## OXFORD 80+ PECVD

**Troubleshooting Guide**

The following guide is to help users quickly diagnose ICP problems. Detailed information may be found in the SOP. If you are uncertain of any procedure listed, please contact a Shared Research Facilities staff member before attempting.

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<th>PROBLEM</th>
<th>ACTIONS</th>
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| The system is OFF. | • To start the system, press the main power button in the center, front panel. The turn on pump 1 and pump 2 in order.  
• *If the system will not start, close all gas bottles and contact a Shared Facilities staff member to restart the system.* |
| The software is closed or the software is logged out. | • Open the PC Plus software program and select “Installation Engineer” |
| The gas bottle pressure is low and needs to be changed. | • *Do not attempt to change any gas bottle.* Improper handling of the PECVD gas bottles may result in injury or fire. *If a gas bottle is empty and needs to be changed contact a Shared Facilities staff member.* |
| The chamber pressure will not pump below 0.2 mTorr. | • Check the pressure controller and verify that the throttle valve is operating correctly.  
• ABORT the process and vent to atmospheric pressure. Clean the system and o-ring.  
• Restart the pump down procedure.  
• *If problem persists, notify a Shared Facilities staff member.* |
| The Reflective Power for either the RIE or ICP is greater than the setpoint±5% | • A high reflected power indicates that the auto matching network is not tuned properly. A poorly tuned network may generate plasma, but material may not be deposited on the substrate.  
• ABORT the process and contact a Shared Facilities staff member so that the matching network can be re-tuned. |
| The chamber will not open | • Turn the switch to the closed position and turn back to the open position to reset the switch. |
| The chamber will not close | • Turn the switch to the open position and turn back to the closed position to reset the switch. |
| A Silane “Gas Out Tolerance Warning” appears on the screen. | • Wait 30 seconds to see if the flow is increasing. If it is, clear the warning.  
• Verify that there is sufficient pressure at the gas bottle.  
• Check that the compressed air is above 85 psi. If it is below 85 psi, contact a Shared Facilities staff member. |
<table>
<thead>
<tr>
<th>Situation</th>
<th>Steps</th>
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| An Ammonia “Gas Out of Tolerance Warning” appears on screen.             | - Wait 30 seconds to see if the flow is increasing. If it is, clear the warning.  
- Make sure that the gas bottle is open.                                     
- Verify that there is sufficient pressure at the gas bottle.                 
- Check that the compressed air is above 85 psi. If it is below 85 psi, contact a Shared Facilities staff member. |
| A Nitrous Oxide “Gas Out of Tolerance Warning” appears on screen.         | - Wait 30 seconds to see if the flow is increasing. If it is, clear the warning.  
- Make sure the gas bottle is open and the outlet valve is open.             
- Verify that there is sufficient pressure at the gas bottle.                 
- Notify a Shared Facilities staff member.                                    |
| The system hangs up, and will not reach the base pressure.               | - Check the pressure controller and verify that the throttle valve is operating correctly.  
- ABORT and restart process.                                                
- If problem persists, notify a Shared Facilities staff member.               |