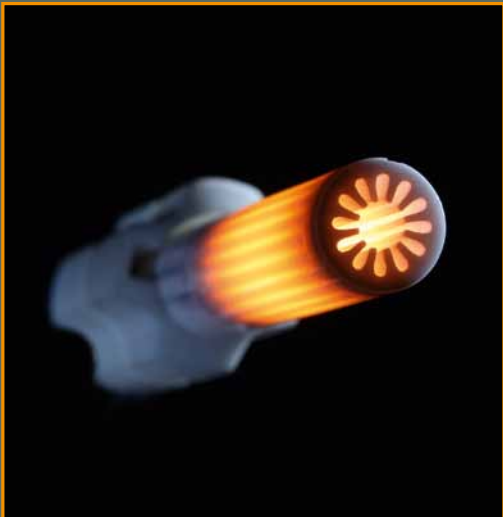




GLOWING EFFICIENCY: HIGH-TEMPERATURE HEATING ELEMENTS (HTH)

Our ceramic heating elements consist of Al_2O_3 insulation ceramics with an integrated platinum conductor, and reach a permanent operating temperature of between 1000 and 1100°C.

They are deployed in the following areas:

- Heating applications above 750°C, in which standard heating cartridges would have long since failed
- Very precise, rapid heating due to the extremely low thermal mass
- Efficient hot gas generation through the extremely large heat transfer surface area

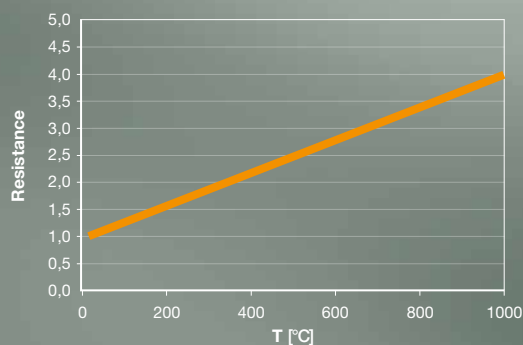
Our heater portfolio covers a broad performance spectrum (depending on the desired purpose) and various patented structural forms. In addition to this the heating elements can be designed on an individual customer basis and be equipped with a complete electrical connection technology.

Concrete applications:

- Hot surface igniters (ignition of gas, oil, biomass, pellets)
- Hot air generation
- Tool heating
- Melting/welding/soldering/hot gas soldering
- Heaters for chemical analysis and laboratory equipment (e.g. mini-furnaces, reactors)
- Customer-specific heating solutions

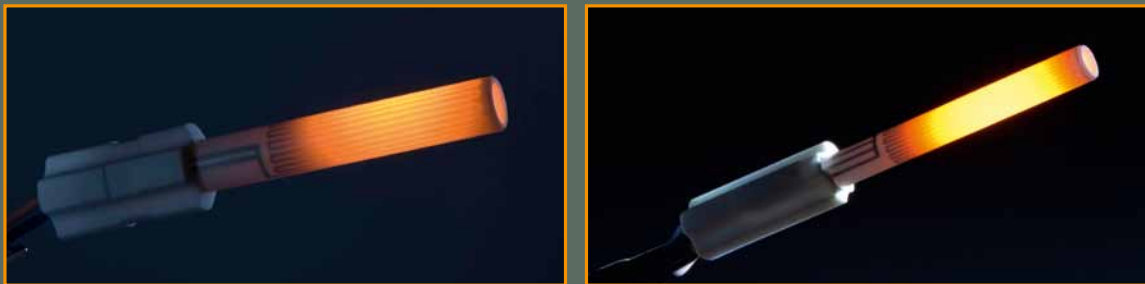
A summary of the advantages:

- Extremely fast and hot (permanently at 1100°C, for the short term up to 1300°C)
- Extremely energy-efficient
- Resistant to thermal stress (rapid switching is easily tolerated)
- Can be regulated easily and seamlessly (Pt characteristic)
- Very corrosion-resistant
- Practically non-ageing
- Electrical contacts by means of patented high-temperature-resistant plug connector
- Integrated temperature measurement possible by means of platinum conductor. Heater and sensor in one!



HIGHLY DURABLE AND ENERGY-EFFICIENT: **CERAMIC IGNITERS FOR SOLID FUEL FURNACES**

One special application area for the high-temperature heaters is in heating systems that use solid fuels such as wood pellets as the energy source. The challenge here is to ignite the biomass in a very short time while retaining very low emission values. This can only be achieved with a sufficiently high ignition temperature.



Our hot surface igniters are perfectly suited for this purpose. The special geometry of the cylindrical ceramic heaters, in combination with an extremely high surface temperature of 1000 °C, heats up the supply air in the shortest possible time to an extremely high temperature. After a maximum of 90 seconds, the fuel is ignited with a fraction of the energy that is required for a hot air or ignition blower. This works, of course, not only with pellets, but also with wood chips, firewood, coal bricks or other solid fuels made of biomass. Further product advantages:

- Ready assembled, easy-to-install systems
- Space-saving, noiseless and impervious to overheating (in case the blower fails)
- Extremely long-lasting and resilient
- Minimal energy consumption
- Completely electrically insulated
- No exposed electrical contacts
- No sensitive welding points

Not without reason, the HTH pellet igniter is **THE** reliable standard ignition system for pellet heating systems in Europe – hundreds of satisfied customers speak for themselves.

