

# NEWSLETTER

Technobis Group

Number 4  
April 2010



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## INTRODUCTION

It is really difficult to decide where to start in this newsletter because so much has been going on during these last three months.

Let me start with personnel: there are a lot of new faces in our company, new students involved in our ongoing aerospace research projects and two new project managers. Since January this year, Rolf Evenblij has been a project manager for medical and humanoid systems, and Ronald van Eijk started in March as the head of all projects in aerospace applications.

We have also been very successful in attracting grant money this year. The PITON (medical) project is a go, and the Dutch government and the province of Zeeland have given the green light for development of our Deminsys Ultra Flight Approved TRL5 system. We worked out a joint agreement with Chess Haarlem for the development of the new electronics platform based on the new systems architecture.

In January we attended Photonics West, which was held in San Francisco this year. We showed our products Deminsys, Cyclops and Pulse, the latter two being new products of Technobis Mechatronics (TBM). During this event we officially signed a resellers contract with Alexander Huber of Polytec, who will be our reseller in the German-speaking European countries for Deminsys.

Technobis Fibre Technologies (TFT-FOS) became an official System Integrator of Micron Optics (MOI) systems for the Netherlands last January. We are very proud to have been selected by MOI as their partner.

As you can see, there is once again a lot to read about in this newsletter. I hope you will enjoy reading the details.

**Pim Kat, CEO**



Technobis Group is a developer and supplier of high-tech instruments and modules for the most dedicated national and international OEM companies.



**Technobis Fibre Technologies (TFT-FOS):** Technobis Fibre Technologies is specialized in the development and supply of total solutions in high-speed, multi-sensor fiber interrogators and sensors.



**Technobis Mechatronics (TBM):** Technobis Mechatronics is specialized in carrying out complete product development projects, going from an idea to a successful turnkey product, prototype or series product. With more than fourteen years of experience, we have become a supplier of mechatronic systems to many companies in a range of markets.



## TFT GOES INTERNATIONAL

The first quarter of 2010 has been an exciting start of the year for TFT-FOS. We've been involved in closing deals, strengthening existing coalitions and exploring new continents.

### Europe

TFT-FOS is proud to enhance the collaboration between Polytec GMBH and TFT-FOS. Polytec, the German distributor of commercial laser technology to industrial and research markets, will be representing TFT-FOS in the German-speaking countries in Europe. The professionals of Polytec will be responsible for the sole distribution of the Deminsys in Germany, Austria and Switzerland. Polytec is committed to providing the highest level of satisfaction to our customers. They have offered local expert



application assistance, as well as product service and support. Polytec has been ISO-9001 certified since 1994. Polytec is dedicated to continually improving their performance in accordance with our mission.

### USA

This year's Photonics West was a good show for the Technobis Group. Not only was the venue in San Francisco fantastic, but the attendees were super as well. We would like take this opportunity to thank all visitors and customers for visiting the Technobis booth.

After Photonics West we traveled on to Atlanta to meet with the people of Micron Optics (MOI). During our stay we signed a contract intensifying the relationship with MOI by becoming an official systems integrator. We are committed to our new role and we will do whatever we can to provide high-quality service and support to our MOI customers.

### Asia

TFT-FOS has taken its first steps in the Asian aerospace market by participating in the 2nd international exhibition & conference on Civil Aviation 'India Aviation 2010' in Hyderabad. TFT-FOS generated quite a bit of genuine interest with our Deminsys product and its capabilities. The conference turned into a real success for us thanks to the local support from NAG, NBSO, MELSS and the Dutch embassy.

We are very much looking forward to working together with local partners and R&D centers. TFT-FOS is eager to expand our local presence by committing time and resources to further developing the Indian market.

## NEW FACES AT TECHNOBIS FIBRE TECHNOLOGIES



Wilson Ko

**Wilson Ko** is a student of aeronautical engineering at INHolland University of Applied Sciences. His specialization is lightweight constructions. The use of composite materials in structures has been on the increase in recent decades. When advanced composite materials are used, new inspection, maintenance, and repair methods are needed. One of these inspection methods is Structural Health Monitoring using Non-Destructive Testing. The objective of Wilson's thesis is to develop a new, innovative, non-destructive testing method for the inspection of composites constructions based on the Deminsys and FBG sensors. Wilson will first set up a test method and conduct experiments. He will analyze the outcome data and relate this to the status of

the composite material. After this phase, he will conduct damage localization using wave propagation in the composite material.

**Rolf Evenblij** joined Technobis Fibre Technologies in January 2010 as a project manager primarily focusing on FBG application projects for medical environments and robotics. For the last 10 years Rolf has been active in various fields of expertise related to software design and development for industrial environments, specifically in the fields of physics and photonics. Major applications include RFID tracking, CAD/CAM for laser material processing, process control, and optical sensor-based train detection. For the past five years Rolf has been working for his own



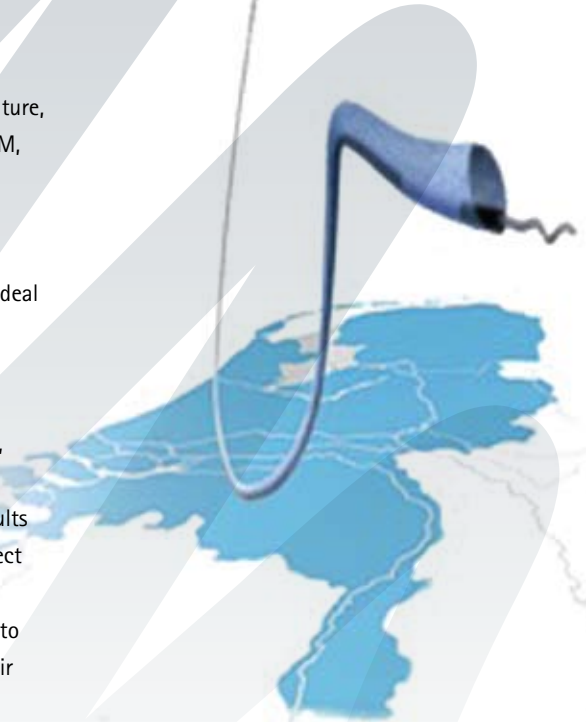
## PITON

Minimally invasive interventional techniques reduce the overall costs of the health care system and help societies to cope with the increasing difficulty of providing care of acceptable standards. The type of interventional techniques most needed, yet least provided, are those procedures with which one can access deeper structures in the human body with minimal damage to healthy tissue. Current technical limitations associated with surgical navigation using instruments of minimal dimensions mean that the traditional, open approach is still used in the majority of all interventions.

The objective of the PITON project is to develop steerable, MRI-compatible robotic instruments with precise force sensing for accurate tissue characterization and dexterous navigation in percutaneous interventions. The global challenges of the project form a good match with the competencies of the Dutch High-Tech Systems sector. The PITON consortium

consists of innovative partners with the essential complementary expertise for creating viable medical robots. The miniature, steerable mechanisms developed by DEAM, real-time biocompatible sensors by TFT-FOS, and MRI-compatible equipment by De Koningh, together with the systems validation expertise of HemoLab, are an ideal combination to ensure that all technical challenges can be realized as part of the PITON project. Current links with major manufacturers, such as Microline Pentax, Isodone and Teleflex, will enable the consortium to swiftly implement the results after project completion. The PITON project is giving these companies, together with TU Delft, TU/e, and TNO, the opportunity to form strategic alliances, and to bring their innovations together in an economically viable industry. The main contribution of TFT-FOS will be the development and realization of a prototype 'Deminsys-Python' interrogator. This device will offer real-time, low-latency, multi-channel signal output

PITON



for the registration of FBG sensor output. TFT-FOS will also invest in the development of optic fibers with suitable mechanical properties for the proposed applications.

company, PhiTech, which is specialized in the application of information technology in physics. This has allowed Rolf to develop expertise in a wide range of industrial applications. Rolf is also a board member of the Photonics Cluster Netherlands. This alliance organizes activities to encourage entrepreneurship in Photonics in the Netherlands. It also builds relationships with international companies and institutes of knowledge, and encourages the development of international business contacts.

**Coen Achterkamp** will soon get his degree in aeronautical engineering from the INHolland University of Applied Sciences and will continue working on the TFT-FOS project 'Structural Health Monitoring

of Primary Aircraft Structures'. Coen will develop a method for impact identification by using FBG sensors and the Deminsys interrogator. The project is a continuation of work performed by other students. Impact identification consists of impact localization and impact energy determination. The identification is based on strain waves induced by impact. Tests are primarily performed on a simple Carbon Fiber Reinforced Polymer (CFRP) plate, supported at its corners, to get some insight into wave propagation in anisotropic material and wave reflection at edges. Subsequently, stiffeners are added at the CFRP plate and their effect is studied. Finally, the results of previous tests are used to identify impact on a CFRP wing part.

Coen Achterkamp





## CYCLOPS & PULSE

Technobis Mechatronics BV has signed a distributor contract for the Pulse laser module and the Cyclops laser combiner.

### Pulse

Technobis Mechatronics has acquired the worldwide rights for the distribution of the 4PICO Pulse laser in the life sciences. The Pulse laser has fast rise and fall times, making it very suitable for the application of fluorescence lifetime imaging. The Pulse diode laser unit combines excellent beam quality with high-speed analogue modulation. The intensity can be monitored using the high-speed output terminal. 4PICO will remain responsible for the distribution of the pulse laser in the optical media industry.



4PICO, High-speed laser unit, Pulse

### Cyclops

4PICO has developed a laser combiner, known as Cyclops, for Technobis Mechatronics. This very compact unit can be fitted with three internal laser diodes. It has two external free ports to support DPSS laser sources for combining a total of up to five lasers. Each laser can be individually controlled and monitored through the Windows-based interface. The combiner is mainly used in the field of fluorescence microscopy, but other potential applications, such as sorting, are emerging.



Technobis Mechatronics, Laser combiner, Cyclops

## MEET US AT:

### Technobis Fibre Technologies

FOHEC exhibition

Swindon, United Kingdom, May 18-19, 2010



### Technobis Mechatronics

Laser Expo 2010

Pacifico Yokohama, Japan, April 21-23, 2010



## MAKE AN APPOINTMENT FOR A DEMINSYS, CYCLOPS, OR PULSE DEMO:

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Please send us an e-mail at [info@technobis.nl](mailto:info@technobis.nl) for more information and the latest versions of the Pulse and Cyclops datasheets.