

A study identifies the top 50 life and biological sciences and technologies driving innovation in the bio-based sectors in Europe.

The study “Life and Biological Sciences and Technologies as Engines for Bio-based Innovation”, funded by the European Commission, DG Research and Innovation has been published and is now available for download from the website of the Publications Office of the European Union.

Life and biological sciences and technologies will open up different research and innovation approaches in a number of applications and market segments and will contribute to address some of the most crucial economic, social and environmental challenges we face nowadays. A consortium coordinated by Fraunhofer Institute for Systems and Innovation Research ISI and including BTG – Biomass Technology Group and ICONS S.r.l. identifies the novelties expected to drive innovation in the bio-based sectors in the coming ten years.

The authors have started from a broad review of existing literature and integrated it with the analysis of first-hand patent data, an EU-wide online survey, stakeholder consultations and three expert workshops. This approach has allowed identifying the most important 50 bio-based innovations that have the potential to contribute to bringing Europe at the forefront in bio-based innovation by 2030.

Such technologies are expected to bring a positive impact on several research and innovation sectors, while improving citizens' quality of life and making industrial production more sustainable. As explained by Dr. Sven Wydra, coordinator of the project and senior researcher at the Fraunhofer Institute for Systems and Innovation Research ISI, investing in life and biological sciences and technologies can be an innovative solution to a number of emerging economic, social and environmental challenges: “These bio-based innovations have a high potential to improve EU citizens' quality of life and the environment, by making industrial production more resource efficient and sustainable, reducing emission of greenhouse gases, recycling plastic and other waste, replacing fossil-based resources with bio-based ones, and providing strategies against emerging diseases”.

The ultimate goal of this exercise is to provide policy makers with data and forward looking scenarios which will support them in implementing strategies able to drive bio-based innovations in Europe by 2030.

Sven Wydra states that “the list and characterization of the most promising bio-based innovations in combination with the policy analysis and potential future framework conditions can set the basis for tailor-made strategies of European, national and regional policy makers”.

The full report can be downloaded from the website of the Publications Office of the European Union alongside the collection of factsheets presenting the top 50 selected bio-based innovations in four fields: Plant, Marine, Environmental, Industrial biotechnology. Each factsheet comes with an analysis of maturity level, expected impact and priority issues for overcoming existing hurdles.

The study has been funded by the European Commission in the light of the EU 2018 Bioeconomy Strategy and its Action Plan together with the studies “Carbon economy” and “EU Biorefinery Outlook to 2030”, to support research and innovation policies on bio-based products and services.

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Further information

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