

**GREEN CHEMISTRY FRONTIERS: MEETING THE GRAND  
CHALLENGES OF SUSTAINABILITY IN RESEARCH AND  
DEVELOPMENT AND MANUFACTURING**

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**ABSTRACT**

*Green chemistry is the design, development, and implementation of chemical products and processes with the goal of reducing or eliminating the use and production of harmful chemicals to human health and the environment. It is a non-regulatory, market-driven approach to long-term sustainability. Through practical examples, the undeniable benefit of Green Chemistry to business and the environment is shown. Green chemistry's potential to address sustainability at the molecular level must be acknowledged. Green Chemistry pushes innovators to design and use matter and energy in a manner that improves performance and value while preserving human health and the environment at the most basic level. Green Chemistry concepts must become the foundation for tomorrow's chemistry, including sustainability into science and its inventions.*

**KEYWORDS:** *Green Chemistry, Sustainability, Metrics, Life Cycle.*

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