



C.P. 16 – 162, 062510 – BUCURESTI  
tel. 021.4113617, fax 021.4114280  
e-mail: [office@matrixrom.ro](mailto:office@matrixrom.ro), [www.matrixrom.ro](http://www.matrixrom.ro)

## **ADVANCED ELECTRIC CIRCUITS – SELECTED TOPICS –**

### Chapter 1. LINEAR ELECTRIC CIRCUITS IN NON-SINUSOIDAL (DISTORTED) PERIODIC STATE

- 1.1 Introduction
- 1.2 Periodic functions
- 1.3 Specific parameters
- 1.4 Powers in non-sinusoidal steady state
- 1.5 Ideal circuit elements in non-sinusoidal state
- 1.6 Solving single-phase electrical circuits in a periodic non sinusoidal steady state
- 1.7 Solved problems
- 1.8 Proposed problems

### Chapter 2. LINEAR ELECTRIC CIRCUITS IN TRANSIENT STATE

- 2.1 Basic aspects – Kirchhoff's theorems for electric circuits in general variable state
- 2.2 Ideal circuit elements in variable state
- 2.3 Transient state characterization of the electric circuit
- 2.4 Elementary method for transient state analysis
- 2.5 Transient state computation based on Laplace transform
- 2.6 The algorithm of the operational method for solving transient state circuits
- 2.7 The study of the transient state by separation of the permanent state component
- 2.8 Transient state problems computation – direct method
- 2.9 Problems solved by the operational Laplace transform method
- 2.10 Transient state computation – proposed problems

### Chapter 3. REFERENCES