**2G BIOFUELS FROM BIOMASS GOING COMMERCIAL**

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Power, heat, transport, fuels and chemicals could all be derived from lignocellulosic biomass using integrated manufacturing complex**,** the biorefinery.

Our Proesa® technology processes different types of no food biomass to produce biofuels together with high valuable co-products which are used to make chemicals on a large and commercially economic scale.

It uses a wide range of biomass feedstock (residues of agricultural biomass, waste wood…) coupling improved conventional processing unitary operations (enzymatic hydrolysis and fermentation) with highly innovative ones (pretreatment and viscosity reduction)

The radical innovation of this technique is that without “sacrificing” the food production, it result to be very competitive with tradition fuels.

Mossi Ghisolfi started its investigation into this sector at the beginning of 2007, with “Proesa project”, a 120 million euro research and development project to produce 2G bioethanol from lignocellulosic material.

Thanks to the success of Proesa® technology and as a result of this huge investment in the field of biofuel and green chemistry , Mossi Ghisolfi has built an industrial plant to produce bioethanol from lignocellulosic material in Crescentino, (VC) able to convert energy crops ( such as Arundo Donax) or agricultural residues (wheat straw) into 40.000 ton/y of liquid biofuels (in operation since 2013). All the ethanol produced is now commercialized.

The next step in the biorefinery validation is to allow and increase a more economical utilization of all secondary streams and co-products of biorefinery for the production of advanced biofuels, for example the lignin (main co – product of the process) is converted to energy through boiler and co-generation system.

Our Group is working also on other projects which aim the development of a technology for jet fuel synthesis based on renewable sources like lignin.

The key to the success of the second generation technology depends on the assumption that the production of biofuels from renewables sources and environmental concerns can and must become a firm and indivisible combination. Therefore, the complete valorization of all lignocellulosic biomass fractions (cellulose, emicellulose and lignin) is a key point for the definition of a complete value chain sustainable biorefinery. The production of both chemicals and fuels in an integrated biorefinery allows the achievement of sustainability end economics goals simultaneously.

So Proesa® is today the reality for the production of low cost cellulosic sugar at industrial scale and it is expected to be the enabler of a green based revolution of chemicals production.

*Dario joined* ***Mossi Ghisolfi Group*** *in 1990.
Within Mossi Ghisolfi Group, he has had several positions: PET Production Technologist in Cobarr S.p.A.; Start-up Manager, Process Engineer and Technology Transfer Manager in Sinco Engineering S.p.A.; R&D European Director in Sinco Ricerche S.p.A.

Currently is member of the Mossi Ghisolfi Executive Committee (B.O.D) and Corporate Responsible for Research, Technology and Development.*

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