



## TNO and IPCOS strategic alliance on Advanced Process Control solutions for the Glass industry



From left to right: Christiaan Moons (IPCOS: Sales Director), Peter Van Overschee (IPCOS: CEO), Roeland Brugman (TNO: Business Development Manager), Piet van Santen (IPCOS: Managing director), Peter Paul van 't Veen (TNO: Head of Department) and Johan Reijers (TNO: Project Manager)

On September 30<sup>th</sup>, 2006, TNO and IPCOS have formalized their strategic alliance to intensify their cooperation in the area of advanced process optimization and control solutions for glass furnaces and production. Over the years, there has been an intensive collaboration between both companies resulting in Advanced Process Control projects and a unique technological solution in which TNO's well-known Furnace Simulation software GTM-X is applied on-line in combination with the IPCOS multivariable and model predictive INCA Controller. This combination of core competence, expertise and software lead to the industrial application of the LEONARDO Technology (i.e. Rigorous Model based Predictive Control), enabling the glass producers to make a substantial step



in process optimization and to go into a new dimension of production flexibility and efficiency.

In the new configuration, the companies are synchronizing further their business development, research programs and product development activities for the glass industries. This will accelerate the industrial roll-out of the LEONARDO technology within all glass producing sectors and the overall deployment of the two software tools that enables the industrial users to make their own on-line monitoring and High Performance Control systems.

The approach of applying comprehensive simulation models for on-line production optimization is also applied within other process industries in which both organizations are active. Within this new strategic alliance it is decided that for the glass industry TNO will take the lead in the business development and project installations. Mr. Johan Reijers, who was responsible for marketing and sales in glass industry at IPCOS, has changed position and is now working at the headquarters of TNO Glass Group. IPCOS still provides the industrial control technology, the software tools and the required man power for the installations.

In order to provide the industry with the required software tools GTM-X and INCA, TNO will further develop the Leonardo software suite. This software toolbox allows the user to design, engineer and install of the on-line model predictive control systems without performing extensive tests on the actual production line; also with this unique approach the multivariable controller has always the actual process model available for checking and optimizing her control actions, leading to an operation window with no limitations. In the closed loop application, the supervisory control layer directs the available PID controllers automatically, 24 hours per day in de optimum way. In the open loop approach (GPS), it is an extreme powerful monitoring and soft-sensing tool for process technologist and operators necessary for process optimization aimed at improved energy efficiency and higher production yields.

IPCOS will fully focus on the further development of their general purpose INCA platform for Advanced Process Control applications, required for the INCA based control systems within the process markets such as ammonia, oil and gas, cement, power and more. Customers in the glass industry all over the world benefit from the broad industrial project execution experience of the IPCOS engineering staff and field engineers.

“Given the success over the past years further intensification of the cooperation between IPCOS and TNO was a natural thing to do. In this new setting strengths of both parties are combined, which will contribute directly to the benefits of our clients” says Peter Paul van ‘t Veen, Manager Process Modeling and Control Department of TNO.

“TNO has been one of our main partners both in research and development as in project execution since the start of IPCOS. Their domain expertise, captured in simulation models and software tools, combined with IPCOS’ expertise and APC solutions lead to



the unique and extremely powerful LEONARDO technology ." says Peter Van  
Overschee CEO of IPCOS.



*Company Profile:*

TNO is a global technology and knowledge-providing organisation of around 5000 experts. With worldwide recognition for its innovative approach and fundamental glass knowledge, **TNO Glass Group** supports the glass industry with optimization and innovation of their industrial glass melting, forming and coating processes by providing the latest technologies, tools and process knowledge.

Besides the glass dedicated Process Simulation and Control Software for off-line process optimization and on-line High Performance Control Systems, TNO is also preferred partner for addressing topics related to for example glass quality, energy and emission reduction, process and experimental research, furnace technology and measurements, product testing (CE Marking) and for providing international training courses.

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IPCOS, 'Creators in Control', describes exactly what IPCOS is and what they do. IPCOS creates state of the art advanced process control solutions and offers the customer all the engineering services that are needed to install these solutions and keep them up to date. IPCOS focuses primarily on the petrochemical, the glass manufacturing, the power and the oil production industry. Since the company puts a lot of effort in research, they deliver state of the art products that are way ahead of their competitors. The office in Boxtel, The Netherlands is the excellence centre for the Chemical and Glass industry. The office in Leuven, Belgium, is the headquarters of IPCOS and the excellence centre for the Chemical, the Power and the Oil production industry. In these offices state of the art products like INCA, RaPID, Presto and PathFinder are developed.

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