



MICROWAVE TECHNOLOGY

POTENTIAL UNLOCKED

IB Catalyst Engineering Focused Workshop

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Making Waves in the World of Liquid Thermal Processing

Contents

- Why does AMT microwave technology work in IB?
- Immediate areas of application

Why does AMT microwave technology work in IB?



Overcomes the problems commonly associated with microwave heating

- Total penetration through cross section of flowing liquids
- No hot spots, no cold spots
- Continuous, not batch
- Tonnes/hour, not kgs/hour
- Precision temperature selection $\pm 1^{\circ}\text{C}$
- No fouling, no product damage

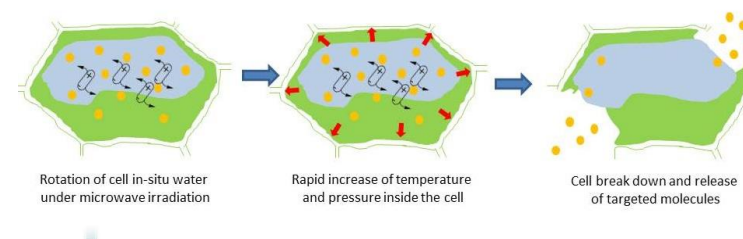
Continuous, industrial scale microwave processing, available immediately

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Immediate areas of application

Extraction (with or without solvents)

- Accelerated extraction rates: x30 to x150+
- Higher yield
- Lower energy needs
- Reduced thermal degradation
- Fewer extraction stages



Anaerobic digestion

- Microwave hydrolysis
- Accelerated reaction rates
- Decreased retention time
- Increased biogas yield
- AD from recalcitrant materials

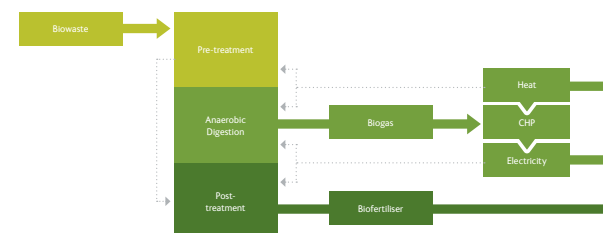


Figure 10 Anaerobic digestion process Source: DEFRA and DECC

Value from waste

- Stabilisation of waste materials for downstream processing
- Give shelf life of 21-28 days
- Facilitate transport for downstream processing

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