Du Pont Gains Hard-Fought Majority Stake in Pan Nan Seed
DuPont has secured its third-year offer to buy a majority stake in South Africa’s largest seed company, overcoming that country’s stiff opposition to the foreign ownership with pledges to keep a ring on pricing and production rules. The deal with Pan Nan Seed, which should immediately trigger full financial gain for DuPont, with new products expected to be on the market in August and September, according to Paul Schleicher, president of DuPont Pioneer, DuPont’s agricultural seed unit.

German Economists Emphasize Need for Bio Fuel in 2011 but European Sales improve
In the same six months to a year, German chemical producers did not materialize, the industry association Verband der chemischen Industrie (VCI) said in July. But while the sector looked dynamic, compared with counterparts in other European countries German companies performed relatively well, the association said. Profits in the German chemicals industry in the first three quarters of 2011 were flat at the 2012 level and thus below previous forecasts: Business expectations, however, show signs of getting slightly better than at the end of 2011. Along with new macromolecules, polymers, consumer chemicals were the only segments to see any growth.

For the full year 2013, VCI is still forecasting its earlier 1.5% rise in chemical output and a sales increase of the same dimension to €390 billion. The association predicts slight gains in Germany and the rest of Europe in the second half, with export growth slightly less dynamic than earlier.

Lanxess Reports Successful PBT Trials with Bio-based DBO Feedstock
Trial production of polybutylene terephthalate (PBT) from the Biomass-Unter- lagen, Germany, plant of specialty chemicals producer Lanxess, using bio- based 1,3-butanediol (DBO) according to the process developed by U.S.-based Genomatica, have proven that the renewable route to the polybutylene terephthalate (PBT) market is viable. In the test, Lanxess fed 20% of the 100% bio-based DBO into the continuous production process at the ~80,000 kg/batch polymerization facility it operates at its Leverkusen, Germany, plant. The company said it found that the properties and the quality of the resulting product were “fully equivalent” to those made from fossil-based DBO.

Also using the Genomatica process, Japanese chemicals and plastics producer Toray in May it had developed a partially bio-based 1,3-butanediol which, according to the company, could be made as pure polymer made from conventional DBO. Toray also has made prototypes of molded parts, and before scaling up to commercial production, plans to share samples of its bio-based PB with customers to help develop market demand.

EU Chemicals Output Shrinking in 2013
European chemicals output will contract by 1% this year before returning to modest growth of 1% in 2014, says the EuChemC, the European Chemical Industry Council. The 2013 figure is lower than the 0.8% slight expansion announced in December 2012, as the economic development to date has been weaker than expected.

The gradual recovery will be founded on stabilization of industrial production in Europe after two years of weakness and a modest rise in exports. But the European chemicals sector, which generates 5% of the continent’s gross domestic product and employs 1.2 million, will face tough competition from lower-cost sources, including from outside Europe and feedstock.

“The chemical industry is still facing headwinds from the weak European economy,” EuChemC President Kurt Beck said. “The chemical indus- try continues to be exposed to strong international competition, mainly due to the cost advantage of many European polycrystalline producers. Companies need to address the energy and feedstock issue if we are to preserve Europe’s industrial core.”

The 1% fall in European chemical output during 2013, compared with 2012, will be the second consecutive year of modest output decline. Improved industrial markets for which demand is stronger in some individual countries, both automotive and construction remain generally weak. The European construction output also remains at historically low levels. Cefic forecasts a return to modest growth for chemicals output in 2014 of 1.5%. Petrochemicals and fine and specialty chemicals sub-sectors are both predicted to grow by 2%. Consumer chemicals, a subsector that will remain in positive growth territory in 2013, will further return by 1.5% next year followed by a 3% uptick for inorganic basic chemicals.

Bayer Confirms 2015 Start for Commercial-Scale CO2 to Polyols Unit
Bayer MaterialScience has confirmed 2015 as its start-up date for com- mercial-scale production facility of polyol for polyurethane-based foams made from CO2 feedstock. The new plant at Dormagen, Germany, will have capacity for “several thousand tons” of polyols.

Output will not be sufficient to accommodate market demand, but CEO Patrick Thomas said the Bayer group may opt to license its patented technology. The company has a 14-month exclusivity agreement for the technology, meaning the CO2-derived polyols could be used to produce thermoplastic polyurethanes, he added.

In early 2011, EMS began producing test quantities of the PU foam from petrochemical sources. The German company, with an eye to developing foam properties equivalent to those of conventional grades, the test project known as Dream Reaction and later Dream Production was supported financially by the German federal ministry for research and technology (BMBF) and included input from research partners such as RWTH Aachen University, which developed the catalyst. CO2 was sourced from a nearby power plant owned by German energy utility BWE.

The technology was not meant to be a direct competitor to polyols, but to benefit the environment, the said, the BMI’s chief CO2. The new plant would replace some of the fossil raw material traditionally used exclusively. The company also expects the new process to have economic advantages, as the waste streams can be used for biogas.

Green Air Travel – Continuous growth of air traffic and its corresponding increase in CO2 emissions can be offset by high-quality bio jet fuels that meet all kerogen-related parameters. Some technologies are already on offer and on the market. An innovative new technology uses bio-based nonfood resources and residues and, therefore, broadens the raw material basis for bio jet fuels and has the potential to supplement existing technologies.

Chemical News - Alternative Air Bio-based Fuel from Non-Food Resources and Products Meets Kerosene Standards –

Air Aviation Industry Growth and Related CO2 footprint
Aviation is, among all transport sectors, the most growth-oriented. Annual growth rates are projected at approx. 4.5% per year throughout the next decades. The majority of this growth is expected to be linked to increased tourism. Technological progress in the aviation industry mainly new energy-efficient planes could replace the current consumption of fuel. A flight without fuel would be impossible with the current fuel sector, aviation-related CO2 emissions would increase by 3% per year. The aviation industry expects to rely on liquid fuels for the next 30 to 50 years, so no alternative for biofuels – like biofuels for cars – exist for airplanes.

This would put even more pressure on the CO2 footprint of aviation. Already today, 12% of transport CO2 emissions and 3% of all synthetic CO2 emissions are due to aviation. European airspace consumed 53 million liters of kerosene in 2010, the world wide aviation 200 million tons it is expected to rely on liquid fuels for the next 30 to 50 years, so no alternative for biofuels – like biofuels for cars – exist for airplanes.

Challenges for Aviation Companies
Governmental forces are discussing joint targets and implementing sev- eral regulatory actions in this context. The European Aviation Industry, in its Renewables Energy Directive (RED) to use 10% renewable energy in the transport sector by 2020 and is shooting for 2 million tons of “sustai- nable” kerosene by 2020. Details can be found in the technical paper “A Performing Biofuels Supply Chain for EU Aviation” of DG ENER 2011.

Aviation companies agreed on a voluntary commitment to grow only in a climate-neutral way from 2020 onward. They are, however, confronted by several challenges. Their cost pressures are tremendous, and fuel costs are continuously increasing. More than 30% of operating costs in aviation are due to fuel. Essential biofuels for land transport like biodiesel and bioethanol cannot be used in airplanes because of their fuel properties – air transport requires biofuels that are chemically identical to fossil kerosene.

State-of-the-Art Processes for Bio Jet Fuel
State-of-the-art processes for producing alternative bio fuels in a bio-based route do not exist: it is possible to produce both jet fuel and diesel fuel using the same hydro-treating catalyst, but two separate processes are required: one for diesel and one for jet fuel. Since the processes producing kerosene are further during the Fischer-Tropsch (FT) process. In particular, FT catalytic process in this context. First, there is the so-called Fischer-Tropsch (FT) process. In particular, FT technologies have been developed in Europe and the US, but despite high costs, FT is still used: More than 30% of operating costs in aviation are due to fuel. Essential biofuels for land transport like biodiesel and bioethanol cannot be used in airplanes because of their fuel properties – air transport requires biofuels that are chemically identical to fossil kerosene.

Greasoline Technology as a New Approach
Greasoline Technology is starting from bio-based fats and oils like HBE. Greasoline, however, is based on a gas phase reaction technology and therefore can transform raw materials of significantly lower quality, because residual water and inorganic residues are separated in the gas phase separation step. The catalyst for the gas phase reaction phase is highly tolerant to impurities. As a result, bio-based residues and side- products can be used as feedstock for Greasoline technology.

Primary products are hydro- carbon chains identical with fossil- fuel diesel and kerosene fuels. Most of the diesel components can be transformed into the kerosene boil- ing range via isomerization. The technology also produces bio-based alkylated benzenes, which are cru- cial for jet fuel properties, especially as expanding agents in seals as well as for lubrication. These products cannot be obtained by hydro-trai- ts (US). Here, Greasoline has the potential to be a feedstock for jet fuel.

The basic technology does not need extra hydrogen, external, because the formation of coke as a byproduct on the catalyst automatically lowers the carbon-hydrogen balance within the reactor. A subsequent hydro- hydrogenation step with little hydrogen con- sumption is optional to guarantee all product quality parameters. The cat- alyst itself is regenerated after the biocatalytic reaction in an industrially established process. The process is currently performed in a pilot plant at Oberhausen; partners, mainly in the oil industry, are publishing plans for a demonstration plant.

Conclusion
German, in the Axol Kraft, head of Biojet fuel unit, Freunholdh Emsch, has the potential to be a feedstock for jet fuel.