

SEMICONDUCTOR DEVICES AREA_System Information

<p>SYSTEM ID: AS1-Plasma Asher MEMS DIVISION NAME: SDA/MEMS INSTALLATION YEAR: 2008 EQUIPMENT MANUFACTURER: Diener, Germany Equipment Incharge: Dr. Ankush Jain Mr. Dhirendra Kumar PROCESS CAPABILITIES: Ashing of positive resist, SU8 stripping</p>
<p>SYSTEM ID: AS2-Plasma Asher SNTG DIVISION NAME: SDA/SNTG INSTALLATION YEAR: 1986 EQUIPMENT MANUFACTURER : Dry Tek Equipment Incharge: Arvind Kumar Singh Arvind Kumar Singh PROCESS CAPABILITIES: Photoresist trace removal using oxygen plasma</p>
<p>SYSTEM ID: AS3-Plasma Cleaner DIVISION NAME: SDA/SNTG INSTALLATION YEAR: Mar 2016 (Installation) EQUIPMENT MANUFACTURER : M/s Glow Research, USA Equipment Incharge: Pankaj B. Agarwal Prateek Kothari PROCESS CAPABILITIES: System is capable to clean DPN probes and micro-wells and for functionalization of CNTs.</p>
<p>SYSTEM ID: BS1-Align Bonder(MEMS) DIVISION NAME: SDA/MEMS INSTALLATION YEAR: 2005 EQUIPMENT MANUFACTURER : EVG Equipment Incharge: Aditi/R Mukhiya Dhirendra/Supriyo PROCESS CAPABILITIES: Wafer Bonding</p>
<p>SYSTEM ID: BS2-Die-Bonder(HMG) DIVISION NAME: SDA/HMG INSTALLATION YEAR: May 2015 EQUIPMENT MANUFACTURER : Tresky Equipment Incharge: Dr. Nikhil Suri Mr. B.S. Jangir PROCESS CAPABILITIES: Die bonder system for chip attachment (typical planar device size \geq 2mm x 2 mm)</p>

SYSTEM ID: BS3-Wire Bond(HMG)
DIVISION NAME: SDA/HMG
INSTALLATION YEAR: July 2015
EQUIPMENT MANUFACTURER :Hybond
Equipment Incharge: Dr. Nikhil Suri
Mr. B.S. Jangir

PROCESS CAPABILITIES:
Wire bonding system for providing electrical interconnects to chip (typical device-bond pad size $\geq 100\mu\text{m}$)

SYSTEM ID: BS4-Wire Bond(MEMS)
DIVISION NAME: SDA/MEMS
INSTALLATION YEAR:
EQUIPMENT MANUFACTURER :West Bond,USA
Equipment Incharge: Dr. Ankush Jain
Mr. Prashant Kumar

PROCESS CAPABILITIES:
Ball to wedge gold wire bonding

SYSTEM ID: BS5-Wire Bond(ODG)
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: Nov 1995
EQUIPMENT MANUFACTURER :West Bond,USA
Equipment Incharge: Ashok Chauhan
Pawan Kumar

PROCESS CAPABILITIES:
Tool is capable to wedge to wedge bonding chip to package

SYSTEM ID: DS1-Dicing Machine (DFD 6450)
DIVISION NAME: SDA/MEMS
INSTALLATION YEAR: Nov. 2006
EQUIPMENT MANUFACTURER: DISCO Corporation, Japan
Equipment Incharge: Dr. MAHANTH PRASAD
Mr. Gajander Singh Meena

PROCESS CAPABILITIES:
Dual Spindle dicing machine is used for cutting the Si and Glass wafers of different sizes. The machine also has the capability to cut the bonded silicon-glass wafer and other materials such as thin (up to 1.0 mm) alumina. The details description are given as follows:

- 1. Sample/Wafer Size: 1 to 6 Inch.**
- 2. Sample Shape : Circle or Square or any other**
- 3. Cutting Materials: Silicon up to 700 μm , Glass up to 1.0 mm, glass-silicon bonded wafer up to 1.7 mm only**
- 4. Sample thickness: maximum 700 μm for Silicon & 1.0 mm for Glass**
- 5. Chip Size: minimum 3X3 mm²**
- 6. Scribe line: minimum 300 μm for Si & 500 μm for Glass**
- 7. Surface Protection : Surface protection by Positive Photo-resist up to 3.0 μm -thick or depending on user**
- 8. Process Time: One working day for one sample**

SYSTEM ID: DS2-Dicing Machine (DAD 321)
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: March 1998
EQUIPMENT MANUFACTURER :Disco Dicing
Equipment Incharge: Ashok Chauhan
Pawan Kumar, Priyavart Parjapat
PROCESS CAPABILITIES:
System is capable to dice the fabricated chips and substrate. Material: Si, Al₂O₃, Sapphire, Quartz etc

SYSTEM ID: DS3-Laser Dicing Machine
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR: March 2015
EQUIPMENT MANUFACTURER :SLTL Gandihnagar
Equipment Incharge: Dr. J. Akhtar
Surajit Das
PROCESS CAPABILITIES:
Dicing of Si and glass wafers

SYSTEM ID: ES1- Reactive Ion Etching (RIE-Annelva)
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR: 1986
EQUIPMENT MANUFACTURER :Annelva Corporation Japan
Equipment Incharge: Arvind Kumar Singh
Arvind Kumar Singh, Vishwas Saini
PROCESS CAPABILITIES:
For poly silicon and silicon dioxide ,silicon nitride etching using CF₄, SF₆ chemistry

SYSTEM ID: ES2-Deep Reactive Ion Etching (DRIE)
DIVISION NAME: SDA/MEMS
INSTALLATION YEAR: 2007
EQUIPMENT MANUFACTURER :Alcatel
Equipment Incharge: S. Santosh Kumar
Dhirendra Kumar
PROCESS CAPABILITIES:
To create high-aspect ratio structure in silicon

SYSTEM ID: ES3-Reactive Ion Etching (RIE-Nitride)
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: Oct 2004
EQUIPMENT MANUFACTURER :Sentech, Germany
Equipment Incharge: Manish Mathew
Bhupendra Kushawaha
PROCESS CAPABILITIES:
System is capable to etch the thin layer of GaN and GaAs based compound material

SYSTEM ID: ES4-Reactive Ion Etching (RIE-STS)
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR: 1996
EQUIPMENT MANUFACTURER :STS UK
Equipment Incharge: Arvind Kumar Singh
Arvind Kumar Singh, Ramakant Sharma
PROCESS CAPABILITIES:
For poly silicon and silicon dioxide ,silicon nitride etching using CF4, SF6 chemistry

SYSTEM ID: EVS1-Electron Beam Evaporation -VST-ODG
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: May 2011
EQUIPMENT MANUFACTURER: VST, Israel
Equipment Incharge: Ashok chauhan
Pawan Kumar
PROCESS CAPABILITIES:
Metallization system used for deposition of different metal layers. System is capable to deposit the thin layers of following metals: Al, Ni, Ti,Au, Pt,Ag,Pd etc.

SYSTEM ID: EVS2-Electron Beam Evaporation -Varian (ODG)
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: 1981
EQUIPMENT MANUFACTURER :Varian Inc Italy
Equipment Incharge: Kuldip Singh
Priyavart Parjapat
PROCESS CAPABILITIES:
Deposition of noble metal

SYSTEM ID: EVS3-Electron Beam Evaporation(SNTG)
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR: 1981
EQUIPMENT MANUFACTURER :Varian, Italy
Equipment Incharge: Dr J. Akhtar / Sanjeev Kumar
No technical person
PROCESS CAPABILITIES:
Ti/Au, Polysilicon, Ni, Ti/Pt/Au , Cr/Au are done routinely basis , LRF generated for users from outside

SYSTEM ID: SDS1-Al Sputtering System (MEMS)
DIVISION NAME: SDA/MEMS
INSTALLATION YEAR:1996
EQUIPMENT MANUFACTURER: Assembled
Equipment Incharge: Mahesh
Gajendra
PROCESS CAPABILITIES:
Aluminum sputtering

SYSTEM ID:SDS2-Reactive Co-Sputtering System (MEMS)

DIVISION NAME: SDA/MEMS

INSTALLATION YEAR: 2012

EQUIPMENT MANUFACTURER :VST Israel

Equipment Incharge: Aditi

Dhirendra

PROCESS CAPABILITIES:

Metal Oxide and Nitride

SYSTEM ID: SDS3-Reactive Co-Sputtering System (SNTG)

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: December, 2010

EQUIPMENT MANUFACTURER :VST Israel

Equipment Incharge: Arvind Singh/ Dr Jitendra Singh

Anrvind Singh and One SPF (Jitu)

PROCESS CAPABILITIES:

Magnetic Thin film and their nano composites (Fe-Ni, Co-Zr)

SYSTEM ID: SDS4-RF Magnetron Sputtering System

DIVISION NAME: SDA/ODG

INSTALLATION YEAR: July 1999

EQUIPMENT MANUFACTURER :Eletrorrava, Italy

Equipment Incharge: Kuldip Singh

Pawan Kumar

PROCESS CAPABILITIES:

System is capable to deposit the Al₂O₃, Si .

SYSTEM ID: SDS5-Sputtering System (Noble metal sputtering TFSP-840)

DIVISION NAME: SDA/MEMS

INSTALLATION YEAR: July, 2013

EQUIPMENT MANUFACTURER :VST, Israel

Equipment Incharge: Dr. Ankush Jain

Mr. Dhirendra Kumar

PROCESS CAPABILITIES:

Sputter deposition of Ti, Cr, Au, Pt, Ag

SYSTEM ID: SDS6-ZnO Sputtering System

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: Sept 2014

EQUIPMENT MANUFACTURER :HHV Bangalore

Equipment Incharge: Jitendra Singh

Deepak Panwar

PROCESS CAPABILITIES:

Deposition ZnO thin films up to ~3um thickness

SYSTEM ID: SDS7-MRC Sputtering System (MODEL SEM- 8620J)

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: 18th June 1979

EQUIPMENT MANUFACTURER :Materials Research Corporation, Orangeburg New York U.S.A

Equipment Incharge: Rajendra. S Shekhawat
no other technical person associated with

PROCESS CAPABILITIES:

RF sputtering unit three, 5" targets, 6" anode(common), Equipment is widely used to deposit kind of Metals/Alloys/Dielectrics High-K materials for no of projects and have process capabilities to deposit micron and nano size films.

SYSTEM ID: CD1-PECVD (ODG)

DIVISION NAME: SDA/ODG

INSTALLATION YEAR: Oct 2005

EQUIPMENT MANUFACTURER :STS UK

Equipment Incharge: Ashok Chauhan
Priyavart Parjapat

PROCESS CAPABILITIES:

System used for thick silicon dioxide film over silicon. This system is ideal for lightwave applications. Core and cladding layer for waveguides can be fabricated

SYSTEM ID: CD2-PECVD_NB(SNTG)

DIVISION NAME:SDA/SNTG

INSTALLATION YEAR: 1992

EQUIPMENT MANUFACTURER :PlasmaLab

Equipment Incharge: Dr K J Rangra
Prateek Kothari

PROCESS CAPABILITIES:

Low temperature Deposition of Silicon Nitride and Silicon Oxide Film.

SYSTEM ID: CD3-PECVD_MB(SNTG)

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: Sep 2013 (Installation)

EQUIPMENT MANUFACTURER :M/s Protoflex, USA

Equipment Incharge: Dr. Anil Kumar and Pankaj B. Agarwal
Prateek Kothari

PROCESS CAPABILITIES:

Plasma enhanced chemical vapour deposition system for deposition of a-Si thin films for photovoltaic applications.

Note: System was operated using RSEB power supply, but was shut down due to fluctuations. Requirement of UPS was requested but could not be provided due to overload of existing 160 KVA UPS (with opto-electronics devices group). The old UPS of 40 KVA was also explored for repair but could not be materialized. The funds for new UPS are likely to be released by CSIR as re-phased amount. However system can be run if supply is provided from existing UPS.

SYSTEM ID: CD4-LPCVD_NB(SNTG)
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR: 1984
EQUIPMENT MANUFACTURER :Thermco
Equipment Incharge: Dr K J Rangra
Prateek Kothari
PROCESS CAPABILITIES:
Deposition of Silicon Nitride and Polysilicon film

SYSTEM ID: CD5-LPCVD (MEMS)
DIVISION NAME: SDA/MEMS
INSTALLATION YEAR: 2004
EQUIPMENT MANUFACTURER :SEMCO
Equipment Incharge: Mahesh/R Mukhiya
/Prashant
PROCESS CAPABILITIES:
Polysilicon and Silicon Nitride

SYSTEM ID: CD6-APCVD_NB(SNTG)
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR:1984
EQUIPMENT MANUFACTURER :EGS
Equipment Incharge: Dr K J Rangra
Prateek Kothari
PROCESS CAPABILITIES:
Deposition of Doped and Undoped Silicon oxide.

SYSTEM ID: CD7-MOCVD(ODG)
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: March 2007
EQUIPMENT MANUFACTURER :Thomas Swan, UK(Aixtron)
Equipment Incharge: Dr. Manish Mathew,Sonachand Adhikari
Priyavart Parjapat, Bhupendra Kushawaha
PROCESS CAPABILITIES:
MOCVD system is capable to growth the GaN,AlGaN,InGaN material on Sapphire for LED fabrication

SYSTEM ID: DF1-Oxidation diffusion_NB(SNTG)
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR: 1978
EQUIPMENT MANUFACTURER :Thermco
Equipment Incharge: Dr K J Rangra
Banwari Lal
PROCESS CAPABILITIES:
Oxidation, Annealing, Sintering and diffusion (Boron and Phosphorus) of silicon wafer upto 2 inch diameter.

SYSTEM ID: DF2-Oxidation_NB(SNTG)

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: 1985

EQUIPMENT MANUFACTURER :Thermco

Equipment Incharge: Dr K J Rangra

Banwari Lal

PROCESS CAPABILITIES:

Dry And Wet Oxidation of up-to 3 inch silicon wafer.

SYSTEM ID: DF3-Oxidation diffusion_MB(SNTG)

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: To be find

EQUIPMENT MANUFACTURER :Thermco

Equipment Incharge: Dr. J. Akhtar

Gopal Singh Negi

PROCESS CAPABILITIES:

Thermal oxidation, B diffusion, P diffusion upto 4" wafers

SYSTEM ID: DF4-Oxidation diffusion(MEMS)

DIVISION NAME: SDA/MEMS

INSTALLATION YEAR:FEB' 2005

EQUIPMENT MANUFACTURER:M/S SANDVIK THERMAL INC., USA.

Equipment Incharge:

Ajay Agarwal

PROCESS CAPABILITIES:

THERMAL OXIDATION, PHOSPHOROUS DIFFUSION, METAL SINTERING

SYSTEM ID: MA1-Mask Aligner (ODG)

DIVISION NAME: SDA/ODG

INSTALLATION YEAR: Jan 1981

EQUIPMENT MANUFACTURER :Karl Suss

Equipment Incharge: Kuldip Singh, Sonachand Adhikari

Priyavart Parjapat

PROCESS CAPABILITIES:

System is capable to expose the 3 Inch wafer

SYSTEM ID: MA2-Mask Aligner (SNTG)

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: September, 2011

EQUIPMENT MANUFACTURER :Suess Microtech Germany

Equipment Incharge: Deepak Panwar/Sanjeev Kumar

Deepak Panwar

PROCESS CAPABILITIES:

TSA + BSA alignment up to 4" diameter wafer and NIL attachment

SYSTEM ID: MA3-Mask Aligner (MEMS)
DIVISION NAME: SDA/MEMS
INSTALLATION YEAR: 2004
EQUIPMENT MANUFACTURER :SUSS Microtec
Equipment Incharge: Dr. Ankush Jain
Mr. Supriyo Das
PROCESS CAPABILITIES:
Photolithography upto 6" wafers

SYSTEM ID: ODG1-LAPPING & POLISHING
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: March 2009
EQUIPMENT MANUFACTURER :Engis Corporation Ltd., USA
Equipment Incharge: Ashok Chauhan
Bhupendra Kushwaha
PROCESS CAPABILITIES:
Lapping Machine is capable to thinning and polishing of sapphire wafer.

SYSTEM ID: ODG2-Rapid Thermal Annealing (RTA)
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: Oct 2009
EQUIPMENT MANUFACTURER :Anneal Sys ,France
Equipment Incharge: Kuldip Singh,Manish Mathew
None
PROCESS CAPABILITIES:
System is capable to fast anneal the GaN based sample. maximum temp is 1100 degree Celsius

SYSTEM ID: ODG3-Laser Lift Off
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: January, 2015
EQUIPMENT MANUFACTURER :Optec S A, Belgium
Equipment Incharge: Suchandan Pal, Sonachand Adhikari
Priyavart Parjapat
PROCESS CAPABILITIES:
Removal of sapphire substrate from GaN/InGaN grown epiwafers

SYSTEM ID: SNTG1-Critical Point Drier
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR: June 2012
EQUIPMENT MANUFACTURER :TOUSIMIS Research Corporation, USA
Equipment Incharge: Dr. K J Rangra
Maninder Kaur
PROCESS CAPABILITIES:
CPD is used for the wet release of SDA/MEMS suspended devices

SYSTEM ID: SNTG2-Dip PEN Nanowriter

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: Jan 2007 (Installation)

EQUIPMENT MANUFACTURER :M/s Nanolnk, USA

Equipment Incharge: Pankaj B. Agarwal and Dr. Anil Kumar
Nil

PROCESS CAPABILITIES:

-Writing of nano-features of 16-MHA on gold substrate for various biosensors applications

-Patterning of sub-um size features of gold for nano-electronics and photonics applications

SYSTEM ID: SNTG3-MASK Making

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: December 2003

EQUIPMENT MANUFACTURER :M/s Heidelberg Instruments Germany

Equipment Incharge: Ashok Kumar Gupta
B.C Pathak, Arvind Kumar Singh, Ramakant Sharma

PROCESS CAPABILITIES:

Resolve dimension up to 1 micron and can expose plate area from 3" X 3" to 8" x 8".

SYSTEM ID: SNTG4-Ion Implantation

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: OCTOBER 1988,

EQUIPMENT MANUFACTURER :EATON Semiconductor Equipment Corp U.S.A.

Equipment Incharge: B C Pathak (Operational Responsibility)
Ramakant Sharma

PROCESS CAPABILITIES:

Doping of the Semiconductor. Energy: 20 - 200 KeV, Dose: 10E11 - 10E16,

Dopants: Boron,Phosphorous,Nitrogen,Argon,Silicon.

SYSTEM ID: HMG1-Via-Punching system 6

DIVISION NAME: SDA/HMG

INSTALLATION YEAR: June 2010

EQUIPMENT MANUFACTURER:PTC

Equipment Incharge: Mr. D.K. Kharbanda / Dr. P.K. Khanna
Mr. B.S. Jangir

PROCESS CAPABILITIES:

Via-punching of preconditioned and slitted LTCC tapes

SYSTEM ID: HMG2-Via-filler

DIVISION NAME: SDA/HMG

INSTALLATION YEAR: June 2010

EQUIPMENT MANUFACTURER:PTC

Equipment Incharge:Dr. Nikhil Suri
Mr. Sunil Kumar/ Mr. I.C. Sharma

PROCESS CAPABILITIES:

Via-filling of preconditioned, slitted and punched LTCC tapes

SYSTEM ID: HMG3-LTCC Screen Printer
DIVISION NAME: SDA/HMG
INSTALLATION YEAR: Aug. 1999
EQUIPMENT MANUFACTURER :Presco
Equipment Incharge: Dr. Nikhil Suri
Mr. I.C. Sharma

PROCESS CAPABILITIES:
Screen printing of preconditioned, processed LTCC tapes

SYSTEM ID: HMG4-Isostatic Laminator
DIVISION NAME: SDA/HMG
INSTALLATION YEAR: Aug. 2004
EQUIPMENT MANUFACTURER :PTC
Equipment Incharge: Mr. D.K. Kharbanda/ Dr. P.K. Khanna
Mr. B.S. Jangir

PROCESS CAPABILITIES:
Isostaic lamination of processed and stacked LTCC tapes with registration marks

SYSTEM ID: HMG5-LTCC Box Furnace
DIVISION NAME: SDA/HMG
INSTALLATION YEAR: Oct. 2010
EQUIPMENT MANUFACTURER:ATV
Equipment Incharge: Mr. D.K. Kharbanda
Mr. Sunil Kumar

PROCESS CAPABILITIES:
Co-firing of processed and laminated LTCC tapes

SYSTEM ID: HMG6-Laser micromachining system
DIVISION NAME: SDA/HMG
INSTALLATION YEAR: Dec. 2001
EQUIPMENT MANUFACTURER:U.S. Laser
Equipment Incharge: Mr. D.K. Kharbanda
Mr. Sunil Kumar

PROCESS CAPABILITIES:
Laser micromachining of thick film patterned substrate

CHARACTERIZATION EQUIPMENT:

SYSTEM ID: ICDG1-AWG with Logic Analyzer
DIVISION NAME: SDA/ICDG
INSTALLATION YEAR: 05/03/2012
EQUIPMENT MANUFACTURER :Agilent
Equipment Incharge: M Santosh
M Santosh

PROCESS CAPABILITIES:
LCR Measurment with current source.
Different attachments for SMD & Through hole devices.

SYSTEM ID: ICDG2-DSO with Digitizer
DIVISION NAME: SDA/ICDG
INSTALLATION YEAR: 26/08/2011
EQUIPMENT MANUFACTURER :Agilent
Equipment Incharge: M Santosh
M Santosh
PROCESS CAPABILITIES:
DSO
Analog channel - 4
Digital channel - optional
Bandwidth - 600 MHz

SYSTEM ID: ICDG3-LCR Meter
DIVISION NAME: SDA/ICDG
INSTALLATION YEAR: 26/08/2011
EQUIPMENT MANUFACTURER :Agilent
Equipment Incharge: M Santosh
M Santosh
PROCESS CAPABILITIES:
AWG -
Channel - 2
Fully Differential
Bandwidth - 150 MHz

SYSTEM ID: ICDG4-Spectrum Analyzer
DIVISION NAME: SDA/ICDG
INSTALLATION YEAR: 26/08/2010
EQUIPMENT MANUFACTURER :Agilent
Equipment Incharge: M Santosh
M Santosh
PROCESS CAPABILITIES:
Preamplifier - Yes
Bandwidth - 20 Hz to 3.6 GHz

SYSTEM ID: MEMS1- Micro system analyzer MSA-500
DIVISION NAME: SDA/MEMS
INSTALLATION YEAR: 2014
EQUIPMENT MANUFACTURER :Polytec, Germany
Equipment Incharge: Dr. Ankush Jain; Mrs. Aditi
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PROCESS CAPABILITIES:
Dynamic characterization of SDA/MEMS devices

SYSTEM ID: MEMS2-DEKTAK 6M Surface Profiler

DIVISION NAME: SDA/MEMS

INSTALLATION YEAR: 2006

EQUIPMENT MANUFACTURER :VEECO

Equipment Incharge: Dr. MAHANTH PRASAD

Mr. Gajander Singh Meena

PROCESS CAPABILITIES:

The Dektak 6M is an advanced thin and thick film step height measurement tool capable of measuring steps height. The tool can also be used for measuring surface roughness.

The details equipment capabilities are given as follows:

1. Minimum Sample Size: 1x1cm² or 1cm diameter
2. Minimum Feature size /Step width: 50 μm
3. Thickness Range: 100 Å to 1 mm
4. Process Time: 30 Min/5 points measurement.
5. Maximum sample thickness: 31.75 mm (1.25")

SYSTEM ID: MEMS3-Film Stress Measurement System

DIVISION NAME: SDA/MEMS

INSTALLATION YEAR: February, 2012

EQUIPMENT MANUFACTURER :FSM Frontier Semiconductor, USA

Equipment Incharge: Ranjan Kumar Maurya

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PROCESS CAPABILITIES:

Stress measurement of a thin film

SYSTEM ID: MEMS4-IV-CV Characterization System

DIVISION NAME: SDA/MEMS

INSTALLATION YEAR: April,2012

EQUIPMENT MANUFACTURER :Cascade (USA) + Keithley (USA)

Equipment Incharge: Rahul Prajesh

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PROCESS CAPABILITIES:

IV-CV measurements

SYSTEM ID: MEMS5-Zeta 3D Profiler

DIVISION NAME: SDA/MEMS

INSTALLATION YEAR: -

EQUIPMENT MANUFACTURER :Zeta Instruments, USA

Equipment Incharge: Rahul Prajesh

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PROCESS CAPABILITIES:

2D-3D imaging of SDA/MEMS structures, Thin film thickness measurement, Step measurement

SYSTEM ID: MEMS6-Acoustic Imager
DIVISION NAME: SDA/MEMS
INSTALLATION YEAR: 2007
EQUIPMENT MANUFACTURER : Sonix
Equipment Incharge: R Mukhiya/Aditi
Gajendra

PROCESS CAPABILITIES:
Acoustic Imaging

SYSTEM ID: ODG1-Photoluminescence Mapping System (PL)
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: Nov 2005
EQUIPMENT MANUFACTURER : ACCENT Corporation , USA
Equipment Incharge: Dr. Manish Mathew, Sonachand Adhikari
None

PROCESS CAPABILITIES:
PL system used the optical mapping of the wafers. System is intended for direct band gap semiconductor due Laser power limitation.

SYSTEM ID: ODG2-Prism Coupler
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: Apr 2004
EQUIPMENT MANUFACTURER : Metricon USA
Equipment Incharge: Dr. Chenna Dhanavantri
None

PROCESS CAPABILITIES:
System used for measurement of refractive index and thickness of silicon dioxide, silicon nitride etc.

SYSTEM ID: ODG3-Hall Effect Measurement System
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: Dec 2012
EQUIPMENT MANUFACTURER : Nano metrics, USA
Equipment Incharge: Sonchand Adhikari, Sumitra Singh
None

PROCESS CAPABILITIES:
System determine the type semiconductor and also measures the mobility of electrons and holes in semiconductor

SYSTEM ID: ODG4-Step Height Measurement System
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: July 2003
EQUIPMENT MANUFACTURER: Ambios Technology Inc., USA
Equipment Incharge: Manish Mathew, Ashok Chauhan
None

PROCESS CAPABILITIES:
Step measurement. max. step height 100micron

<p>SYSTEM ID: ODG5-Solar Simulator DIVISION NAME: SDA/ODG INSTALLATION YEAR: November, 2014 EQUIPMENT MANUFACTURER :Sciencetech Inc., Canada Equipment Incharge: Sonachand Adhikari None PROCESS CAPABILITIES: Measurement of solar cell I-V characteristics under AM 1.5G 1SUN</p>
<p>SYSTEM ID: ODG6-Intelligent Test System DIVISION NAME: SDA/ODG INSTALLATION YEAR: March 2004 EQUIPMENT MANUFACTURER : Exfo Optical Engineering, Canada Equipment Incharge: Ashok Chauhan None PROCESS CAPABILITIES: System is able to characterize the optical splitter and multiplexer</p>
<p>SYSTEM ID: ODG7-Thermal Imaging Microscope DIVISION NAME: SDA/ODG INSTALLATION YEAR: March 2009 EQUIPMENT MANUFACTURER :Opto Therm Inc, USA Equipment Incharge: Kuldip Singh Bhupendra Kushawaha PROCESS CAPABILITIES: System is capable to measure the temperature distribution across the chip</p>
<p>SYSTEM ID: ODG8-Probe Station with EL Spectra DIVISION NAME: SDA/ODG INSTALLATION YEAR: Dec 2014 EQUIPMENT MANUFACTURER :Ecopia Korea Equipment Incharge: Kuldip Singh None PROCESS CAPABILITIES: IV and EL Spectra</p>
<p>SYSTEM ID: ODG9-Helium Leak Detector DIVISION NAME: SDA/ODG INSTALLATION YEAR: July 2013 EQUIPMENT MANUFACTURER :Agilent (Former Varian) Equipment Incharge: Ashok Chauhan Priyavart Parjapat PROCESS CAPABILITIES: Portable helium leak detector system from Agilent VDS-30 used for leak detection in vacuum system</p>

SYSTEM ID: ODG10-LED Characterization System
DIVISION NAME: SDA/ODG
INSTALLATION YEAR: October, 2010
EQUIPMENT MANUFACTURER: Labsphere Inc., USA
Equipment Incharge: Suchandan Pal, Sumitra Singh
None

PROCESS CAPABILITIES:
Optical spectral characterization of packaged LEDs (visible)

SYSTEM ID: SNTG1-DC Probe Station
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR: November 2013
EQUIPMENT MANUFACTURER :Cascade Microtech
Equipment Incharge: Dr. K J Rangra
Mr. Deepak Bansal, Dr. Maninder Kaur, Mr. Prem Kumar

PROCESS CAPABILITIES:
Is used for DC measurements of the devices (I-V)

SYSTEM ID: SNTG2-Scanning Electron Microscope with EDS
DIVISION NAME: SDA/SNTG
INSTALLATION YEAR: January 2009
EQUIPMENT MANUFACTURER :JEOL Japan
Equipment Incharge: Dr. K J Rangra
Maninder Kaur, Prem Kumar

PROCESS CAPABILITIES:
SEM is used for the topographical analysis and surface measurements of the samples by magnifying the image. JEOL SEM can magnify upto 3 lakh times. Standard samples can be measured with a minimum resolution of 2.5 nm. An attachment with SEM, called as EDS is used to detect the composition of the sample.

SYSTEM ID: SNTG3-Low level IV/CV Measurement System
DIVISION NAME:SDA/SNTG
INSTALLATION YEAR: Sep 2008
EQUIPMENT MANUFACTURER: M/s Keithley, USA and M/s Suss Microtek, Germany
Equipment Incharge: Dr. Anil Kumar and Pankaj B. Agarwal
Surajit Das

PROCESS CAPABILITIES:
Current-voltage and capacitance-voltage measurements of 2 and 3 terminal semiconductor devices at wafer level at -40 to 200 degree Celsius.
Current range: 1pA to 1 A
Voltage range: 200 mV to 200 V
Capacitance range:10 fF-20 nF

SYSTEM ID: SNTG4-Single Wavelength Ellipsometer

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: 12/09/2006

EQUIPMENT MANUFACTURER :Santech

Equipment Incharge: Dr K J Rangra

Prateek Kothari

PROCESS CAPABILITIES:

Measuring thin dielectric film Thickness.

SYSTEM ID: SNTG5-Four Point Probe

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: 27/07/2012

EQUIPMENT MANUFACTURER :Signatone

Equipment Incharge: Dr K J Rangra

Prateek Kothari

PROCESS CAPABILITIES:

For Measuring sheet resistance of thin film.

SYSTEM ID: SNTG6-Vibrating Sample Magnetometer

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: Oct 2011

EQUIPMENT MANUFACTURER :MicroSense, USA

Equipment Incharge: Jitendra Singh

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PROCESS CAPABILITIES:

M-H Hysteresis Loop, Permeability, Magneto-resistance

SYSTEM ID: SNTG7-Nanospec 6100

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: 01-09-2010

EQUIPMENT MANUFACTURER :Nanometrics

Equipment Incharge: Deepak Bansal

Vishwas Saini

PROCESS CAPABILITIES:

Optical thin film thickness measurement system for transparent materials

SYSTEM ID: SNTG8-FTIR

DIVISION NAME: SDA/SNTG

INSTALLATION YEAR: 10/06/2008

EQUIPMENT MANUFACTURER :Bruker Optik

Equipment Incharge: Dr K J Rangra

Prateek Kothari

PROCESS CAPABILITIES:

to obtain IR spectra of thin film onto silicon substrate.