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An Overview of Ultrasound Irradiation as A Greener Approach in Chemistry for Rapid and Efficient Synthesis

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Abstract: *In chemical synthesis, ultrasound irradiation is important because it provides a more efficient and environmentally friendly method than conventional techniques, especially when considering sustainable development. Although it offers many benefits, such as improved reaction rates, lower energy consumption, and milder conditions, it also has drawbacks that must be addressed. By facilitating greener, more economical, and efficient processes, ultrasound provides a useful tool for promoting sustainable chemical synthesis. Although there are obstacles to overcome, especially in terms of scaling up and comprehending mechanisms, ultrasound offers substantial advantages in accomplishing sustainable development objectives. Ultrasound can be a potent technology for the future of chemical manufacturing if the benefits and drawbacks are carefully weighed and reaction conditions are optimized.*

Keywords: Ultrasound, Sonochemistry, Sonication, Green Chemistry

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