayub , T. Yazdan and B. Kwon, "Dual Mode Dual Stator Wound Rotor Synchronous Machine for Variable Speed Applications.," 2018 IEEE International Magnetism Conference (INTERMAG), Singapore, 2018, pp. 1-1, doi: 10.1109/INTMAG.2018.8508493.	2018 IEEE International Magnetism Conference (INTERMAG), Singapore	International	2018

16	Stanislav Sin, Muhammad Ayub , Byung-Il Kwon. (2019). A Novel Winding Changeover Method for Extended Speed Range Operation of Permanent Magnet Synchronous Machine. 대한전기학회 학술대회 논문집, (), 198-200.	Korean Institute of Electrical Engineers conference , South Korea	International	2019
17	Noman Baloch, Muhammad Ayub , Byung-il Kwon. (2019). A Variable Speed Wound Field Vernier Machine. 대한전기학회 학술대회 논문집, (), 867-868.	Korean Institute of Electrical Engineers conference , South Korea	International	2019
18	Muhammad Ayub , Byung-il Kwon. (2016). Optimal Rotor shape design of Interior Permanent Magnet Synchronous Motor for improving Average Torque by Increasing the Reluctance Torque. 대한전기학회 학술대회 논문집, (), 191-193. (Best Written Paper Award)	Korean Institute of Electrical Engineers conference , South Korea	International	2016
19	Muhammad Ayub , Ghulam Jawad, 권병일. (2019). Variable Speed Range Operation of PM-assisted Brushless Wound Field Synchronous Machine. 대한전기학회 학술대회 논문집, (), 865-866.	Korean Institute of Electrical Engineers conference , South Korea	International	2019
20	Muhammad Ayub , Syed Sabir Hussain Bukhari, Ghulam Jawad, Byung-il Kwon. (2017). A Novel Brushless Wound Rotor Synchronous Machine with Third Harmonic Field Excitation. 대한전기학회 학술대회 논문집, (), 871-872.	Korean Institute of Electrical Engineers conference , South Korea	International	2017

Books Authored/ Edited

S. No	Name of book	Publisher	ISBN
-	-	-	-

Work Experience

S. No	From (year)	To (year)	Name of the Institution/ Organization	Position held
1	2008	2010	Pakistan Telecommunication Company Limited	Engineer Supervisor
2	2010	2012	Frequency Allocation Board	Engineer Supervisor
3	2012	2020	BUIITEMS Quetta	Lecturer

4	2020	Till Date	BUIITEMS Quetta	Associate Professor
Area of specialization			Electrical Vehicle and Power Electronics	
Research Interest			Electric Vehicle, Renewables and Power Electronics	
Future Research Plans			Renewables, Power Electronics, Electric Vehicles	
HEC Approved supervisor			Yes	
If Yes, provide HEC URL			https://www.hec.gov.pk/english/scholarshipsgrants/ASA/Pages/APS-EPORTAL.aspx - App ID 87125	
Research grants/ Projects			IGNITE and PEC grants	
Additional Information				
International PATENTS:				
<ol style="list-style-type: none"> 1. Asif Hussain, Muhammad Ayub, and B. -I. Kwon, " Dual Mode Wound Rotor Synchronous Machine for Electric Vehicle Applications," Korean Patent. ID P20180093OP, Registration No. 10-2033854, Date 2019.10.11. 2. Muhammad Ayub, Jawad Sirewal, and B. -I. Kwon, " Fault-tolerant Operation of Wound Field Synchronous Machine using Coil Switching Technique," Korean Patent. ID P20181071OP, Registration No. 10-2224902, Date 2021.03.02. 3. Muhammad Ayub, Jawad Sirewal, and B. -I. Kwon, " Brushless Operation of a Wound Field Synchronous Machine using a Novel Winding Scheme," Korean Patent. 4. Muhammad Ayub, Jawad Sirewal, and B. -I. Kwon, " Brushless Wound Field Synchronous Machine with Third-Harmonic Field Excitation using a Single Inverter," Korean Patent. ID P20210643DP, Registration No. 10-2315932, Date 2021.10.15. ID P20181073OP, Registration No. 10-2188707, Date 2020.12.02 				