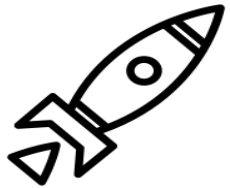
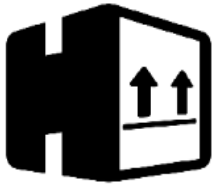





KERONE

Complete Engineering Solutions...

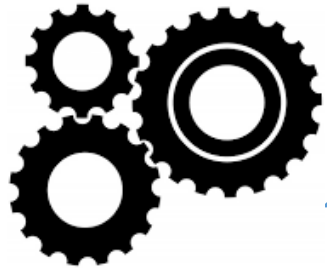
Who are we…

Conceptualized and shaped in 1976

One of the most admired and valuable company for customer satisfaction.

We are pioneer in application and implementation engineering

40+ years experience in engineering excellence.



Immense expertise in providing engineering solutions.

Witnessed growth in revenue and team strength YoY

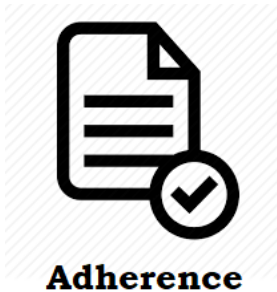
We are accredited by…

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...

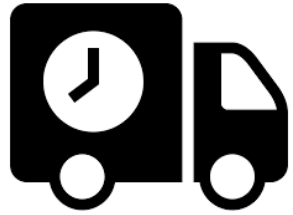
Highly Customized Product



Adherence to Standards

Cost Effective Solutions

Sound Infrastructure



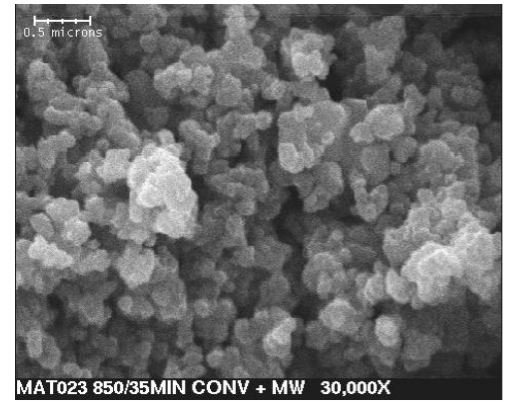
Timely Delivery

Great After Sale Support

Why Microwave Heating Ceramics…

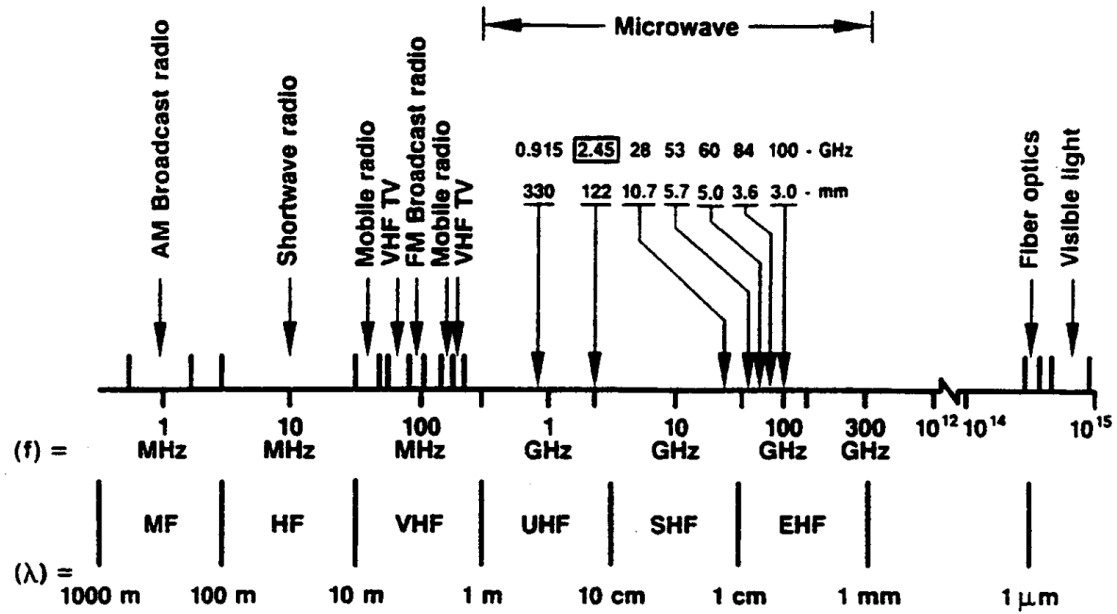
Uniform heating occurs throughout the material Process speed is increased.	Process speed is increased.
Desirable chemical and physical effects are produced.	Purity in final product.
Floor space requirements are decreased.	Reduction in unwanted side reaction (reaction Quenching)
Better and more rapid 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

Conventional Calcine
1000 °C, 4 hr, ***Ds = 500 nm***



Microwave Assist Technology
850 °C, 35 min, ***Ds = 150 nm***

Electromagnetic Spectrum…



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.

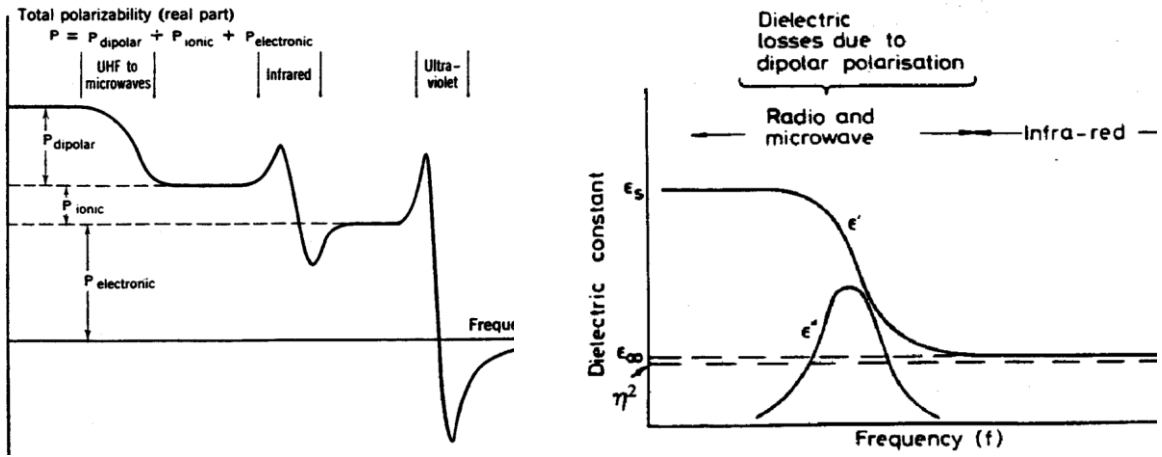
Microwave heating system has property to heat from within.

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

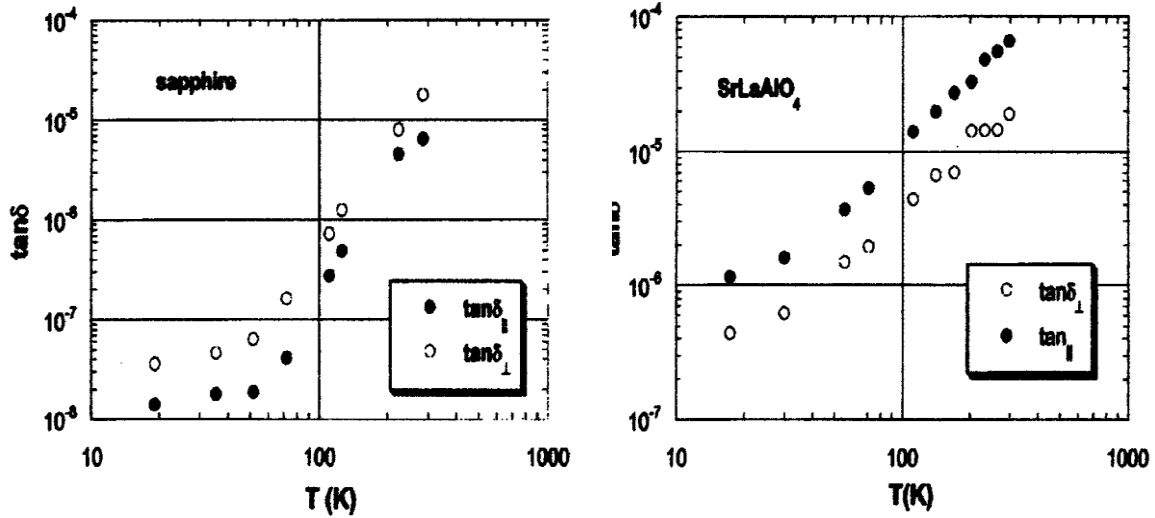
Microwave Heating

Dielectric Properties

- Indicator of how material will heat
- Tool in developing microwave heating processes



Dielectric Loss increases with Temperature



Polarizability and Dielectric Properties as Function of Frequency

Microwave Heating in Rescue…

Microwave Heating System	Conventional Heating System
Microwave heating system is generates the heat very fast within material.	Conventional heating system have slow hating rate, heat is transferred via means of air.
Heating of materials are due to molecule movements hence no chamber warm up time is required.	Instance heating does not takes place, it requires warm-up of surrounding.
Environmental friendly and green heating solution, no carbon emission.	Produces carbon or toxic gases hence not much environmental friendly heating solutions.
100% energy utilization, as heating takes place within the material.	100% energy utilization is not possible, as material is heated by surrounding hot air.
Better floor utilization index as it doesn't require chamber area.	Poor floor utilization index as it require bigger chamber area for material to rotate.
No Temperature loss in surrounding, ambient workplace.	Surrounding air temperature rises with rise in heater temperature.

Microwave Methods…

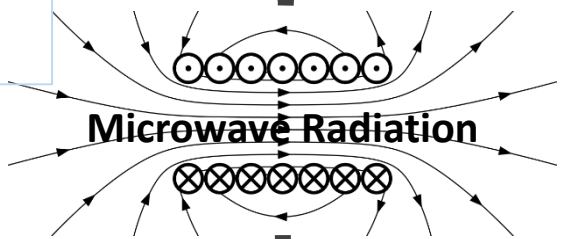
Pure Microwave

Hybrid Microwave Heating

Microwave energy only source of heat.

Microwave energy only source of heat.

Pre-heat zone + microwave energy.



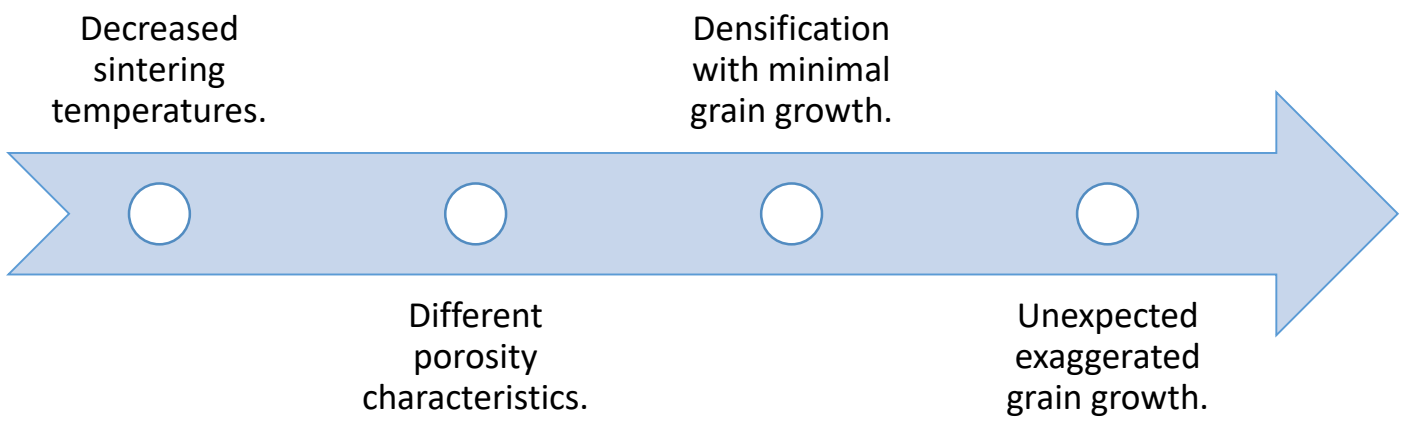
Combination microwave and radiant gas or electric.

Susceptor Assisted Heating

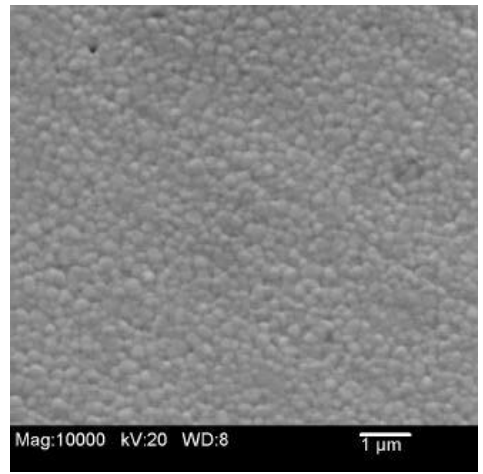
Combination microwave and radiant susceptor heating

Microwave Effect…

Temperature measurement problems comparing MW and conventional but still appears to be a real “microwave effect”



Microwave Research



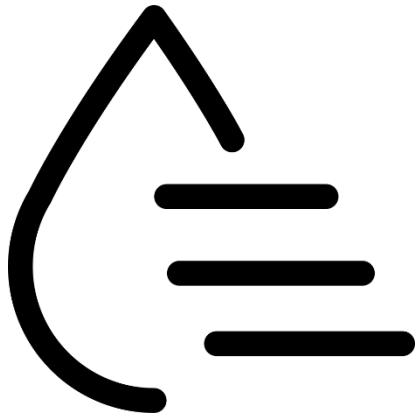
Zirconia Tosoh

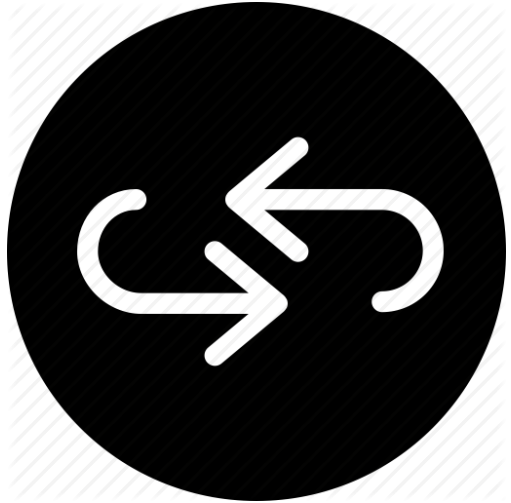
ThermWAVE Firing Profile

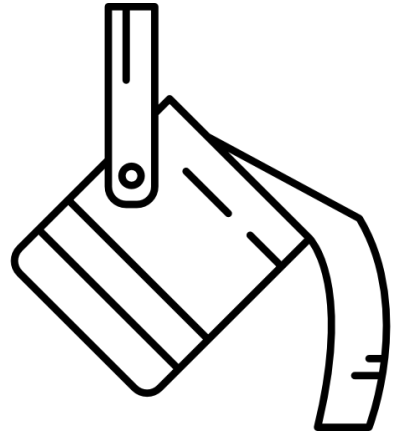
Conclusions…

Microwaves can be effective

- Drying
- Binder burnout
- Calcination Sintering ceramics and metals
- Melting glass
- Joining
- Rapid R&D







Trusted Partner of following consultants...

KERONE

AFCONS

BV consulting group

TEIL

LLOYD'S

TOYO ENGINEERING

TÜV

EIL

STERLING AND WILSON

TATA

TATA CONSULTING ENGINEERS LIMITED

Technip

Reliance Engineering

a division of Built-Rite Tool & Die, Inc.

SC Shroff Consultants

Our Clients...


WOCKHARDT
ESSAR STEEL
TATA MOTORS
SAINT-GOBAIN GLASS
SUZLON
ALSTOM
Jasubhai ENGINEERING
GM
LARSEN & TOUBRO
Kalpataru
Dynetics
GAYLORD
LOGICON
WIPRO
Flamingo Pharmaceuticals Ltd.
BLANCO
HADEN international group
FIAT
murugappa
Piramal Healthcare
Firmenich
Cipla
CAIRN Energy for India
LUPIN PHARMACEUTICALS, INC.
Bharat Petroleum
Reliance Industries Limited
CAIRN Energy for India
Camlin
Pidilite
BKT GROWING TOGETHER
IndianOil
NIPPON PAINT
Dr. Reddy's
MEDREICH
ESSAR
IFF
torrent
SARDA
SAF
L&T Power
ADITYA BIRLA HINDALCO
IOT
ACG Worldwide
moserbaer Technologies
Hindustan Unilever Limited
ARVIND
PAPYROL
HP Pelzer Automotive Systems, Inc.
Vertellus
CUMI
heubach
JINDAL STEEL & POWER
Nestlé
SIGNODE
Unitex

Serving Across Borders…

Locate-Us

UNIT I

B/10,Marudhar Industrial Estate,
Goddev Fatak road, Bhayander(E),
Mumbai-401105

Phone : +91-22-28150612/13/14

UNIT II

Plot No. B-47, Addl.
MIDC Anandnagar, Ambernath (East),
Dist. Thane- 421506

Phone : +91-251-2620542/43/44/45/46

EMAIL

info@kerone.com | sales@kerone.com |
unit2@kerone.com

WEBSITE

www.kerone.com | www.kerone.net |
www.keroneindia.com