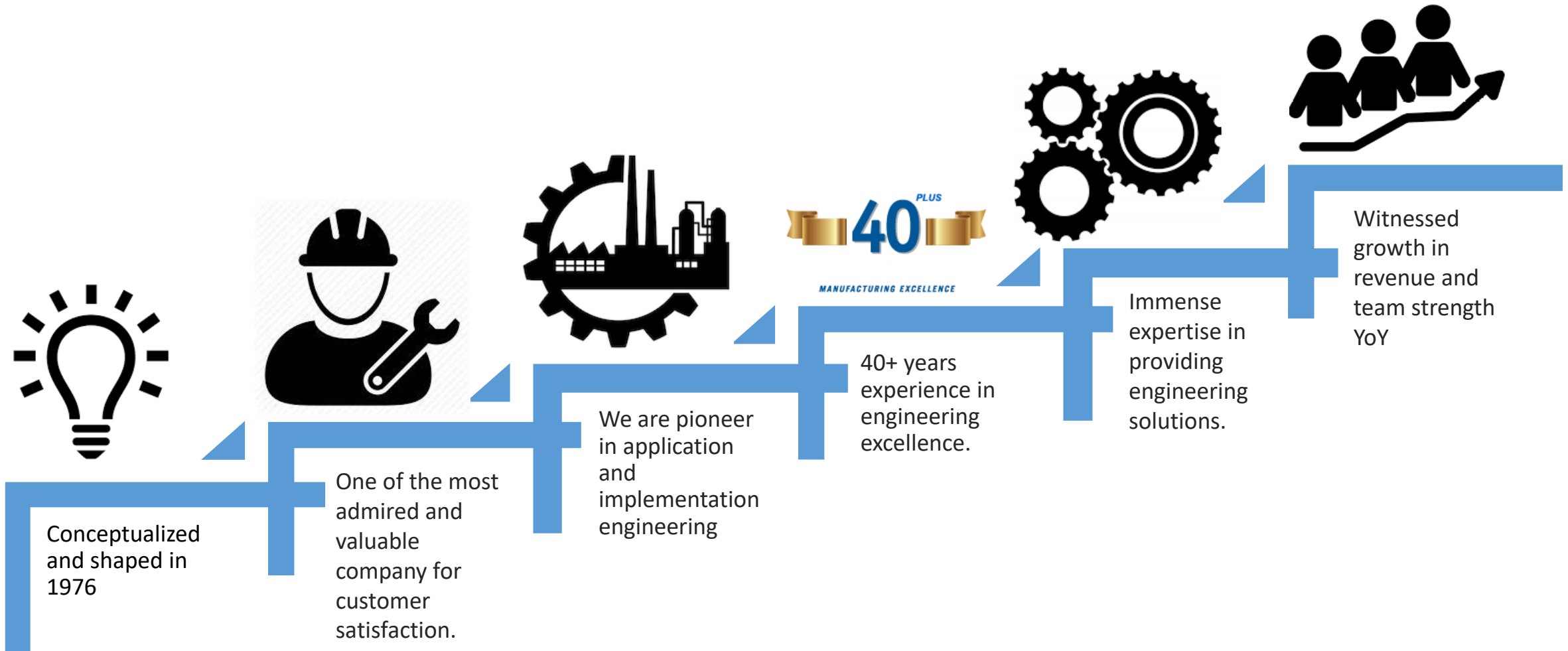


KERONE

Complete Engineering Solutions...

Who are we...



We are accredited by...

Member of AIMCAL



Member of IHEA



Strategic Partners of
Emitech Italy



IRQAO Certified For
Quality



Recognized and Rated by
CRISIL



CRISIL Verified



Member of A.M.P.E.R.E.
(Europe)



ASCB(E) Certification for
Best practice



ISO 9001:2008 | ISO 9001:2015 | OHSAS 18001 | EMS 14001

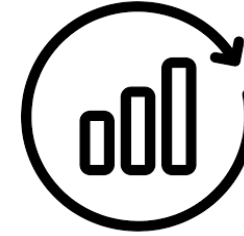
Why We...



**Highly Customized
Product**



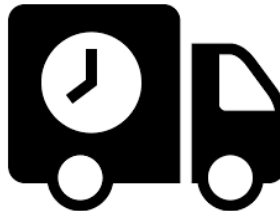
**Adherence
to Standards**



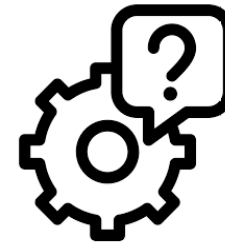
**Cost Effective
Solutions**



**Sound
Infrastructure**



**Timely
Delivery**



**Great After
Sale Support**

What is Pasteurization and Sterilization...

Pasteurization

- Pasteurization is the process of heating liquid to a specific temperature for a specific time period to reduce microbial growth.
- Heat liquid to a set temperature below boiling point and then cool quickly
- High-temperature, short-time (HTST) and Ultra-high temperature processing (UHT)
- Taste of the food remains the same
- Some microbial bacteria that stops growth
- Liquids, Liquid Food, Milk

Sterilization

- Sterilization is the process of eliminating all bacterial growth from various different objects.
- Heat or chemicals used to kill all various types of bacteria
- Applying heat, irradiation, chemicals and applying high pressure
- Alters the taste of the food
- All various types of microbial growth including bacteria, fungi, viruses
- All type of Food, Medical, Cleaning,



Why Microwave for Treating Food...

Uniform heating occurs throughout the material
Process speed is increased.

Process speed is increased.

Desirable chemical and physical effects are produced.

Purity in final product.

Floor space requirements are decreased.

Reduction in unwanted side reaction
(reaction Quenching)

Better and more rapid process control is achieved.

No fumes and pollutants

Selective heating i.e. heating selectively one reaction component.

Improve reproducibility

High efficiency of heating.

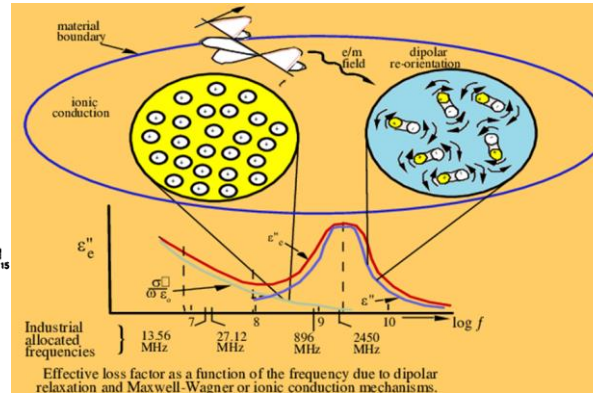
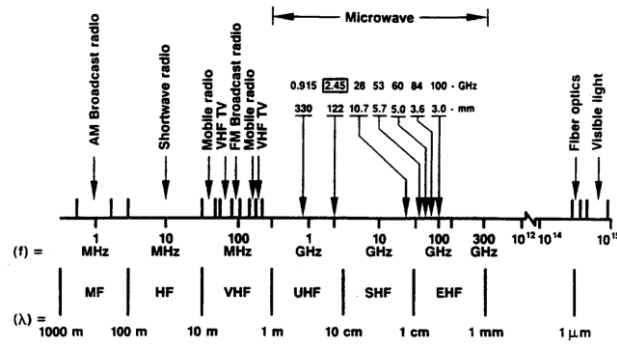
Environmental heat loss is save, Reduce wastage of heat

Direct utilization of large-sized feedstocks

Overall cost effectiveness/savings



Microwave Heating in Food...



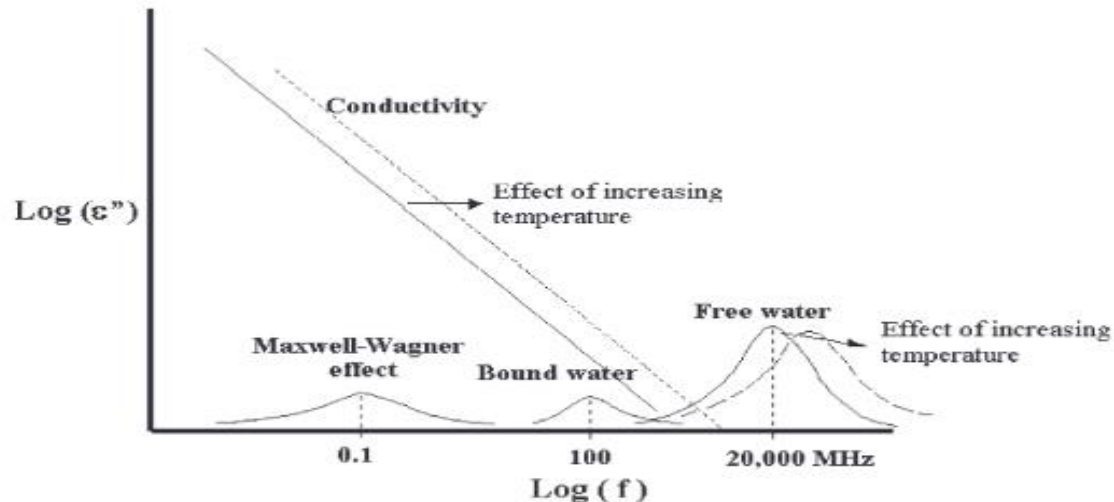
Microwave heating systems are member of Electromagnetic heating family.

Microwaves has frequency of 2.45Ghz and 950Mhz.

Microwave is generated from small device known as Magnetron.

Microwave heating system has property to heat from within.

Microwave heating systems heats volume of material hence also known as 'Volumetric Heating'.



Is food processed in Microwave safe for Consumers...

The microwave energy is changed to heat as soon as it is absorbed by the food

It doesn't make the food radioactive or contaminated

There is no residual radiation remaining in the food

When the microwave energy is turned off no adverse effect left out



Microwave Heating in Rescue...

Microwave Heating System

Microwave heating system is generates the heat very fast within material.

Heating of materials are due to molecule movements hence no chamber warm up time is required.

Environmental friendly and green heating solution, no carbon emission.

100% energy utilization, as heating takes place within the material.

Better floor utilization index as it doesn't require chamber area.

No Temperature loss in surrounding, ambient workplace.



Conventional Heating System

Conventional heating system have slow hating rate, heat is transferred via means of air.

Instance heating does not takes place, it requires warm-up of surrounding.

Produces carbon or toxic gases hence not much environmental friendly heating solutions.

100% energy utilization is not possible, as material is heated by surrounding hot air.

Poor floor utilization index as it require bigger chamber area for material to rotate.

Surrounding air temperature rises with rise in heater temperature.

Is Microwave Processing Economical...



It is difficult to estimate the total economical value for microwave sterilization technology when considering the complete chain from food product manufacturing, storage to distribution

But new values are added by using versatile novel technology that offers advantages over traditional processing such as:

- Ability to process all type of food product solid, semi-solid and liquid
- Rapid rate of heating and preservation of sensory and nutritional values
- Possibility of aseptic packaging
- High throughput of processed foods
- Can be incorporated in the existing processing lines



Microwave Pasteurization...

Motivation behind utilizing the microwave for pasteurization is the speed and effectiveness

Pasteurization is a process applied generally to liquid foods mainly to kill key pathogens and inactivate vegetative bacteria and enzymes to make food safe for consumption

Pasteurization can be achieved by ultra-high temp (UHT), high-temperature-short-time (HTST) and low-temp long time (LTLT).

The inactivation of PME and *Lactobacillus plantarum* are more pronounced using microwaves as compared to conventional heating

Pasteurization temperatures and times vary, depending on the product nature and the target organism

Microbial destruction are more temperature sensitive under microwave



Microwave Sterilization...

Sterilization is a more severe thermal treatment of foods

In the process of sterilization the foods are heated to sufficiently high temperature for a sufficiently long time to destroy microbial and enzyme activity

Sterilization process requires the technology that can offer sufficient heat in lesser time without causing any or reduce the damage to nutrients and sensory components

Microwave sterilization had some challenges in past such as unpredictable and non-uniform energy distribution

At Kerone, we have developed the control microwave sterilization solution that eliminates all previous hiccups



Other Applications of Microwave in Food Industries..

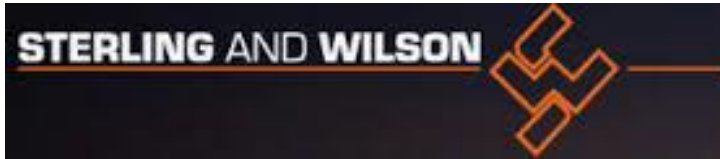
	Thawing and tempering
Drying	
	Pre-cooking
Cooking	
	Baking
Blanching	



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