



PGER00004 - MICRORREDES

Disciplina: Optativa

Nível: Mestrado e Doutorado.

Número de Créditos: 04 CR (aula teórica)

Carga Horária Total: 60h (Teórica)

EMENTA:

Estados de controle de microrredes: operação conectada à rede elétrica e ilhada.

Modelagem de microrredes: elementos constituintes, MPPT e estratégias de controle.

Simulação de estudos de caso.

BIBLIOGRAFIA:

M. G. Villalva, J. R. Gazoli and E. R. Filho, Comprehensive Approach to Modeling and Simulation of Photovoltaic Arrays, in IEEE Transactions on Power Electronics, vol. 24, no. 5, pp. 1198-1208, May 2009.

M. G. Villalva, J. R. Gazoli and E. R. Filho, Modeling and circuit-based simulation of photovoltaic arrays, 2009 Brazilian Power Electronics Conference, 2009, pp. 1244-1254.

F. Baronti, N. Femia, R. Saletti, C. Visone and W. Zamboni, Hysteresis Modeling in Li-Ion Batteries, in IEEE Transactions on Magnetics, vol. 50, no. 11, pp. 1-4, Nov. 2014, Art no. 7300704.

Guilherme Penha da Silva Junior, Luciano Sales Barros, Camila Mara Vital Barros, Synchronverter coupled to a lithium-ion bank for grid frequency and voltage supports and controlled charge-discharge, Electric Power Systems Research, Volume 197, 2021, 107352, ISSN 0378-7796.

RASHID, M. H. Power Electronics: Devices, Circuits and Applications, [S.l.]: Pearson Education, 2014

Gomes, Camilo C., Allan F. Cupertino, and Heverton A. Pereira. Damping techniques for gridconnected voltage source converters based on LCL filter: An overview, Renewable and Sustainable Energy Reviews 81 (2018): 116-135.

H. Mahmood, D. Michaelson and J. Jiang, Decentralized Power Management of a PV/Battery Hybrid Unit in a Droop-Controlled Islanded Microgrid, in IEEE Transactions on Power Electronics, vol. 30, no. 12, pp. 7215-7229, Dec. 2015.



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J. C. Vasquez, J. M. Guerrero, M. Savaghebi, J. Eloy-Garcia and R. Teodorescu, Modeling, Analysis, and Design of Stationary-ReferenceFrame Droop-Controlled Parallel Three-Phase Voltage Source Inverters, in IEEE Transactions on Industrial Electronics, vol. 60, no. 4, pp. 1271-1280, April 2013.

Y. Karimi, H. Oraee and J. M. Guerrero, Decentralized Method for Load Sharing and Power Management in a Hybrid Single/Three-Phase-Islanded Microgrid Consisting of Hybrid Source PV/Battery Units, in IEEE Transactions on Power Electronics, vol. 32, no. 8, pp. 6135-6144, Aug. 2017.

Barros, Luciano S., and Camila Mara V. Barros. Modificação no controle do lado da rede e geradores eólicos baseados em PMSG para ampliar a suportabilidade a afundamentos de tensão, Eletrônica de Potência 22.2 (2017): 167-178.