Laboratory report

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| Subject of the exercise: | Electrical power measurement (Exercise 4) |
| **Date:** | <year>. <month>. <day> |
| **Students name:** | <name 1>  <name 2>  <name 3> |
| **Course and group No.** | Course: <Course No>, <Group No.> |
| **Supervisors:** | <name 1>, <name 2> |
| **Desk No.:** |  |

Applied instruments

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| Digital oscilloscope | Agilent 54622A | < serial number > |
| Digital multimeter (6½ digit) | Agilent 33401A | < serial number > |
| Function generator | Agilent 33220A | < serial number > |
| Electronic power meter | Hameg HM8115 | < serial number > |
| Adjustable AC supply | Metrel MA-4804 | < serial number > |
| Hall-probe current meter | Hameg HZ-56 | < serial number > |
| Resistor decade | IET Labs RCS500 | < serial number > |
| Transformer | VIK-01-03 | < serial number > |

Figure 4-1. The R-L-C network used in the measurement

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A

B

a

b

c

d

e

**f**

**L**

**R**

**C**

Measurement Tasks

1. Use of a Hall-probe current meter

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1. Measurement of different power quantities of the R-L-C net excited by sinusoidal voltage

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1. Measurement of different power quantities of the R-L-C net excited by general periodic voltage

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1. Measurement of different power quantities of the R-L-C net excited by an AC power supply

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1. measurement by electronic power meter

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1. measurement by oscilloscope

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1. Measurement of different power quantities of light sources excited by the mains

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1. halogen lamp or traditional filament lamp

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1. compact fluorescent lamp or LED lamp

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1. Measurement of the distortion factor of the mains and the crest factor of the current

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1. Error analysis

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*Optional measurement task:*

1. Measurement of different power quantities of a personal computer

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