Proposal for Special Session at IEEE CASE 2021

Goal:

Nowadays, the traditional energy sector becomes a very challenging area due to their high environmental impact. This traditional energy brings into question the air pollution causing an increase in the greenhouse effect that causes global warming. In this context, renewable energy takes an important challenge in world market. Indeed, several states grants financial assistance for those wishing to consume their own electricity by renewable energy sources plants such as photovoltaic, wind turbine… . This government incentive with the reduced cost of power generation motivates the renewable energy sources plant stakeholders to establish an optimal integrated maintenance strategy in order to guarantee an eligible service level. In addition to optimal integrated maintenance strategies for maximizing the availability, the renewable energy sources plants suffer from several problems, such as deterioration and degradation due to permanent exposures under adverse weather conditions that affecting the system reliability.

These deficiencies motivate us to embrace new operations management methods to improve the foresight, optimization, and the efficiency of the renewable energy sources. In this session, we welcome all contributions that relate the modeling, management, optimization and algorithmic approaches with application to addressing intelligent manufacturing operational problems, including but not limited to:

- Reliability and maintenance
- spare part management
- Simulation and optimization
- Optimization of energy product-service system
- Intelligent energy production planning and scheduling
- Machine learning for complex intelligent energy production management
- Intelligent logistics of energy system optimization
- Big data analysis for intelligent energy system
- data mining method and a machine learning algorithm

Session Title: A new intelligent approaches of integrated energy production and maintenance strategies under environmental and operational constraints

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Contributions:
1. "An Improved Forecasting Method for Photovoltaic Power Based on Adaptive BP Neural Network with a Scrolling Time Window", by H.Zhu, W.Lian, L.Lu, S.Daiand Y.Hu, Energies 2017, p.10-2342, 2017.

2. "Differential power processing for increased energy production and reliability of photovoltaic systems" by Shenoy, P. S., Kim, K. A., Johnson, B. B., & Krein, P. T. (2013). IEEE Transactions on Power Electronics, 28(6), 2968-2979.
3. "Reliability assessment of photovoltaic power systems: Review of current status and future perspectives", by Zhang, P., Li, W., Li, S., Wang, Y., & Xiao, W. (2013).Applied Energy, 104, 822-833.