

**“GHEORGHE ASACHI” TECHNICAL UNIVERSITY OF IAȘI**

**Faculty of Electrical Engineering**

**Department of Electrical Engineering**

**Competition** for the position of **Associated Professor, no. 6** from the List of Department Positions

**Disciplines:** *Special issues of electrical machines*

*Testing of electrical machines*

**TOPICS OF COMPETITION**

for the position of associated professor

1. Windings of direct current machines, armature reaction, commutation, possibility of improvement.
2. Design features of induction machines, two-phase and three-phase windings, with shortened pitch, with fractional  $q$ , windings designed for changing the number of poles pairs.
3. Permanent magnet and hybrid synchronous motors, synchronous motor speed control, with and without position sensors.
4. Common tests of electric machines: measurement of winding resistances; power and power factor measurements.
5. Direct current machine: Study of commutation and placement of brushes in the neutral axis.
6. Synchronous machine: Study of no load and rated load for the synchronous machine.
7. Experimental validation of the angular position of the rotor for synchronous machine.
8. Determining the operating characteristics by indirect methods at the asynchronous machine.
9. The asynchronous motor: Study of no-load, short-circuit and nominal load operation.
10. Short-circuit testing and short-circuit stability of transformers.

**Bibliography:**

- Boldea, I. – *Transformatoare și mașini electrice*, Ed. Politehnica Timișoara, 2001.
- Bălă, C. – *Mașini electrice*, Ed. Did. și Ped., București, 1979.
- Simion Al. - – *Mașini electrice, vol. I, Transformatoare electrice*, Editura Gh. Asachi Iași, ISBN 973-8050-27-8, 2000.
- Simion Al. – *Mașini electrice, vol. II, Mașina sincronă*, Editura Gh. Asachi Iași, ISBN 973-621-015-4, 2003.

- Simion Al. – *Mașini electrice, vol. III, Mașina asincronă*, Editura PIM Iași, ISBN 978-606-13-0988-7, 2012.
- Electrical Machines, Second Edition, Ion Boldea and Lucian N. Tutelea, Published by CRC Press, 2031, ISBN: 0367375656
- Cojan M., Simion Al., Livadaru L. – *Încercările mașinilor electrice*, Editura Top Lux, ISBN 973-87859-4-4, Iași, 2006.
- Oulton, Leonard, *Practical Testing Of Electrical Machines*, Published by Legare Street Press, 2023, ISBN 10: 1022405861 / ISBN 13: 9781022405868
- Design and Testing of Electrical Machines, M.V. Deshpande, Published by Asoke, K. Ghosh, New Delhi, 2010, ISBN-978-81-203-3645-2
- Câmpeanu, A., Iancu, V., Rădulescu, M. M. – *Mașini în acționări electrice*, Ed. Scrisul românesc, Craiova, 1996.

Dean,

Prof.univ.dr.ing. Dorin-Dumitru Lucache

Head of Department,

Prof.univ.dr.ing. Cristian-Győző HABA