

# Multi Synthesis Problems Organic Chemistry

Organic electronics

*Organic electronics is a field of materials science concerning the design, synthesis, characterization, and application of organic molecules or polymers*

Organic electronics is a field of materials science concerning the design, synthesis, characterization, and application of organic molecules or polymers that show desirable electronic properties such as conductivity. Unlike conventional inorganic conductors and semiconductors, organic electronic materials are constructed from organic (carbon-based) molecules or polymers using synthetic strategies developed in the context of organic chemistry and polymer chemistry.

The ISUCT takes the first place among universities in the Ivanovo region in the national ranking of universities.

One of the promised benefits of organic electronics is their potential low cost compared to traditional electronics. Attractive properties of polymeric conductors include their electrical conductivity (which can be varied by the concentrations of dopants) and comparatively high mechanical flexibility. Challenges to the implementation...

Alexander Nesmeyanov

*elemental organic chemistry. Moscow: Publishing House Acad. Sciences of the USSR, 1965. Nesmeyanov A.N., Belikov V.M. Problem of food synthesis. Series:*

Alexander Nikolayevich Nesmeyanov (Russian: ????????? ?????????? ?????????; 9 September [O.S. 28 August] 1899 – 17 January 1980) was a Soviet chemist and academician (1943) specializing in organometallic chemistry.

### Computational chemistry

*Computational chemistry is a branch of chemistry that uses computer simulations to assist in solving chemical problems. It uses methods of theoretical chemistry incorporated*

Computational chemistry is a branch of chemistry that uses computer simulations to assist in solving chemical problems. It uses methods of theoretical chemistry incorporated into computer programs to calculate the structures and properties of molecules, groups of molecules, and solids. The importance of this subject stems from the fact that, with the exception of some relatively recent findings related to the hydrogen molecular ion (dihydrogen cation), achieving an accurate quantum mechanical depiction of chemical systems analytically, or in a closed form, is not feasible. The complexity inherent in the many-body problem exacerbates the challenge of providing detailed descriptions of quantum mechanical systems. While computational results normally complement information obtained by chemical...

### Oligonucleotide synthesis

*“Oligo- and poly-nucleotides: 50 years of chemical synthesis”. Organic & Biomolecular Chemistry. 3 (21): 3851–68. doi:10.1039/b510458k. PMID 16312051*

Oligonucleotide synthesis is the chemical synthesis of relatively short fragments of nucleic acids with defined chemical structure (sequence). The technique is extremely useful in current laboratory practice because it provides a rapid and inexpensive access to custom-made oligonucleotides of the desired sequence. Whereas enzymes synthesize DNA and RNA only in a 5' to 3' direction, chemical oligonucleotide synthesis does not have this limitation, although it is most often carried out in the opposite, 3' to 5' direction. Currently, the process is implemented as solid-phase synthesis using phosphoramidite method and phosphoramidite building blocks derived from protected 2'-deoxynucleosides (dA, dC, dG, and T), ribonucleosides (A, C, G, and U), or chemically modified nucleosides, e.g. LNA or BNA...

### Organic solar cell

*An organic solar cell (OSC) or plastic solar cell is a type of photovoltaic that uses organic electronics, a branch of electronics that deals with conductive*

An organic solar cell (OSC) or plastic solar cell is a type of photovoltaic that uses organic electronics, a branch of electronics that deals with conductive organic polymers or small organic molecules, for light absorption and charge transport to produce electricity from sunlight by the photovoltaic effect. Most organic photovoltaic cells are polymer solar cells.

The molecules used in organic solar cells are solution-processable at high throughput and are cheap, resulting in low production costs to fabricate a large volume. Combined with the flexibility of organic molecules, organic solar cells are potentially cost-effective for photovoltaic applications. Molecular engineering (e.g., changing the length and functional group of polymers) can change the band gap, allowing for electronic tunability...

#### Organic chemistry

*Organic chemistry is a subdiscipline within chemistry involving the scientific study of the structure, properties, and reactions of organic compounds*

Organic chemistry is a subdiscipline within chemistry involving the scientific study of the structure, properties, and reactions of organic compounds and organic materials, i.e., matter in its various forms that contain carbon atoms. Study of structure determines their structural formula. Study of properties includes physical and chemical properties, and evaluation of chemical reactivity to understand their behavior. The study of organic reactions includes the chemical synthesis of natural products, drugs, and polymers, and study of individual organic molecules in the laboratory and via theoretical (in silico) study.

The range of chemicals studied in organic chemistry includes hydrocarbons (compounds containing only carbon and hydrogen) as well as compounds based on carbon, but also containing...

Strategies that allow identification of useful components of the libraries are also part of combinatorial chemistry. The methods used in combinatorial chemistry are applied outside chemistry, too.

For a non-chemist, an understandable method of describing the improvement might be a decrease of X unit cost per kilogram of compound Y. This, however, might be an over-simplification. For example...

#### Combinatorial chemistry

*structures generated by computer software. Combinatorial chemistry can be used for the synthesis of small molecules and for peptides. Strategies that allow*

Combinatorial chemistry comprises chemical synthetic methods that make it possible to prepare a large number (tens to thousands or even millions) of compounds in a single process. These compound libraries can be made as mixtures, sets of individual compounds or chemical structures generated by computer software. Combinatorial chemistry can be used for the synthesis of small molecules and for peptides.

#### Ivanovo State University of Chemistry and Technology

*renamed again, becoming Ivanovo State University of Chemistry and Technology. The ISUCT has a multi-level system of higher education: bachelor – 4 years*

The Ivanovo State University of Chemistry and Technology (Russian: ?????????? ?????????????????? ??????- ?????????????????? ??????????????) or ISUCT (?????) is a public university located in Ivanovo, the administrative center of Ivanovo Oblast, Russia. Research priorities of the ISUCT are concentrated in chemical technology, chemistry and engineering.

The purpose of the award is "To publicly recognize eminent chemists who, through years of application and devotion, have brought to the world developments that enable everyone to live more comfortably and to understand this world better." Medalists are selected by a national jury of eminent chemists...

#### Willard Gibbs Award

*sulfur; for his contributions to organic chemistry through championing the solution of organic problems through synthesis and study of tailor-made compounds*

The Willard Gibbs Award, presented by the Chicago Section of the American Chemical Society, was established in 1910 by William A. Converse (1862–1940), a former Chairman and Secretary of the Chicago Section of the society and named for Professor Josiah Willard Gibbs (1839–1903) of Yale University. Gibbs, whose formulation of the phase rule founded a new science, is considered by many to be the only American-born scientist whose discoveries are as fundamental in nature as those of Newton and Galileo.

Green chemistry metrics

*was designed by Barry Trost as a framework by which organic chemists would pursue “greener” chemistry. The atom economy number is how much of the reactants*

Green chemistry metrics describe aspects of a chemical process relating to the principles of green chemistry. The metrics serve to quantify the efficiency or environmental performance of chemical processes, and allow changes in performance to be measured. The motivation for using metrics is the expectation that quantifying technical and environmental improvements can make the benefits of new technologies more tangible, perceptible, or understandable. This, in turn, is likely to aid the communication of research and potentially facilitate the wider adoption of green chemistry technologies in industry.

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