

The Future Influence of Artificial Intelligence on Power Electronics and Renewable Energy

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The revolution in Artificial Intelligence is finally beginning to influence the power electronics and renewable energy fields. This talk will discuss its particular impact on areas like: power processing, power converter design, renewable energy operation, microgrids and other emerging application areas. For example: 1) smart PV panels have been built that can self-heal or reconfigure to produce higher power output when shaded or faulted; 2) Weather forecasts that utilize Deep Learning can be incorporated into energy management schedulers for solar photovoltaic microgrids to optimize profits; 3) Power electronic converter design algorithms may become automated in the future using machine learning approaches. However, the computational processing also requires huge demands on the power supply, especially when multiple GPUs are used. All these trends from AI have led to new technologies, problem statements, and control problems for the power electronics industry. These difficulties and opportunities will be discussed.

The poster is a vertical rectangular graphic with a dark purple background. At the top left, it features the IPRECON logo (a stylized wind turbine) and the text 'INTERNATIONAL POWER AND RENEWABLE ENERGY CONFERENCE'. To the right of the logo, the dates 'SEPT 20 21' are displayed in a large, white, sans-serif font. Below the logo and dates, there is a portrait of Dr. Brad Lehman, a man with glasses and a suit. Underneath the portrait, his name 'Dr. Brad Lehman' is written in white, followed by his title: 'Professor, Department of Electrical & Computer Engineering, Northeastern University, Boston'. The main title of the conference, '2021 IEEE International Power and Renewable Energy Conference (IPRECON)', is centered in white text. Below this, a white box contains the text 'KEYNOTE SESSION'. The specific title of the talk, 'The Future Influence of Artificial Intelligence on Power Electronics & Renewable Energy', is written in white below the keynote session box. A white box at the bottom of the talk title section contains the date and time: 'Date : 25th September 2021 | Time : 07:30-08:30 PM (IST)'. Below this, another white box contains the text 'REGISTER AS ATTENDEES' and a URL: 'https://iprecon.org/registration'. At the very bottom of the poster, the text 'COLLEGE OF ENGINEERING KARUNAGAPPALLY' is written in white. Along the bottom edge, there are several logos: CRK, PELS (Power Electronics Society), PES (Power & Energy Society), IAS (Indian Academy of Sciences), and IEEE.

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2021 IEEE International Power and Renewable
Energy Conference (IPRECON)

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