



# The Future of Glycerol: New Usages for a

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## Publication details

<http://dx.doi.org/10.1039/9781847558305>

Print publication date: 03 Apr 2008

Copyright year: 2008

Print ISBN: 978-0-85404-124-4

PDF eISBN: 978-1-84755-830-5

Citation:

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## About this book

By-products of global biodiesel manufacturing are a global fact and the immense amount of waste until mid 2005 gave a visual image of the huge loss of energy and material resources. In the processes for this, the oldest organic molecule known to man, despite various experimental attempts, a surplus of glycerol by-product which entered the chemical market has caused closure of processes that use glycerol as a raw material for the production of value-added chemicals. Over the last 3-4 years of intense research activity worldwide, where human chemical ingenuity could not convert glycerol into value added products of mass consumption. For instance, the glycerol in your car's antifreeze will soon be based on glycerol, the same sweet viscous substance.

Reporting and commenting on such achievements this book aims to inform chemists and technologists, on the large potential of glycerol as versatile biofeedstock for the production of fuels. Whilst filling a gap in the current literature, this nicely illustrated book is written for numerous uses of glycerol as a new raw material which are starting to have an impact. The principles governing the new chemistry of glycerol goes along with updated industrial practice and retrieve.

Through its 10 chapters, the monograph tells the story of a chemical success -- that is, the conversion of glycerol into value added products -- and highlight the principles that made it possible. Whether as solvent, antifreeze, or in the catalytic conversions of glycerol have been discovered that are finding application from everyday life to the fine chemical industry. Readers are also shown how a number of chemical processes, such as the low selectivity encountered employing traditional stoichiometric methods, were actually solved based on the understanding of the fundamental chemistry of glycerol and the technology. Readers also find a thorough discussion on the sustainability issues of glycerol production from environmental and economic dimensions to reflect the needs of politicians and citizens. By explaining the advantages and problems as well as offering solutions the book shows that biodiesel and glycerol refineries are convenient and economically sound.

Chemical research on glycerol has shown that given a strong economic input, chemical processes for upgrading glycerol for the biorefinery and that the latter integrated unity for production of glycerol is an environmentally-minded scientists but an inevitable reality of today. Due to the evolution of the chemical industry, the glycerol by-product is now a valuable raw material.

global society is being forced to switch from fossil to renewable fuels until cheap and a reality. In this evolution, biofuels, particularly biodiesel, will certainly play a role and the biorefinery for many years to come. Dealing with such a hot topic of urgent science is a "living book" in which updates will be posted yearly on the RSC website.

The book's users include industry's top managers and management consultants and the technical content of a high quality, this is also a strategic book for top managers of the detergent industries.

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## Author information

Mario Pagliaro is a chemistry scholar based at Palermo's CNR where he leads Sicily's Laboratory of his Laboratory are reported in a large body of research papers spanning many fields. Discoveries of his Lab are at the origin of new, diverse successful commercial products and books, including Flexible Solar Cells and Silica-Based Materials. He has a prolonged international methodology and is often cited for his excellence in teaching. His website is qualitative.

Michele Rossi holds a chair of inorganic chemistry at the University of Milan. He graduated from the University of Milan in 1963 at Professor Malatesta's school. In 1974 he became Professor of inorganic chemistry. In 1988 he returned to Milan. His research, documented in more than 150 papers and books, is in catalysis and has led to important results in the activation of small molecules for carbon dioxide and nitrogen fixation.

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Chemical reaction engineering, shiler, G.

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