



Course Level	<i>Intermediate</i>
Course Outline	<i>Designed for Maintenance Engineers, Process Engineers and Lab Technicians</i>
Course Prerequisites	<i>Knowledge of vacuum and plasma technology. Mecha-tronic, electrical or electronic qualification</i>
Course Length	<i>3 days</i>
Location	<i>Yatton training facility or where appropriate at the customer site</i>

Course Overview

- The course is designed to be informal and informative and is conducted in a relaxed manner
- When compatible machines are available there will be opportunity for hands-on practical learning
- CAD drawings and simulations will be used to explore the mechanical build and disassembly
- Training presentations will be provided on a USB memory at the end of the course
- Each attendee will receive a printed training certificate
- The course content is adapted to the needs and experience of those attending but will usually include the elements listed in the agenda

Typical Course Agenda

Day 1

1. **Introductions**
2. **Health and safety working on and around the tool**
3. **Plasma etching and deposition**
4. **System overview and examination of internal components:**
 - AC and DC Internal Power distribution and Control
 - EMO, Interlocks and EN13849
 - X20 PLC
 - RF Generators + AMU (Theory and practical)
 - Pressure Control and Gas Delivery
 - Vacuum gauges
 - Chamber and Table heating control
 - Wafer handling, clamping and set up
 - Electrical Schematics

Day 2

1. **Review learning to date and revisit subjects for clarification**
2. **Tool maintenance:**
 - Benchmarking tool performance prior to the PM
 - Using process and system logs to establish performance trends
 - Mechanical disassembly:
 - Walk through of the main system components using CAD drawings of the customer's machine and photographic slides of a recent PM
 - When possible, some work on the development tool installed within the applications laboratory at OIPT may be possible
 - Carry out full system PM on the 100 PECVD training room tool. This will include:
 - Strip down and removal of the Electrode, Showerhead and AMU assemblies
 - This will be carried out under close supervision of the trainer but with ample opportunity for the trainee(s) to participate as they desire

Day 3

1. **Review learning to date and revisit subjects for clarification**
2. **Tool Maintenance:**
 - Complete training tool PM-re-commission and test (*practical*)
 - Faultfinding and diagnostics (*theory and practical*)
 - Typical faults, troubleshooting process related problems
 - Review learning and conclude course