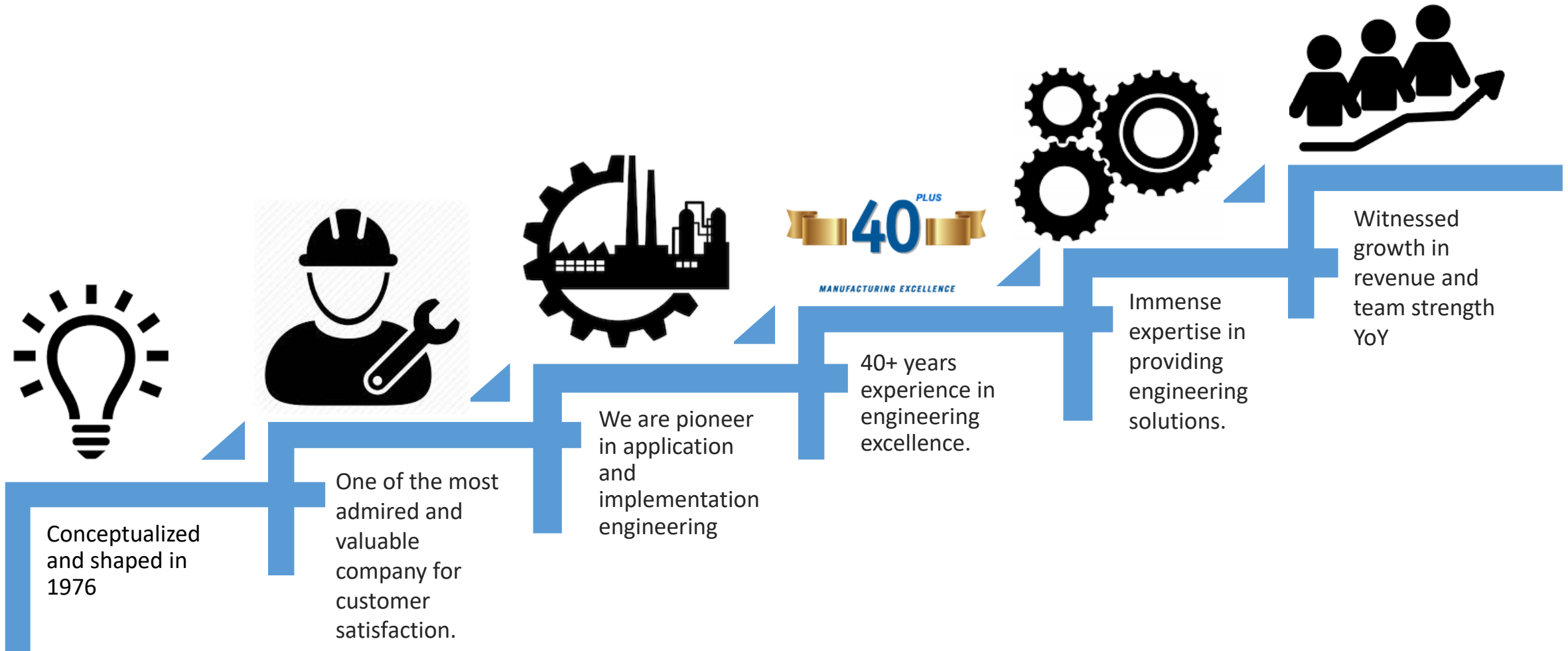


KERONE

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
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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

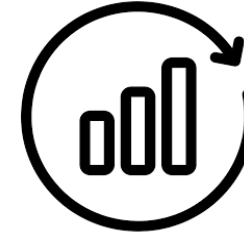
Why We...



**Highly Customized
Product**



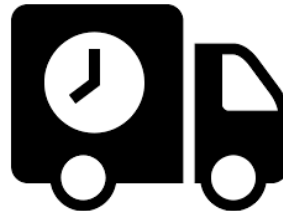
**Adherence
to Standards**



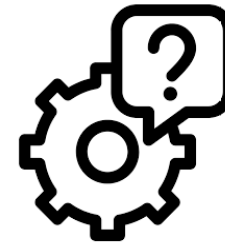
**Cost Effective
Solutions**



**Sound
Infrastructure**



**Timely
Delivery**

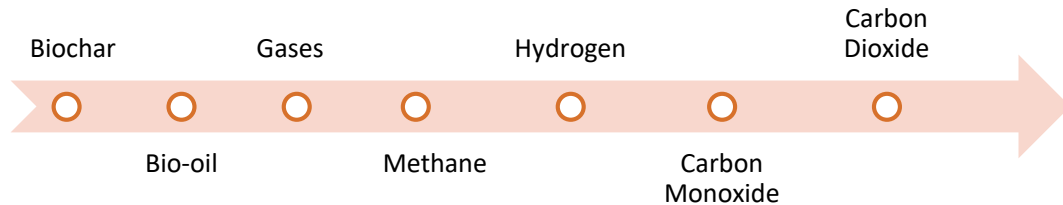


**Great After
Sale Support**

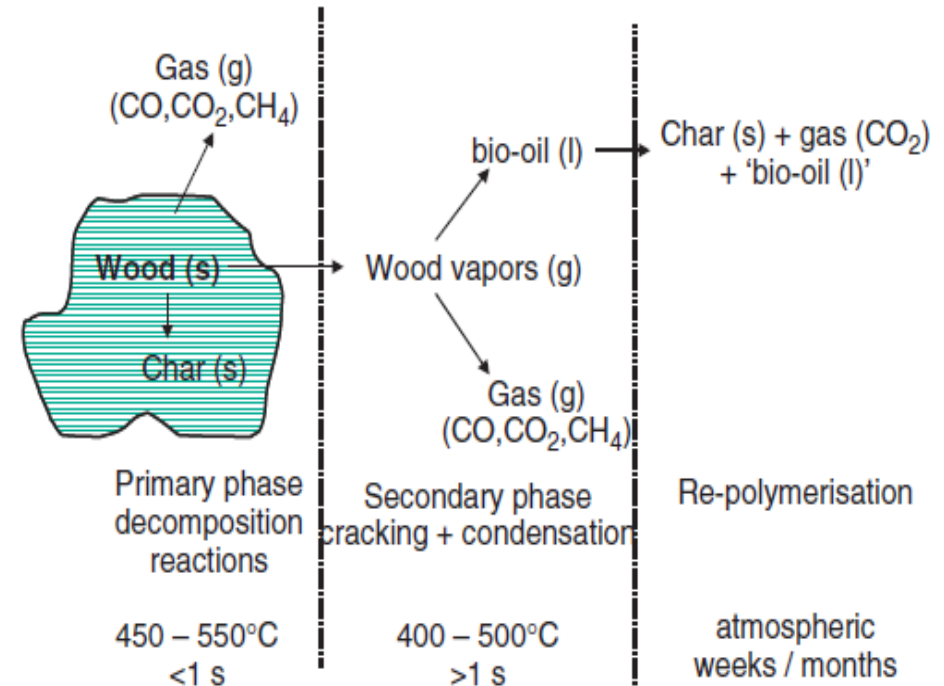
What is Biomass Pyrolysis ...

- Biomass pyrolysis is the thermal decomposition of biomass occurring in the absence of oxygen.
- Pyrolysis is the thermal decomposition of materials at elevated temperatures in an inert atmosphere involving the formation of radicals.
- It occurs at higher temperatures i.e. 400-700 °C (above the boiling point of water or other solvents).
- Offers a flexible and attractive way of converting solid biomass into an easily stored and transported liquid

The products of Biomass Pyrolysis:

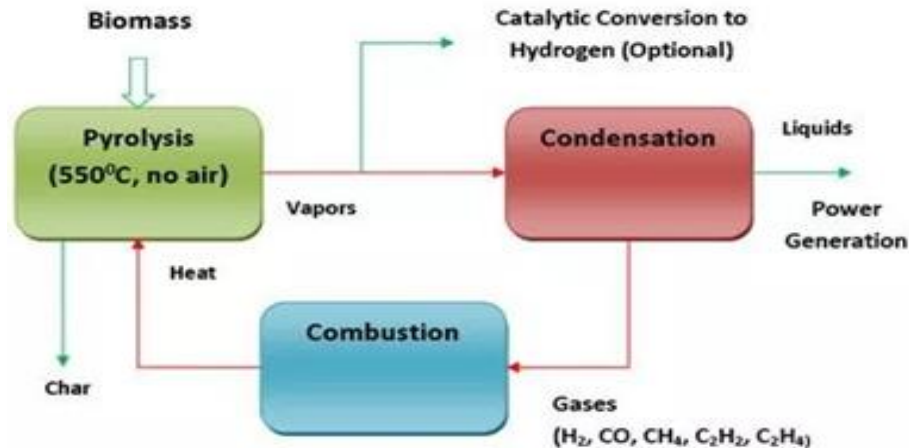


Representation of the reaction paths for wood pyrolysis



What is Biomass Pyrolysis cont. ...

- Lignocellulosic biomass, a major biomass resource, has been recognized as a potentially sustainable feedstock for the production of bio fuels and other biomaterials.
- Lower process temperature and longer vapor residence time favor the production of char, higher processing temperature and longer vapor residence time increase the biomass conversion to gas, and moderate temperature and shorter vapor residence time are optimum for liquid production.



Microwave pyrolysis can be applied to:

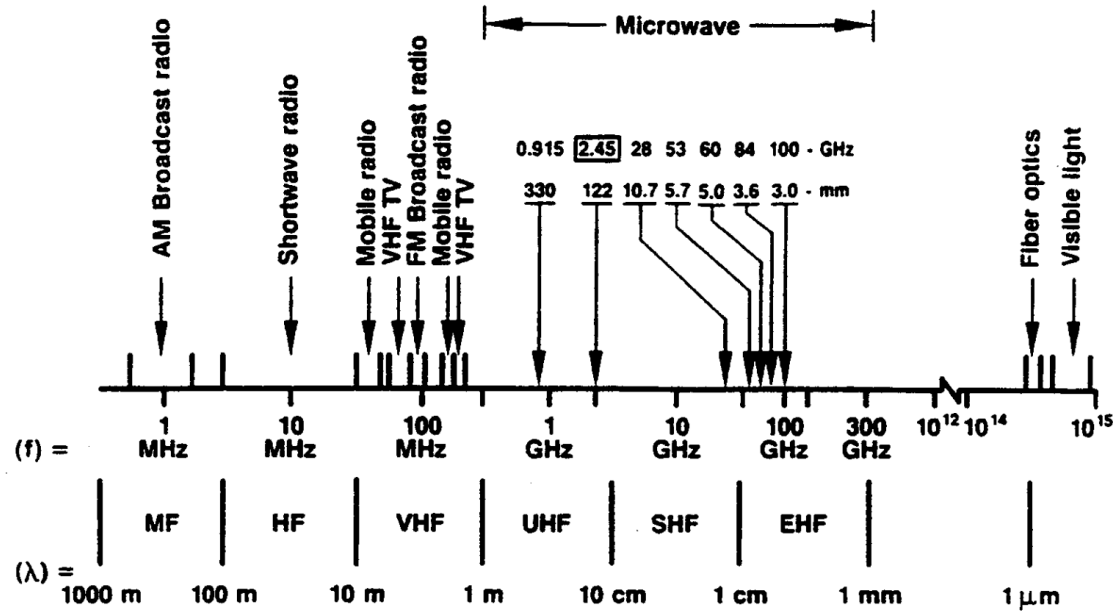
- Larch
- lignocellulosic feed stocks
- Pine Wood
- Sawdust
- Peanut Shell
- Maize Stalk
- Rice Straw
- Corn Stover
- Aspen
- Wheat Straw
- Oil Palm Biomass
- Douglas Fir
- Prairie Cord Grass
- Rice Husk
- Waste Office Paper

Why Microwave for Pyrolysis ...

- Microwave heating processes converts lignocellulosic feed stocks more quickly with lesser cost
- Microwave heating offers volumetric heating at an improved heating efficiency
- Microwave heating processes offers higher gas and solid yields
- Uniform internal heating of biomass particles
- Microwave heating has shorter heating period and avoids energy loss
- Highly scalable technology suitable for distributed conversion of bulky biomass
- The syngas produced has higher heating value since it is not diluted by the carrying gas.



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.

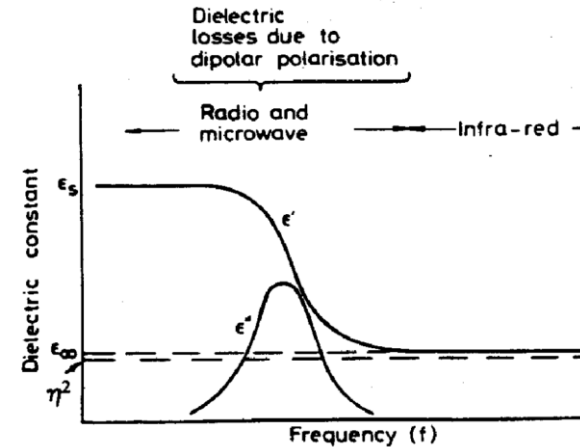
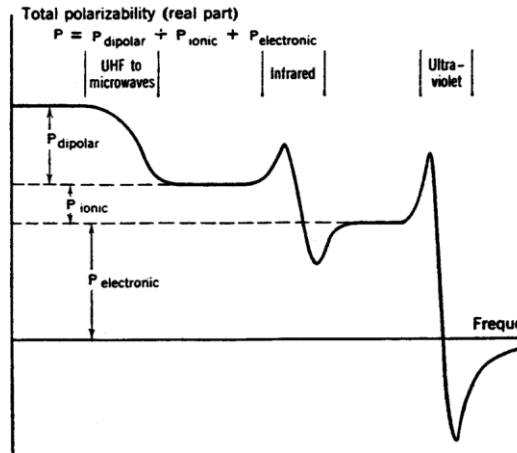
Microwave heating system has property to heat from within.

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

Microwave Heating

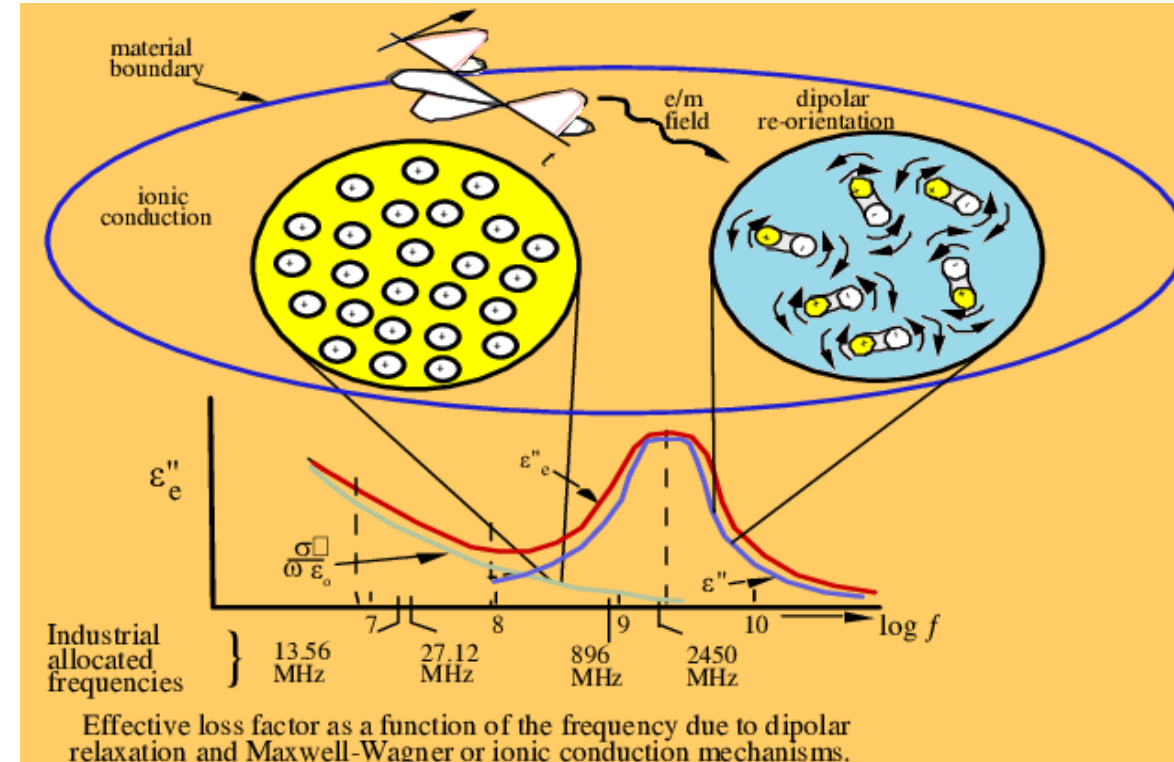
Dielectric Properties

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



Polarizability and Dielectric Properties as Function of Frequency

Dielectric Loss increases with Temperature



Microwave Heating in Rescue...



Microwave Heating System

Microwave heating system 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 heating rate, heat is transferred via means of air.

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

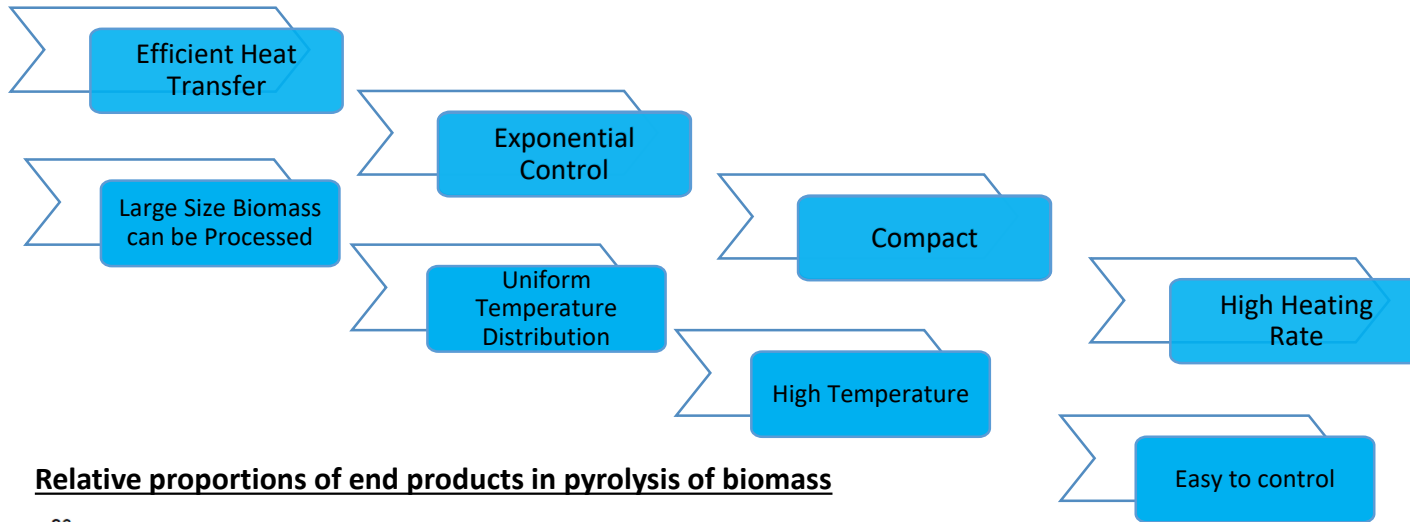
Produces carbon or toxic gases hence not much environmental friendly heating solutions.

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

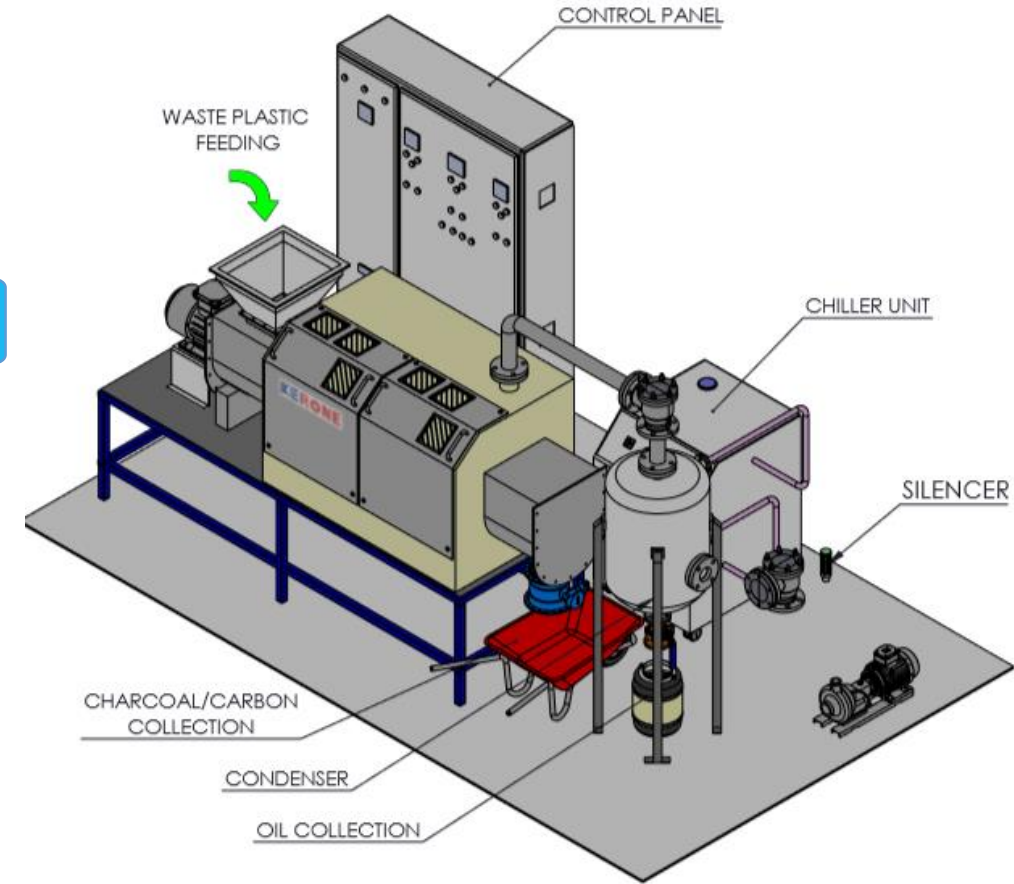
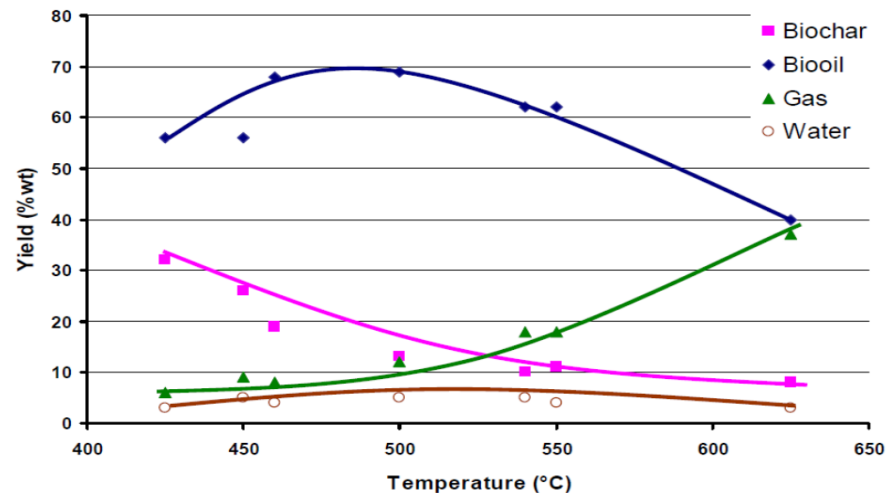
Poor floor utilization index as it require bigger chamber area for material to rotate.

Surrounding air temperature rises with rise in heater temperature.

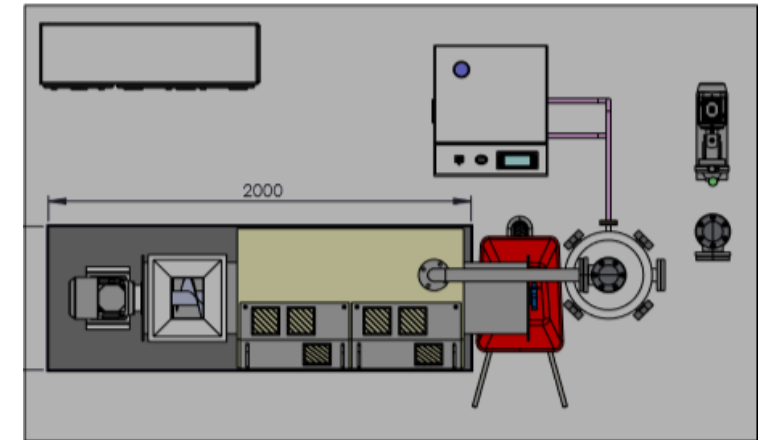
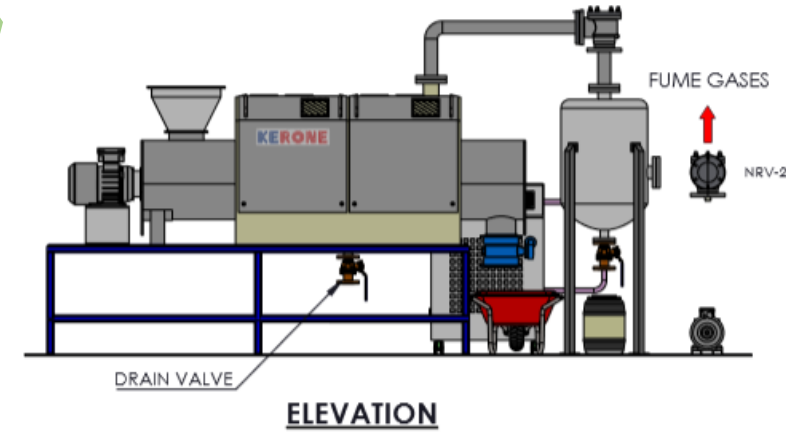
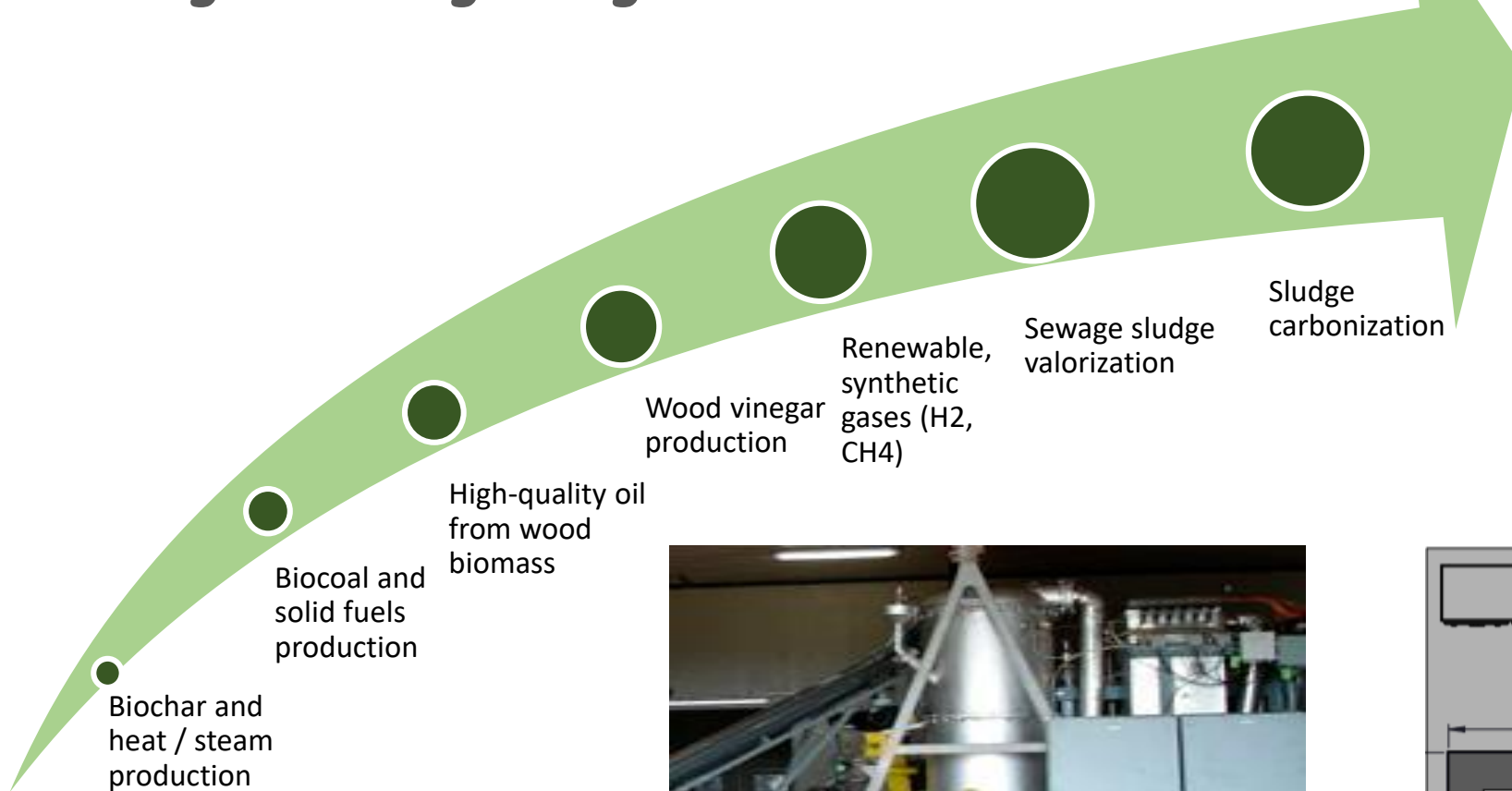
Features of Microwave in Pyrolysis...



Relative proportions of end products in pyrolysis of biomass



Why do Pyrolysis...



Trusted Partner of following consultants...



Our Clients...

Serving Across Borders...





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