

Training Basics & design principles for ultra-clean vacuum

This training starts on: 11-06-2019

Location: Eindhoven
Price: 1.995,00 euro excl. VAT
Duration: 4 consecutive days
Contact: training@hightechinstitute.nl, +31 85 401 3600

Overview

Since vacuum is unknown in daily life, no reference framework exists for those who are not involved in this technique. To acquire the necessary level of understanding the trainees will be introduced to the basic principles of vacuum technique as well as in the required design principles to achieve ultra-clean vacuum conditions.

Key issue is to become aware of the fact that the whole chain of design, machining, cleaning and the assembly of the components is an integrated process which is as strong as the weakest link in the production chain.

Intended for

The course is meant for employees of BSc and higher levels who are responsible for the design of components to be implemented in ultra-clean vacuum systems.

Objective

During the course the trainees will acquire an understanding of the basic principles of ultra-clean vacuum and its implications for the production of ultra-clean vacuum systems.

Programme

Day 1

- Introduction
- Basic principles
- Interaction of gases with Surfaces (adsorption, desorption)
- Flow of gases (viscous, molecular & intermediate regime)
- Selected exercises
- Dry backing vacuum pumps and molecular pumps
- Total pressure measurement
- Partial pressure measurement (residual gas analysis)

Day 2

Part 1: Vacuum as a engineering aspect

- Vacuum fundamentals
- Pumping speed
- Gas loads
- Materials
- Joining techniques
- Vacuum seals

Part 2: Mechatronic systems in a vacuum environment

- Heat transfer
- Tribology

Information is subject to change. Please contact High Tech Institute for the latest course information and time schedule.

Partner

Certified by

Euspen

Certification

This course is certified by the European society for precision engineering & nanotechnology (euspen) and the Dutch Society for Precision Engineering (DSPE) and leads to the ECP2-certificate.

Course leader

Dr. Adrian Rankers

Teachers

MSc Dick van Langeveld
BSc Theo Mulder
Mark Meuwese
David Schijve
MSc Sven Pekelder

Timetable

11-06-2019 | 09:00 - 17:00
12-06-2019 | 09:00 - 17:00
13-06-2019 | 09:00 - 17:00
14-06-2019 | 09:00 - 17:00

- Feedtroughs
- Activators
- Dynamics
- Electronics/Sensors
- Adhesives
- Vacuum budgetting
- Tips & tricks

Day 3

- Cases of construction in vacuum
- Cases in design for UCV

Day 4

- Cleaning, work discipline
- Leak testing
- Exercises & seminar on questions students

Methods

Lectures, selected exercises & calculations, workshop.