

Polysaccharides as future sustainable materials

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Polysaccharides (PS) are abundant biopolymers that can be produced in large scale and are relevant for food, health, and materials. They are common denominators for combining chemical engineering, chemistry, material science, bioscience, biotechnology, and medicine to create a completely new generation of sustainable products and to enhance human and planet health (Figure 1) [2]. However, PS still face several challenges in sustainable processing, control and design of structure-property relationship and fabrication of functional materials. Their potential to tackle great challenges remain locked and unexploited. In this talk, we will address challenges and opportunities of PS covering functional therapeutics, functional prevention, personal care, and sustainable processes. Functional therapeutics involves the creation of new biomaterials for tissue engineering, targeted drug delivery and encapsulation. Functional prevention involves the holistic of product design and formulation without health threatening additives or components. Personal care focuses on design of sustainable products such as cosmetics and personal hygiene products. Sustainable processes involve the development of new processes combining chemical and biochemical processes using green solvents. Future directions and the importance of interdisciplinary and joint venture initiatives between PS scientists and technologists, policy makers and industry are presented and discussed.

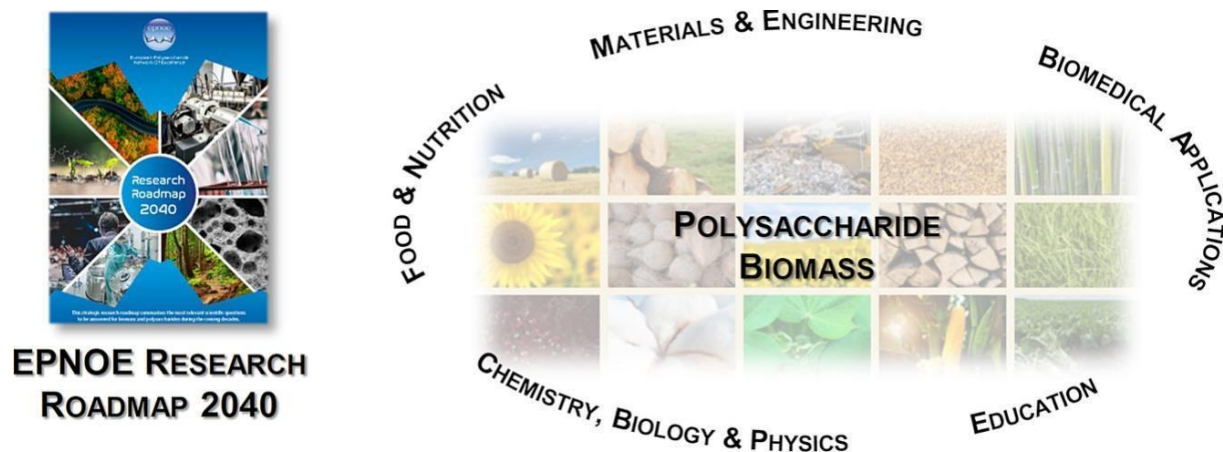


Figure 1. Polysaccharides are safe and will be central to the world of tomorrow as a transition to sustainable technologies is crucial for the future of humanity.

References

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