

SC-1

The SC-1 from Swiss Cluster represents the next generation in materials fabrication, being the first to combine Atomic Layer Deposition (ALD) and Physical Vapour Deposition (PVD) in a compact and modular equipment.

This patent-pending innovative vertical chamber arrangement forgoes the need for transfer arms and antechambers, avoiding the pitfalls that make the traditional cluster equipment having a large footprint with high acquisition and operating costs.

The chambers are divided by a gate valve that is closed when performing ALD and opens to perform a PVD process without the need to move the substrate or ever breaking vacuum.

The SC-1 can fabricate a number of multilayers of multiple material systems from the PVD and ALD/CVD materials library. Both hardware and software are designed to be completely modular, making it easy to configure, service, and upgrade.

All these features combined with our flexible machine control and recipe creation software suite gives you complete control over the system and its automation.

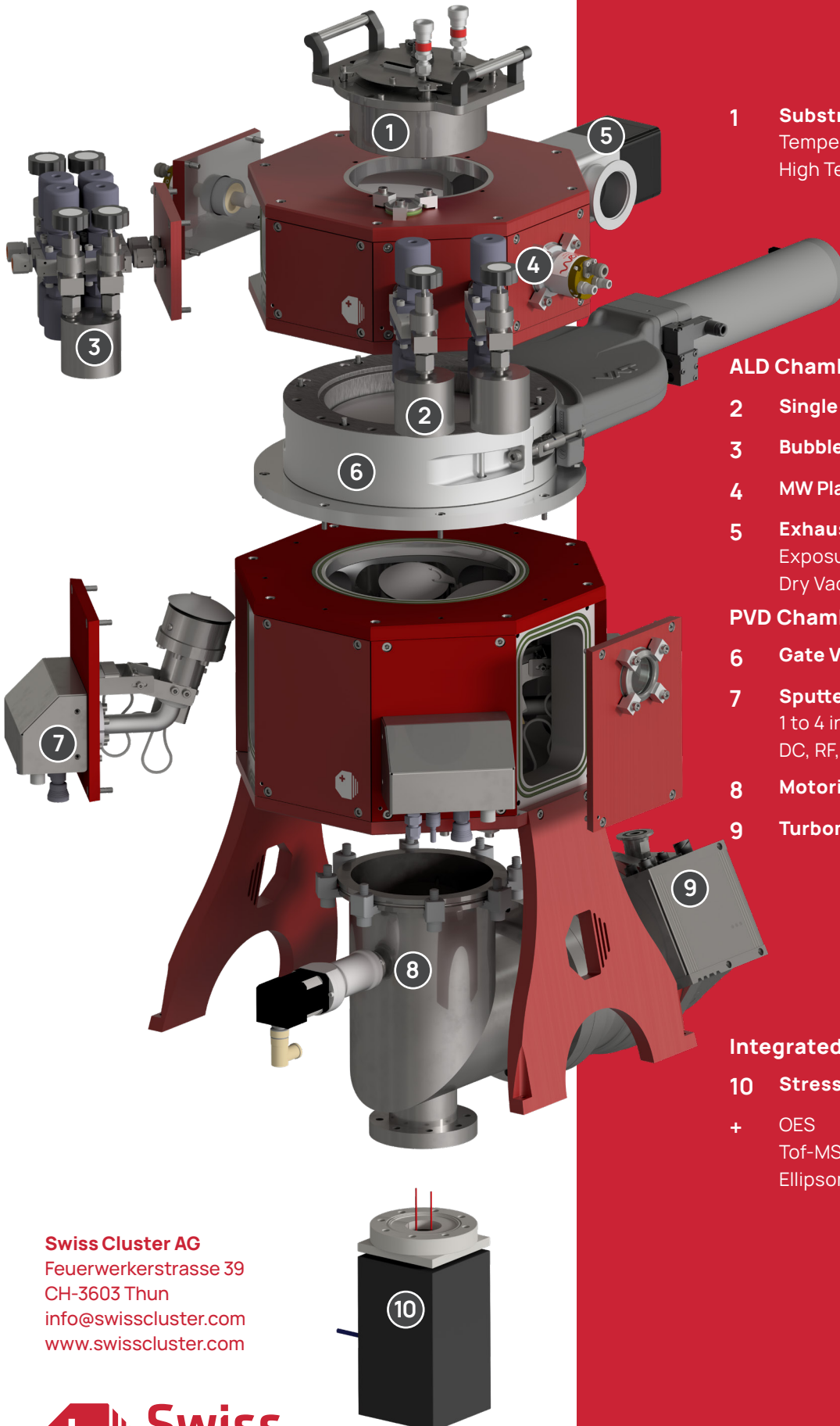
The SC-1 is a materials factory exploiting the benefits of both ALD and PVD.

Technical Specifications

Substrate Holders Sizes and Temperatures	4 to 8 inch wafers Temperature Gradient Stage (30°C to 450°C, and 400°C homogenous) High Temperature (max. 900°C) Rotational and z-stages with bias
Loading	Loading from the top via interchangeable substrate holders Custom-made frame holders for 3D parts Cleanroom and Glovebox compatible
ALD Precursors	Up to 500°C
Precursors	Up to 8 gas sources with 6 individual inlets Ozone option Microwave plasma sources for PE-ALD
PVD Sputtering Sources	1 to 4 inch targets Different power supplies: DC, RF, HiPIMS
Standard Materials	Single layers and multilayers of: Al ₂ O ₃ , ZnO, SiO ₂ , TiO ₂ , Y ₂ O ₃ , ZrO ₂ , HfO ₂ , Cu, Al, Ti, Mg, Nb, Li, and more...



SC-1 Series



- 1 Substrate Holders**
Temperature Gradient Stage
High Temperature Rotational Stage

ALD Chamber

- 2 Single Heated/Unheated Lines**
- 3 Bubbler Heated Lines**
- 4 MW Plasma Option (PE-ALD)**
- 5 Exhaust Lines**
Exposure and Butterfly Valves
Dry Vacuum Pump

PVD Chamber

- 6 Gate Valve**
- 7 Sputtering Sources**
1 to 4 inch targets
DC, RF, HiPIMS
- 8 Motorized Throttle Valve**
- 9 Turbomolecular Pump**

Integrated In Situ Tools

- 10 Stress Measurements**
- + OES
- + Tof-MS
- + Ellipsometer

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