

**NOVAMONT, THE BIO-BASED MATERIALS, AND ITS EXPERIMENT OF SYSTEM-BASED ECONOMY**

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Catia Bastioli was born in Foligno on 3 October 1957. After graduating in Pure Chemistry in 1981 at the University of Perugia where she obtained top marks, in 1985 she started attending the school of Business Administration (“Alti Potenziali Montedison”) at the Milan Bocconi University.

Project Leader from 1984 to 1988 at the Guido Donegani Institute for the Montedison Strategic Composite Materials Project, and Project Manager for "Biodegradable Materials from Renewable Sources" at the Ferruzzi Research and Technology Center, Ms Bastioli entered Novamont in 1991 as a Director, becoming Technical Director in 1993, and then Managing Director in 1996. Today she is Chairman and Chief Executive Officer.

Catia Bastioli has been a member of EU working groups such as the Committee for “Renewable Raw Materials” of the Directorate General Industry and the ECCP (European Climate Change Program), the Environment Advisory Group of the Directorate General Research.

She is a member of the Executive Committee of PlasticsEurope Italia and President of the KyotoClub Association. She has been a member of numerous Advisory Boards set up by Research institutes and university spin-offs.

Formerly President of Assoscai, Italy’s Association for the Environmental Sustainability and Competitiveness of Enterprises, she was also elected member of board of directors of Finpiemonte (regional development agency) by the Piedmont Regional Authority. Since 2004 she has been a lecturer in the Faculty of Pharmacy/Biotechnology, at the "Amedeo Avogadro” University of Eastern Piedmont.

Author of more than 100 papers on various scientific and industrial subjects published in International Journals, she has also contributed to international reports dealing with renewable materials on behalf of leading institutional organizations. She has been an invited speaker at international conventions on the subjects of renewable raw materials, biorefineries, intellectual property and plastics and bioplastics in general. She is the author of the “Handbook of Biodegradable Polymers”, published by Rapra Technology Limited in 2005. Ms Bastioli is the inventor of more than 80 patents and patent applications in the sectors of synthetic and natural polymers. The patents in the sector of starch-based materials are a significant part of the Novamont patent portfolio.

Catia Bastioli has won numerous international awards for her discoveries in the field of starch-based biodegradable materials; most notably, on April 18, 2007 she was nominated for the “European Inventor of the Year 2007” for her patents filed in the years 1992-2001.

On July 4, 2008, the Faculty of Mathematics and Natural and Physical Sciences of the University of Genoa granted her an /Onoris Causa /degree in Industrial Chemistry.

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**Abstract**

The wise use of natural resources, technologies and innovation are the key factors towards a sustainable and inclusive model able to shape a new system of thinking about development. The

experience of the chemical industry constitutes a good lesson for the renewable energy and raw materials sector. Taking into account the increased speed of development over the last few years, globalisation and the fact that instead of mineral oil-based substances food crops are now involved, foolish use of these resources could cause greater harm than that done by improper use of chemicals. As with mineral oil, nature provides us with an enormous range of raw materials from which it is possible to synthesise various chemical intermediates which are similar to those obtained from fossil raw materials as well as a wide variety of molecules and processes which are extremely interesting yet hitherto unexplored. As a consequence of energy-related and environmental problems, renewable raw materials such as vegetable oils, starch from corn and potatoes, cellulose from straw and wood, lignin and amino acids are becoming increasingly important as industrial feedstocks. By resorting to physical, chemical and biological processes these materials can be converted into fuel, chemical intermediates, polymers and specialities in general for which mineral oil has to date been used. The development of products from renewable raw materials may represent a significant contribution to sustainable development in light of the potential for using less energy to produce them and in light of the wider range of waste disposal options with low environmental impact. It also represents a golden opportunity for developing vertically integrated systems, involving both farmers and industrial businesses in a joint development effort. However, the future of the sector will be determined by strategies implemented both locally and internationally. We should focus on local biodiversity, multiplying opportunities provided to us through investigating a range of vegetable materials and local waste products and by products, with an integrated supply chain rationale, reducing the need for transport as far as possible and maximising the creation of knowledge circuits and integrated products with the various local players (universities, research institutes, high schools, voluntary associations, the agricultural sector, institutions and small and medium scale companies). To give an example of prudent use of local resources, we can consider the deindustrialization processes which involve manufacturing sites in most developed countries and are a source of serious concerns in terms of employment, environment and territorial regeneration. The problem could be faced through the integration of the old industrialized areas in local agricultural economic systems, the efficient management of resources (impact minimization), the introduction of environmental innovations in a variety of sectors and a public-private cooperation based on principles such as quality, entrepreneurship, inclusive growth, knowledge economy and focus on cultural heritage and landscaping. The added value of such local transformations consists in the reproducibility of the model in other different territorial contexts. This concept of a Bio-refinery which is integrated into the local region and that Novamont is implementing with determination since many years, is an important element in its approach to innovation and may also represent an example of a new corporate model, a project which links the company to the local region and which creates a strong base from which to launch a company in the international market. Matrica the J-V between Novamont and Polimeri Europa hosted in the deindustrialized chemical site of Porto Torres in Sardinia will be the demonstrative case of relevant dimensions of a third generation fully integrated Biorefinery according to Novamont vision.