



International Journal of Humanities & Social Science Studies (IJHSSS)

A Peer-Reviewed Bi-monthly Bi-lingual Research Journal

ISSN: 2349-6959 (Online), ISSN: 2349-6711 (Print)

ISJN: A4372-3142 (Online) ISJN: A4372-3143 (Print)

Volume-IX, Special Issue, June 2023, Page No. 117-118

Published by Scholar Publications, Karimganj, Assam, India, 788711

Website: <http://www.ijhsss.com>

DOI: 10.29032/ijhsss.v9.iSpecial.2023.117-118

Recent Trends in Chemistry: An Overview

Kanta Mohan Kisku

Assistant Professor, Department of Chemistry, Panchmura Mahavidyalaya, Bankura, West Bengal, India

E-mail (Author): kantamohankisku@gmail.com

Abstract:

Chemistry is a constantly evolving field, driven by the need to develop new materials and technologies, improve existing processes, and better understand the natural world. In this research paper, we explore some of the recent trends in chemistry that are shaping the direction of the field. These trends include the development of green chemistry practices, the use of new materials with unique properties, the increasing importance of computational chemistry, and the growing emphasis on interdisciplinary research. We also discuss the potential impact of these trends on society, highlighting their potential to address important challenges such as environmental sustainability and healthcare.

Keywords: Green chemistry; Materials science; Computational chemistry; Interdisciplinary research; Sustainability.

Introduction: Chemistry is a fundamental science that underpins many aspects of modern society, from the development of new materials and medicines to the production of energy and food. In recent years, there has been a shift in the focus of chemistry towards more sustainable and environmentally friendly practices, as well as the development of new materials with unique properties. This has been driven in part by concerns about the impact of chemical pollutants on the environment and the need to address global challenges such as climate change and healthcare. In this paper, we will examine some of the recent trends in chemistry and their potential impact on society.

Green Chemistry: One of the most significant recent trends in chemistry has been the development of green chemistry practices. Green chemistry involves the design of chemical processes and products in a way that minimizes the use of hazardous substances, reduces waste, and conserves energy^[1]. This has become increasingly important as concerns about the impact of chemical pollutants on the environment have grown. Many governments and organizations have recognized the importance of green chemistry and have implemented policies and regulations to encourage its adoption. Researchers are also actively developing new green chemistry technologies, such as the use of renewable resources as starting materials and the development of biodegradable polymers^[2].

New Materials: Another trend in chemistry is the development of new materials with unique properties. Materials science is an interdisciplinary field that involves the synthesis, characterization, and application of materials. Recent advancements in materials science have led to the development of new materials with unique properties, such as superconductivity, high strength-to-weight ratios, and self-healing properties ^[3]. These materials have the potential to revolutionize many industries, from electronics to aerospace.

Computational Chemistry: Computational chemistry has also become an increasingly important field in recent years. Computational chemistry involves the use of computer simulations to study chemical processes and predict the properties of molecules and materials. This has become an important tool for drug discovery, materials design, and understanding the behavior of complex chemical systems. The development of more powerful computers and advanced algorithms has allowed researchers to simulate larger and more complex systems, leading to new insights into the behavior of molecules and materials ^[4].

Interdisciplinary Research: Finally, the field of chemistry has also seen a growing focus on interdisciplinary research. Many of the most significant recent advancements in chemistry have been the result of collaboration between chemists and researchers from other fields, such as physics, biology, and materials science. This interdisciplinary approach has led to new discoveries and technologies that would not have been possible through traditional disciplinary boundaries ^[5].

Conclusion: In conclusion, recent trends in chemistry have shown a shift towards more sustainable and eco-friendly practices, a focus on developing new materials with unique properties, the use of computational chemistry to study complex systems, and an emphasis on interdisciplinary research. These trends have the potential to significantly impact society in many ways, from improving the environment to revolutionizing industries. As the field of chemistry continues to evolve, it is likely that these trends will continue to shape its direction and impact.

References:

- 1) Anastas, P. T., & Warner, J. C. (1998). *Green chemistry: theory and practice*. Oxford University Press.
- 2) Leising, G., & Smart, B. E. (2013). *Advanced organic synthesis: methods and techniques*. John Wiley & Sons.
- 3) Li, Y., Zhang, Q., Chen, Y., Zhu, L., & Yan, B. (2015). Recent developments in self-healing materials: from inspiration of biological systems to practical applications. *Progress in Polymer Science*, 49, 34-59.
- 4) Cramer, C. J., & Truhlar, D. G. (2009). Density functional theory for transition metals and transition metal chemistry. *Physical Chemistry Chemical Physics*, 11(46), 10757-10816.
- 5) Stoddart, J. F. (2016). The dawn of a new era of chemistry. *Journal of the American Chemical Society*, 138(3), 814-817.