

Research Unit:

Institute of Physics " Ioan Ursu", Faculty of Physics

Research center in Condensed Matter Physics and Advanced Materials

Thin Films Laboratory

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EQUIPMENTS

1) System for thin films deposition by magnetron sputtering

The complex installation (Kurt Lesker, Varian, Advanced Energy and Maxtech INC), for synthesis of thin films working in DC and AC magnetron sputtering regimes , by using 3 sources (magnetrons)

He realizes the controle of:

- substrate temperature ,
- sputtering power,
- pressure of the sputtering gas,
- deposition rate and the thickness of the film.

Usage and applications: - Thin films deposition on different substrates (ceramics, single crystals,metals) by using DC and RF magnetron sputtering system;

Offers for foreign users :

Thin films layers deposition.

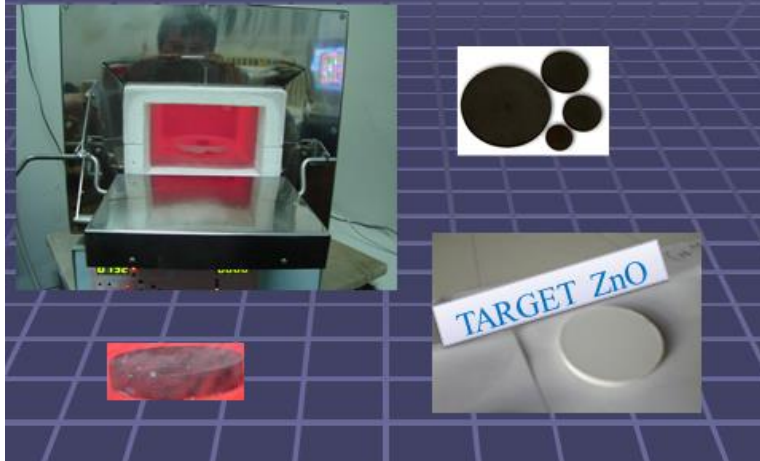
2) System for electrical resistivity measurement in the temperature range 10-300K

3) Programmable heater by controllable atmosphere for target synthesis and thermal treatments

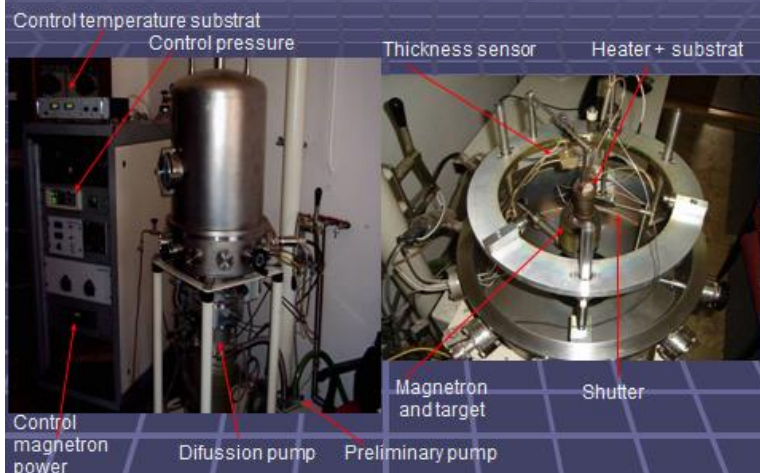


ACTIVITIES:

1) Synthesis of targets from HTS superconductor oxides and Zn oxide (ZnO doped with Al, Ga and rare earth)



2)-DEPOSITION OF THIN FILMS BY MAGNETRON SPUTTERING (DC or RF) (HTS superconductors and ZnO doped with Al and Ga)



3. Transport measurements

- System for measurement of electrical resistance vs. Temperature (with non cryogenic liquid)
- System to control the carrier concentration in HTS compounds by the control of oxygen concentration

	CCS-350
Temperature range	10 K - 325 K
Initial cooling time	~1 hr. to 10 K
Cooling time after initial cooling time (300 K to 10 K)	30 min.
Cooling power	~2 watts to 20 K
Mass of system	100 Kg.
Mass of cryo-system	9 Kg
Optic window	2.5 cm diameter