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Roystan Castelino

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ABOUT ME

Roystan Castelino is a dedicated researcher and innovator in electrical engineering with a focus on renewable energy and power electronics. Graduating as a top performer in Electrical & Electronics Engineering from Srinivas Institute of Technology, he received recognition for his impactful BTech project, including the prestigious Gandhiyan Young Technological Innovation Award at Rashtrapati Bhavan. He advanced his expertise with a Master's in Power Electronics and Drives from NIT Mizoram, showcasing his innovation in the Texas Instruments challenge and at the Global Exhibition on Services. Castelino then completed his Ph.D. in Electrical Engineering at NITK Surathkal, leading research that produced six patents and numerous publications, along with a significant DST grant to develop a renewable power emulation system.

EDUCATION AND TRAINING

30/07/2018 – CURRENT Mangalore, India

DOCTOR OF PHILOSOPHY National Institute of Technology Karnataka, Surathkal

AddressNITK Surathkal, Mangalore, Karnataka, India, 575025, Mangalore, India | **Website**https://www.nitk.ac.in/ |

Field of study - Electrical and Electronics Engineering | **Final grade**8.31 | **Level in EQF -** EQF level 8 |

National classification Level 10 |

Thesis : Design and Development of Flight Controller for Kite-based Wind Power Generation Systems

15/09/2016 – 30/06/2018 Aizawl, Mizoram, India

MASTER OF TECHNOLOGY National Institute of Technology Mizoram

Websitehttps://www.nitmz.ac.in/ **Level in EQF**EQF level 7

15/09/2011 – 30/07/2015 Mangalore, India

BACHELOR OF TECHNOLOGY Srinivas Institute of Technology Valachil, Mangalore

Websitehttps://www.sitmng.ac.in/ **Level in EQF**EQF level 6

PUBLICATIONS

- Castelino, Roystan Vijay, Yashwant Kashyap, and Panagiotis Kosmopoulos. "Airborne Kite Tether Force Estimation and Experimental Validation Using Analytical and Machine Learning Models for Coastal Regions." Remote Sensing 14, no. 23 (2022): 6111.
- Castelino, Roystan Vijay, Pankaj Kumar, Yashwant Kashyap, Anabalagan Karthikeyan, Manjunatha Sharma K, Debabrata Karmakar, and Panagiotis Kosmopoulos. "Exploring the Potential of Kite-Based Wind Power Generation: An Emulation-Based Approach." Energies 16, no. 13 (2023): 5213.
- Kumar, Pankaj, Yashwant Kashyap, Roystan Vijay Castelino, Anabalagan Karthikeyan, Manjunatha Sharma K, Debabrata Karmakar, and Panagiotis Kosmopoulos. "Laboratory-Scale Airborne Wind Energy Conversion Emulator Using OPAL-RT Real-Time Simulator." Energies 16, no. 19 (2023): 6804.
- Vishnu, Sidharthan P., Yashwant Kashyap, and Roystan Vijay Castelino. "Adaptive intelligent hybrid energy management strategy for electric vehicles." Energy Storage 5, no. 5 (2023): e436.
- Sidharthan Panaparambil, Vishnu, Yashwant Kashyap, and Roystan Vijay Castelino. "A review on hybrid source energy management strategies for electric vehicle." International Journal of Energy Research 45, no. 14 (2021): 19819-19850.

PATENTS

- Dual kite based high altitude wind power generator - Granted Indian Patent with Application No - 20183101785
- Parafoil Kite Controller using Linear Actuator - Granted Indian Patent with Application No - 201831017853
- SYSTEM AND DEVICE FOR SWAPPING BATTERY IN KITE POWER GENERATION - Granted Indian Patent with Application No - 202341029597
- Ground-Based Power Kite Controller - Granted Indian Patent with Application No - 202341017600.
- Dynamic Kite Area-based Take-off and Landing Device for Power Kites - Granted Indian Patent with Application No - 202341014270

PROJECTS

01/01/2022 – CURRENT

Kite-based Wind Power Emulation using Hardware In-Loop (HIL) real-time simulator.

An emulation-based approach for kite-based wind power generation systems. The project involves modelling the dynamics of the kite and emulating the behaviour of the kite using OPAL-RT based Hardware in Loop System. The outcome of this project is a granted patents and a publication. 01/08/2018 – 30/05/2023

Design and Development of 1kW kite- based Wind Power Generation system

The main aim of the project is to design and develop a 1kW kite-based wind power generation systems to identify the potential of the technology in the coastal region of India. The kite behaviour in turbulent wind condition was realised and the control technique was developed to achieve the power generation. The outcome of the project was four granted patents and two publications. 01/08/2017 – 30/05/2018

High Altitude Wind Power Generation system

This was part of my Master's project where I single-handedly developed and tested two-kite based wind power generation systems with axial flux generator which resulted in two granted patents.

HONOURS AND AWARDS

13/03/2016

Ghandhiyan Young Technological Innovation Award – National Innovation Foundation

National Award "Ghandiyan Young Technological Innovation Awards-2016" for the final year B.E project- "High Altitude Wind Energy from Kite- A Revolution in Renewable Power" in the category of "MORE FROM LESS FOR MANY" held at Rashtrapathi Bhavan New Delhi at the hands of Dr. R A Mashelkar, FRS, Chairperson, National Innovation Foundation-India(NIF) **Link** https://gyti.techpedia.in/project-detail/high-altitude-wind-energy-using-kite-a-revolution-in-renewable/6100

15/05/2018

Global Exhibition on Services-2018, Confideration of Indian Insudtries. – GES - 2018

International level exhibition of M.Tech project in 4th Global Exhibition on Services 2018 which was held during 15th – 18th May 2018 at Bombay Exhibition Centre, Mumbai. The kite-based wind power generator got international recognition. **Link** https://embassyofindiadakar.gov.in/mynews.php?nid=102

21/08/2015

Project of the Year Award – IISc Bangalore

Project of the Year award-2015" for my final year B.E project by Karnataka State Council for Science & Technology conducted by IISc Bengaluru. **Link** https://www.kscst.org.in/spp/38_series/38th_Series_Best_Projects.pdf

DIGITAL SKILLS

Python-Programming | Matlab/Simulik | DSpace HIL testing | Embedded coding | C C+ + C programming | Microsoft Office | Microsoft Excel | Microsoft Word | Microsoft Powerpoint | Opal-RT

LANGUAGE SKILLS

Mother tongue(s): **KONKANI**

Other language(s):	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2
HINDI	C2	C2	C2	C2	C2
KANNADA	C2	C2	C2	C2	C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

HOBBIES AND INTERESTS

Repairing Electronic Gadgets, Playing Badminton, 3D printing, Laser Engraving

In my leisure, I involve myself in repairing electronics gadgets, playing badminton, 3D printing and prototyping observed problems around me, I experiment with laser based engraving and cutting of wood and making small hobby designs around the house.