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Finding the innovation in green chemistry/engineering

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Our quest to design chemical processes and products aimed at the reduction or elimination of hazardous substance (chemical) use has bourn considerable fruit in the field of green chemistry/engineering. Complementary sets of green chemistry and green engineering principles have provided the directions involved in this paradigm shift. The principles used to design green processes can be employed in the assessment of the new technology involved. Green process innovation exemplifies the strength and direction of new process development.

We have investigated a series of metrics designed to permit an assessment green chemistry components contributing to new chemical process development and innovation at several stages of development. As we assess a given process development or discovery, these metrics are used to evaluate the contribution of each feature. This analysis begins to uncover the green chemistry/engineering contributors in each process assessment and offer an understanding of which features contribute to the green chemistry/engineering innovation of the process. We also recognize that features contributing to innovation will vary across the landscape of discovery to established chemical processes. The importance of sustainability in the design of new molecules at various levels of new chemical development now becomes relevant to discovery, process economics and public acceptability.

Biography

John Glaser holds a Ph.D. in organic chemistry from the University of Georgia and has conducted research at the US Environmental Protection Agency for 32 years. He holds position as editor and advisory board member on several scientific journals. He has a collection of book and journal articles ranging from oil spill remediation development to environmental analytical criteria and beyond to applications of remote sensing to environmental issues.

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