Set-up for electrical, photoelectrical, Hall effect and magnetoresistance characterizations of semiconductor nanostructured materials

Acurate measurements are performed:

- (photo)current – voltage characteristics at different temperatures (10-500K);
- current – temperature characteristics at different voltages (-1000 ÷ +1000V);
- spectral dependence of photocurrent;
- capacitance – voltage characteristics;
- Hall measurements at different magnetic fields and temperatures (4 – 300K);
- current–voltage characteristics at different magnetic fields and temperatures (4–300K);

(1) Set-up for electrical transport and photoelectrical measurements: cryostat (10K – 500K); electrometer 6517A (1fA - 20mA; 10 μV – 200 V; 50 Ω – 1 0^{16} Ω; source 0V ± 1000V); Keithley 2000 multimeter; monochromator, (250 nm–3000 nm); light source (450 – 1000 W); chopper SR 540 (6-4000 Hz); duble lock-in SR 830 (1mHz – 102,4 kHz; sensibilitate 2nV – 1 V); Keithley 8009 resistivity test fixture; Temperature controller 331; Vacuum equipment (10^{-6} torr); RLC (2Hz – 20MHz; 40V); LabView 8.5

(2) Set-up for Hall effect and magnetoresistance measurements: Janis magnetic criostat (4K – 300K); LakeShore electromagnet EM4-HVA (2,5 T) with power supply 642 (0 -70A) and temperature controller 331S; Chiller (2200 W, 5 – 40 ^{0}C); source E3631A (0 ± 25 V, 5 A); multimeter 34401A; Vacuum equipment (10^{-6} torr).