Hari Prasad Rimal

ACADEMIC RESEARCH POSITION

University of Perugia, Italy.

Research Fellow. Year: Jan. 2021-Dec.2021.

Nov. 2019-Oct.2020.

EDUCATION

University of Perugia, Italy.

PhD in industrial and information engineering. Year: 2016-2019

Scientific sector discipline: Elettrotecnica.

Dissertation: Lightning indirect effects in the Avionic Environment: Innovative protection techniques for safety improvement in the avionic transportation systems.

Perugia, Italy.

Tribhuvan University, Institute of Engineering, Nepal

Msc. Electrical Engineering with specialization in power system. Year: 2012-2016

Distinction Division.

Dissertation: Interleaved VSCs for Improved operation of PMSG based Wind energy conversion system.

Tribhuvan University, Institute of Engineering, Nepal

Bachelor in Electrical Engineering. Year: 2007-2011

TEACHING EXPERIENCE

Tribhuvan University, Institute of Engineering, Nepal

- Teaching Assistant at the Department of electrical engineering. Year: 2012-2014
- Lecturer at the Department of electrical engineering. Year: 2016

SOFTWARE SKILLS

- MATLAB/SIMULINK
- PSSE
- EMTP-ATP Draw
- Ansys Maxwell

SOFTWARE SKILLS

- C
- Python

PROFESSIONAL ASSOCIATIONS

- Institute of Electrical and Electronic Engineers (IEEE).
- Nepal Engineers Association (NEA).
- They Need Blood, NGO, Nepal.

SCIENTIFIC REVIEWER

- IEEE Transactions on Industrial Electronics.
- Elsevier and MDPI journals.

CONFERENCE LECTURES

Invited talk on, *Electromagnetic compatibility in aircraft sector: Lightning indirect effects and innovative protection techniques for safety improvement in the air transportation sector.*19th IEEE Mediterranean Electro-technical conference, 2020, Palermo, Italy.

SCIENTIFIC JOURNAL PUBLICATIONS

A. Faba and **H. P. Rimal**, "*Robust Lightning Indirect Effect Protection in Avionic Diagnostics: Combining Inductive Blocking Devices With Metal Oxide Varistors*," in IEEE Transactions on Industrial Electronics, vol. 65, no. 8, pp. 6457-6467, Aug. 2018. doi: 10.1109/TIE.2017.2784376.

H. P. Rimal *et al*., "Protection from Indirect Lightning Effects for Power Converters in Avionic Environment: Modelling and Experimental Validation," in *IEEE Transactions on Industrial Electronics*, doi: 10.1109/TIE.2020.3013794.

H. P. Rimal, S. Q. Antonio, A. Faba and E. Cardelli, "Modeling of Combined Metal Oxide Varistors and Ferrite Core Filters to Augment Avionic Safety During Lightning Transients," in *IEEE Transactions on Electromagnetic Compatibility*, vol. 62, no. 5, pp. 2012-2023, Oct. 2020, doi: 10.1109/TEMC.2020.2980107.

S. Quondam Antonio, A. Faba, **H. P. Rimal** and E. Cardelli, "On the Analysis of the Dynamic Energy Losses in NGO Electrical Steels Under Non-Sinusoidal Polarization Waveforms," in *IEEE Transactions on Magnetics*, vol. 56, no. 4, pp. 1-15, April 2020, Art no. 6300115, doi: 10.1109/TMAG.2019.2959213.

F. Corti, A. Reatti, E. Cardeli, A. Faba and **H. Rimal**, "Improved Spice Simulation of Dynamic Core Losses for Ferrites With Nonuniform Field and Its Experimental Validation," in *IEEE Transactions on Industrial Electronics*, vol. 68, no. 12, pp. 12069-12078, Dec. 2021, doi: 10.1109/TIE.2020.3044783.

Rimal, H. P, Antonio, S. Quondam, et al. "Analytical formulation to estimate the dynamic energy loss in electrical steels: Effectiveness and limitations." *Physica B: Condensed Matter* 579 (2020): 411899.

Rimal, H. P., et al. "Modelling of dynamic losses in soft ferrite cores." *Physica B: Condensed Matter* 579 (2020): 411811.

CONFERENCE PUBLICATIONS

S. Quondam Antonio, F. Riganti Fulginei, **H. P. Rimal** and A. M. Ghanim, "On the Use of Feedforward Neural Networks to Simulate Magnetic Hysteresis in Electrical Steels," *2020 IEEE 20th Mediterranean Electrotechnical Conference (MELECON)*, Palermo, Italy, 2020, pp. 119-124, doi: 10.1109/MELECON48756.2020.9140585.

A. R. M. Ghanim and **H. Rimal**, "Efficient and Robust Modelling of Vector Magnetic Hysteresis: An Engineering Approach, "*2020 IEEE 20th Mediterranean Electro technical Conference (MELECON)*, Palermo, Italy, 2020, pp.114-118, doi: 10.1109/MELECON48756.2020.9140705.

H. P. Rimal, A. M. Ghanim, S. Q. Antonio, A. Faba and E. Cardelli, "Time domain modelling of soft ferrite inductors for power converters applications," *2019 26th IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, Genoa, Italy, 2019, pp. 847-850, doi: 10.1109/ICECS46596.2019.8965083.

A. M. Ghanim, **H. P. Rimal** and F. Cutugno, "Dynamic Losses Prediction in NOG Electrical Steels for Electrical Machines," *2019 IEEE 5th International forum on Research and Technology for Society and Industry (RTSI)*, Florence, Italy, 2019, pp. 415-420, doi: 10.1109/RTSI.2019.8895529.

H. P. Rimal, S. Q. Antonio, A. M. Ghanim and F. Cutugno, "Characterization of Soft Ferrite Cores in Power Electronic Applications," *2019 IEEE 5th International forum on Research and Technology for Society and Industry (RTSI)*, Florence, Italy, 2019, pp. 411-414, doi: 10.1109/RTSI.2019.8895575.

H. P. Rimal, S. Q. Antonio and A. M. Ghanim, "Preisach model identification for the prediction of static hysteresis loops in ferrite cores," *2019 IEEE 5th International forum on Research and Technology for Society and Industry (RTSI)*, Florence, Italy, 2019, pp. 194-197, doi: 10.1109/RTSI.2019.8895564.

G. Ala, **H. P. Rimal** et al., "Design of Soft Ferrite filters for EMI reduction in Power Conversion Systems," *2019 IEEE 5th International forum on Research and Technology for Society and Industry (RTSI)*, Florence, Italy, 2019, pp. 394-399, doi: 10.1109/RTSI.2019.8895566.

H. P. Rimal and A. Faba, "*Lightning indirect effect protection in Avionic Environment*," 2017 IEEE 3rd International Forum on Research and Technologies for Society and Industry (RTSI), Modena, 2017, pp. 1-5. doi: 10.1109/RTSI.2017.8065891.

H. P. Rimal, "*Dynamic Model of Soft Ferrites for Avionic Applications*," 2018 IEEE 4th International Forum on Research and Technology for Society and Industry (RTSI), Palermo, 2018, pp. 1-5. doi: 10.1109/RTSI.2018.8548406.

G. Giglia, G. Ala, L. Mistretta, G. C. Giaconia, S. Q. Antonio and **H. P. Rimal**, "*Design and Assessment of Optimized EMI Filters for Avionic Applications*," 2018 IEEE 4th International Forum on Research and Technology for Society and Industry (RTSI), Palermo, 2018, pp. 1-6.doi: 10.1109/RTSI.2018.8548440.

M. Dionigi and **H. P. Rimal**, "*Shielding Effectiveness and Figure of Merit of Ferrite Shielded Coils*," 2018 IEEE Wireless Power Transfer Conference (WPTC), Montreal, QC, Canada, 2018, pp. 1-4. doi: 10.1109/WPT.2018.8639461.

A. Reatti, F. Corti, S. Q. Antonio and **H. P. Rimal**, "*Design Centering of Wireless Power Transfer Systems for Avionics*," 2018 IEEE 4th International Forum on Research and Technology for Society and Industry (RTSI), Palermo, 2018, pp. 1-6. doi: 10.1109/RTSI.2018.8548436.

S. Q. Antonio and **H. P. Rimal**, "*Power Losses in Ferromagnetic Steel Sheets for Avionic Environment*," 2018 IEEE 4th International Forum on Research and Technology for Society and Industry (RTSI), Palermo, 2018, pp. 1-6. doi: 10.1109/RTSI.2018.8548458.

H. P. Rimal, M. Brenna, N. R. Karki and A. K. Verma, "*Control of PMSG based wind turbines for renewables based DC distribution*," 2015 9th International Conference on Software, Knowledge, Information Management and Applications (SKIMA), Kathmandu, 2015, pp. 1-7. doi: 10.1109/SKIMA.2015.7400042.

PROFESSIONAL FORUM

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REFERENCE

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