

Agenda

Fundamentals of Vacuum Technology 3-day Course

February 18-20, 2020

Day 1

08:15- Breakfast
09:00

- 09:00- 10:20
- Welcome address and introduction
 - Fundamentals of vacuum physics Part 1: Gases and vacuum defined

10:20- Coffee Break
10:40

- 10:40- 12:00
- Ice and bell/balloon marshmallow experiments
 - Definition and explanation of the terms: Quantity of Gas, Gas GFlow (Throughput)

12:00- Lunch Break
13:15

- 13:15- 17:00
- Fundamentals of vacuum physics Part 2
 - Definition and explanation of the terms: Pumping Speed, Conductance, Effective Pumping Speed, Gas flow in rough, medium and high-vacuum, Chamber pump down
 - PASCAL simulations
 - Conductance experiment

Coffee Break in between

Day 2

08:15- Breakfast
09:00

- 09:00- 12:00
- Wet vacuum pumps
 - Dry vacuum pumps and systems
 - Pump videos and animations
 - PASCAL simulations
 - Chamber pump down experiment (with flow)

Coffee Break in between

12:00- Lunch Break
13:15

- 13:15- 16:30
- Roots Blowers
 - Turbomolecular pumps
 - Coffee break in between
 - Cryo and Diffusion pumps
 - Pumpdown with turbo experiment

Coffee Break in between

16:30- Q&A
17:00

Day 3

08:15- Breakfast
09:00

- 09:00- 12:00
- Fundamentals of total pressure measurement (Gauges)
 - Leaks and leak detection

Coffee Break in between

12:00- Lunch Break
13:15

- 13:15- 14:35
- Operation of leak detector (demo in lab)

14:35- Coffee Break
15:00

- 15:15- 17:00
- Leak detection in vacuum systems
 - Pressure Rise Method, Response Time, Chamber Design
 - Test leaks
 - Time for questions and summary