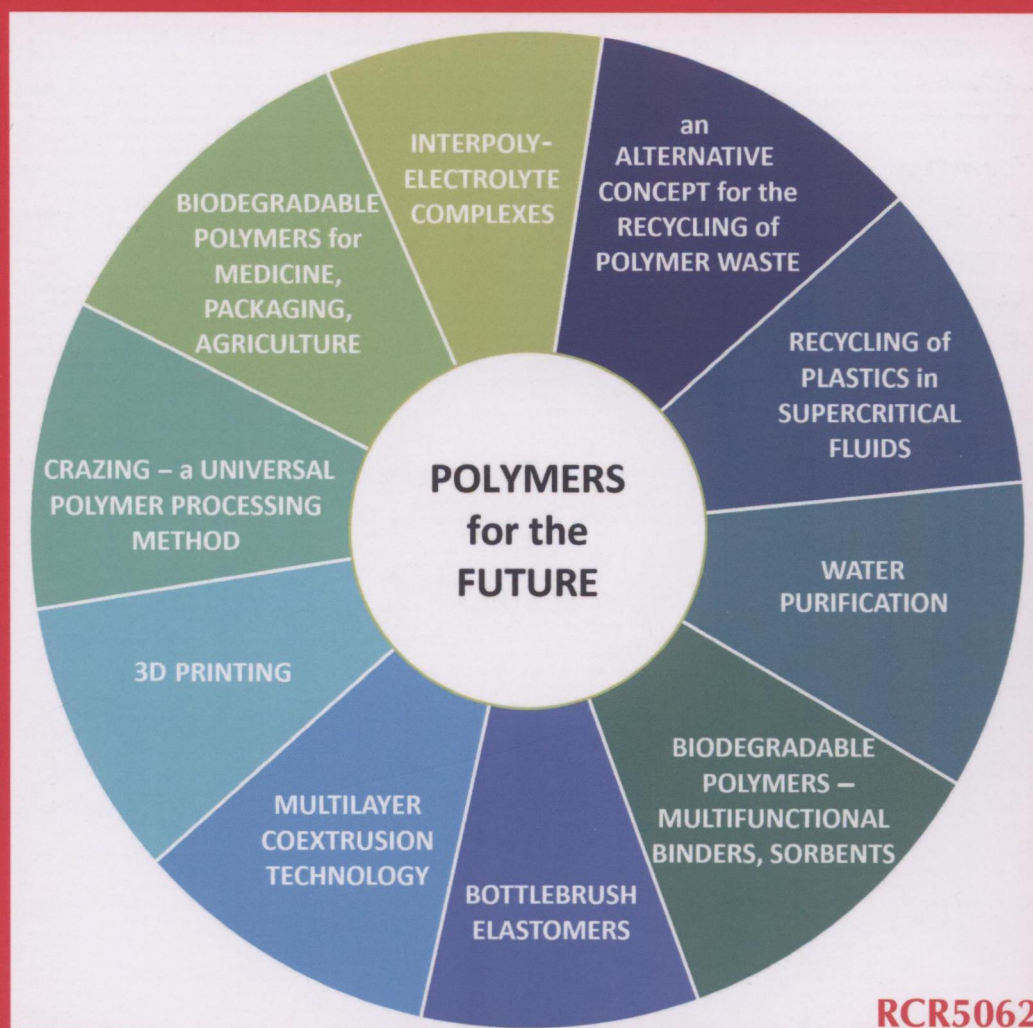




# Успехи химии



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Polymers for the future

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# Успехи химии

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**RCR5062** Полимеры будущего

**R.R.Ikreedeeagh**

**RCR5064** Recent developments of Fe-based metal-organic frameworks and their composites in photocatalytic applications: fundamentals, synthesis and challenges

# Russian Chemical Reviews

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Polymers for the future

RCR5062

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The main challenge of modern polymer science is to search for ways of further development of polymer civilization, which obviously includes living organisms on the Earth, without harmful consequences for civilization and the planet in its entirety. The review considers approaches to handle the problem of environmental accumulation of plastic waste. Promising trends in the development of polymer technologies, which can significantly reduce the amount of waste produced, are highlighted. Separate Sections address original methods of additive manufacturing technologies, such as the extrusion printing technique to produce multilayer films, 3D printing by using high-temperature polyimide materials, new functional siloxane oligomers and hydrogels for medical uses. Much attention is paid to the development and applications of biodegradable materials in medicine, packaging industry and agriculture. An analysis of the European strategy for plastics and plastic disposal demonstrates that it has a number of limitations due to high energy requirements and changes in Earth's carbon balance. The modern approach to plastic waste management having no these disadvantages is briefly outlined.

Bibliography — 1233 references.