

Gheorghe Asachi Technical University of Iași
Faculty of Electrical Engineering
Power Engineering Department
Competition for Associate Professor, position 12, Academic Year 2024-2025
Disciplines: 1. High Voltage Engineering I
2. General Energetics

Competition Topics For the position of Associate Professor

1. High voltage AC Testing installations.
2. Impulse voltage impulse generators. Constructive types and working principles.
3. High voltage measurement techniques.
4. Gas breakdown processes in uniform and non-uniform electrical fields.
5. Discharge processes over insulating surfaces.
6. Propagation of voltage waves through a nodal point with transverse capacitance, respectively with longitudinal inductance.
7. Propagation of voltage waves through a short power line.
8. Overvoltages due to single-phase faults in power systems.
9. Neutral point treatment in medium voltage grids (working principles, particularities, applicability).
10. Criteria for equating primary energy quantities.
11. The nuclear power reactor. Neutron flux evolution in a nuclear power reactor.
12. Dynamic operating regime of a nuclear power reactor. Burning of nuclear fuel.
13. Photoelectric conversion of solar energy (photoelectric effect, types of cells, electrical parameters of the photovoltaic cell, influence of external factors).
14. Thermal conversion of solar energy (principles, types of solar collectors, applicability).
15. Wind parameters. Electrical parameters of wind turbines.
16. Wind turbines positioning.
17. Hydropower resources development.
18. Power system – structure and operating principles.
19. Electric energy storage – direct and indirect methods.

Bibliografie

1. G. Drăgan, Tehnica Tensiunilor Înalte, vol I, Editura Tehnică București, 1996.
2. G. Drăgan, Tehnica Tensiunilor Înalte, vol II, Editura Academiei Române, 2001;
3. Gușă M., Istrate M., Gavrițaș N., Asaftei C., Tehnica Tensiunilor Înalte – Supratensiuni în sistemele electroenergetice, Editura Fundației Culturale “Renașterea Română”, Iași, 1997.
4. W. Hauschild, E. Lemke, High-Voltage Test and Measuring Techniques, Springer, 2014.
5. D. Xiao, Gas Discharge and Gas Insulation, Springer, 2016.
6. D. Cristescu, R. Olah, Supratensiuni și izolația rețelelor electrice, Ed. Didactică și Pedagogică, 1983.

7. T. Horvath, B. Mathe, E. Nemeth, V. Stanciu, Încercarea izolației electrice, Editura Tehnica, București, 1982.
8. N. Gologanov, H. Albert, Ș. Gheorghe, Surse regenerabile de energie electrică în sistemul electroenergetic, Editura AGIR, București, 2015.
9. C. Asaftei, Producerea energiei electrice și termice – Volumul 1, Editura PIM, Iași, 2011.
10. C. Asaftei, Producerea energiei în centrale nucleare electrice, Editura Setis, Iași 2007.
11. B. Viswanathan, Energy sources – Fundamentals of Chemical Processes and Applications, Elsevier, 2016.
12. I. Olah, C. Pal, L. Mastacan și C. Dosoftei, Procese și instalații energetice nepoluante, Iași: Editura Politehnicum, 2009.
13. W. Hu, Advanced Wind Turbines Technology, Springer, 2019.
14. P. Breeze, HydroPower, Academic Press, 2018.
15. T. Letcher, Storing Energy - with Special Reference to Renewable Energy Sources, 2nd Edition, Elsevier, 2022.
16. M. Balan, „Energii regenerabile,” Editura UT Pres, Cluj-Napoca, 2007.

Dean,

Prof., Ph.D Dorin Lucache

Head of Department,

Prof., Ph.D. Marcel Istrate