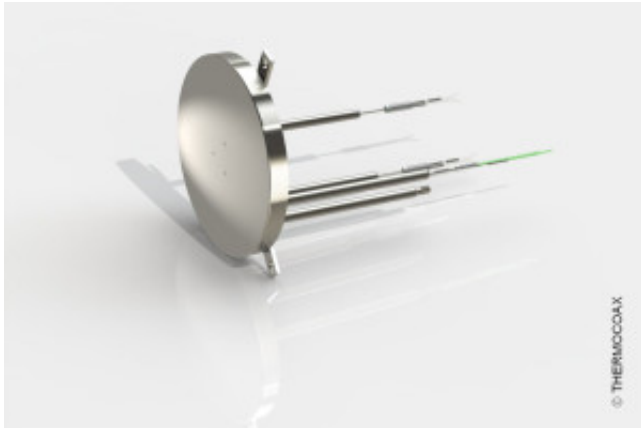


Thermal chucks and pedestals for ALD deposition processes

Thermal chucks for front-end wafer processes have demanding specifications and require constant improvement and innovation.



We are working closely with our OEM customers on improving our thermal chuck specifications to reduce the manufacturing deposition cycle time, to increase the yield in wafer production, and to be able to work with new precursors.

Temperature uniformity across the surface of the chuck is always our first priority when we design a new chuck.

To achieve the uniformity our customers want, we custom design the chucks, from the heating cable to the plate material.

We are able to do this because we design and manufacture our own Mineral Insulated Cables inhouse. We adapt the internal structure of the cables to ensure the best quality when it comes to the finished product's temperature uniformity, while conforming to the maximum temperature restrictions, with multiple heating zones.

The temperature control on the surface of the chuck is important for the process. We use fast response time thermocouples on different areas of the plate. At the prototyping phase, we use more precise solutions to guarantee the temperature is uniform across the surface of the chuck and to control the gradient between the different heating zones.

Detailed thermal analysis is used for ensuring temperature uniformity across the wafer.

The transfer of heat between the chuck and the wafer affects the temperature uniformity and the wafer's temperature requirements.

We offer several texturing solutions that improve this parameter.

The mechanical support is also important, including the design of the plate and the material used.

Our in-house high precision machining capabilities are a real asset at the prototyping phase and then for high-volume manufacturing.

Specific heat treatments and coatings can be used to meet high expectations and demanding specifications from our customers.

Our thermal chucks are used in ultra high vacuum and corrosive environments. The choice of the material and the welding process used for the encapsulation plates and for fixing the mineral insulated cable to the plate is essential.

The material means it requires to be cleaned less frequently on manufacturing . The welding process guarantees that there is no outgassing of the material in the deposition chamber.

FROM PROTOTYPING TO HIGH-VOLUME MANUFACTURING



We design and manufacture the chucks in-house and control the dimensions with high-performing tridimensional CMM control facilities.



THERMOCOAX metal chucks are available in stainless steel, Inconel or a special alloy offering **high dimensional stability**.

- diameters of up to 450mm (18").
- up to 7 state of the art separate heating zones
- Maximum temperatures of up to 900°C.

The temperature of each heating zone is controlled independently.

We meet the requirements of the SEMICON market in terms of repeatability, temperature uniformity, production control, quality monitoring and COPY EXACT for high-volume manufacturing.

We adapt the feedthrough by offering customised bushings and flanges.

The following are also optional:

- A cooling channel
- A gas line
- Vacuum wafer sucking
- Anti-slice grooving

THERMOCOAX is constantly striving to improve **in the following areas:**

- **Design**
- **Manufacturing process**
- **Cost reduction**

We are highly adaptable to customers' specific requests

THERMOCOAX has a full-scale presence in the US and supplies ASIA directly.