DO I REALLY NEED MICROWAVE TECHNOLOGY?

Microwave synthesis is a well-accepted technique used by research facilities and major pharmaceutical, biotech, and chemical companies worldwide. This established technology has changed the way many reactions are performed, as well as preconceived ideas about the capabilities of microwave synthesis.

Microwave energy is a low frequency energy source that is remarkably adaptable to many different types of chemistries from high temperature nanomaterial synthesis to low temperature carbohydrate reactions.

Perform reactions 10-1000 times faster than conventional heating
Microwave heating allows students to complete purification and analysis in the same lab period.

Achieve greater yields and increased purities
Microwave energy transfers to the reactants rapidly, giving side reactions very little opportunity to form and resulting in greater yields of the target product.

Implement green chemistry principles
Microwave reactions use less solvent than conventional reactions, and in some chemistries, less hazardous solvents or even water may be used and still produce great results.

Enhance the safety of your job
Laboratory grade microwave systems provide monitoring and feedback control of temperature, pressure, and stirring to ensure maximum safety and reproducibility in the lab.

CONVECTIVE HEATING
Energy is transferred indirectly to the reactants by applying heat to the outside surface of the vessel. This form of heating is very slow and inefficient.

MICROWAVE HEATING
Since the vessel wall is virtually transparent to microwaves, energy is directly absorbed by the reaction, providing instantaneous activation or localized superheating of the molecules in solution. This direct molecular activation limits side reactions and provides a fast and efficient form of heating.
The Discover LabMate™ provides an economical, modular platform, customizable to fit your needs. Start with a basic system and add on more capabilities as you need.

**The Labmate features:**
- Access to reaction temperatures up to 300 °C and 300 psi
- 10-mL vessels for research and 80-mL vessels for scale up
- A wide variety of upgradeable accessories
- Simple to use Synergy™ software for reaction programming and data management
- Integrated electromagnetic stirring
- The easiest cavity access for cleaning and use

**Volume-Independent Temperature Sensor**
The floor mounted, infrared temperature sensor enables Discover to accurately measure temperature in volumes from 0.2 to 75 mL.

**IntelliVent Pressure Management**
IntelliVent technology monitors reaction pressure and safely relieves excess pressure without the need for manual venting.

**Self-Tuning Single-Mode Cavity**
The cavity of the Discover LabMate™ automatically adjusts power output based on the polar and ionic properties of the reaction solution.

**Add accessories to do more with your Discover LabMate™.**

- **CoolMate**
  Use the power of microwaves to accelerate reactions even at temperatures as low as -80 °C.

- **Gas Addition**
  Perform microwave reactions with gaseous reagents.

- **Fiber Optic Temperature Control**

**DISCOVER RELIABLE PERFORMANCE**

**DISCOVER FLEXIBILITY**
Our commitment to you doesn’t end when your system is shipped; it begins.

~Michael J. Collins
President & CEO, CEM