



## Ohmic Heating

C-Tech Innovation is a leading developer of novel technologies and technology applications for industry. We commercialise new processes via contract and collaborative research and partnership.

Ohmic heating, also known as resistive heating, is one such technology, proven to be capable of processing high quality fluid food products. It can be used to cook, pasteurise and sterilise anything from juice and dairy products to soups and stews. Ohmic heating is a 'volumetric' heating technique - heat is generated inside the product rather than being conducted in from the outside. So, it has the benefit that there are no hot surfaces in contact with the product.

A highly efficient technique, capable of extremely rapid heating, ohmic heating can provide significant improvements in product quality. This makes ohmic heaters a good choice for products where traditional heat exchangers can lead to problems such as fouling and overheating leading to product quality reduction, and where products are difficult to heat because of a large solid content.

Ohmic heating involves passing an electric current through the product. This, in combination with the electrical resistance of the product generates heat in a uniform fashion. Most food products can be successfully heated using ohmic heating. Our 'flow-through' ohmic heaters process 'pumpable' products using an open geometry with the benefits of easy cleaning and low maintenance. They are kinder to products, so maintaining product integrity. The rapid and uniform heating made possible lends itself to high temperature short time (HTST) processes with potential benefits in terms of product taste, colour and texture.



### Benefits

- Reduced burning or fouling even delicate products
- Fast processing times and energy efficient
- Improved product quality
- Caters for products containing large solid content
- Low maintenance

### Features

- Automatic temperature control
- Temperatures up to 140 °C
- Standard units in 10kW and 50kW
- Bespoke units up to 150 kW
- All food grade materials including titanium electrodes

### Typical Applications

#### *Food and drink - pasteurisation, sterilisation*

- Dairy products
- Tomato products
- Fruit and Fruit juices
- Liquid egg
- Jams and compotes
- Soups, Casseroles and ragouts

#### *Waste treatment and other applications*

- Sterilisation of waste streams
- Hydrolysis of cellulosic waste
- Heating of clay slip and other slurries

