LOW PRESSURE CHEMICAL VAPOR DEPOSITION (LPCVD)
(Polycrystalline Silicon Reactor)

MODEL: TEMPRESS

INSTALLATION PLACE: Cleanroom of "Nanotechnology and Microsystems Laboratory", Department of Microelectronics

DESCRIPTION: LPCVD refers to a thermal process used to produce chemical precursors needed to form a semiconductor-grade film on a substrate under low-pressure condition. Deposition of film growth in a LPCVD process can be controlled precisely and accurately. LPCVD is an indispensable element in the semiconductor industry.

SPECIFICATIONS
1. One horizontal LPCVD quartz tube for polysilicon deposition (furnace A2)
2. Deposition Parameters:
   i) Source Gas: silane SiH_4 with flux 10 – 50 sccm
   ii) Temperature range: 580 – 610 ºC
   iii) Deposition Pressure: 230 – 300 mTorr
   iv) Deposition rate: 20 – 54 Å/min
3. Substrates: Si and other semiconductors, SiO_2, Si_3N_4 and other insulators, quartz
4. Sample size: 3" / 4" wafer and smaller samples
5. Vacuum System: For vacuum ~15 mTorr:
   i) Booster pump (Booster WAU 251-Leybold), ii) Mechanical oil pump (Leybold D65 BCS)

APPLICATIONS
1. Gate electrode and local interconnects in CMOS technology
2. Integrated Si resistors
3. Thin-Film-Transistors (TFT)
4. Deposition of Amorphous silicon
5. Photovoltaic applications

CERTIFICATION/ACCREDITATION
The facility is not certified or accredited.

CONTACT: services@imel.demokritos.gr