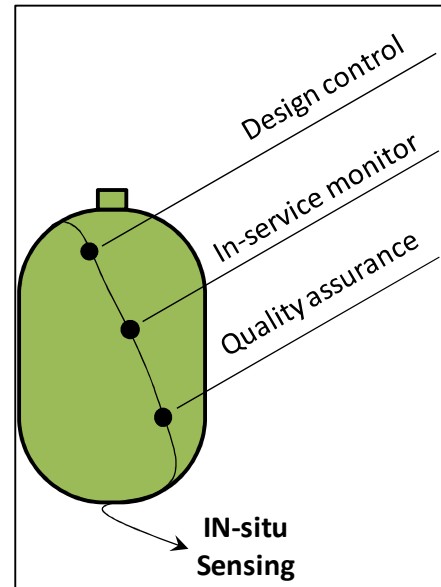


COM&SENS®

Com&Sens is Realizing Self-sensing Filament-Wound Pressure Vessel Technology Embedding DTG® Sensors.



Sensing your Composite Pressure Vessel (CPV), Simply Makes Sense!

The concept of a self-sensing composite pressure vessel (CPV) is in fact very simple. It is based on combining composite pressure vessel technology and embedded sensing technology to monitor the actual in-situ condition of the vessel. By integrating special fiber optic sensors (DTG®s), it is possible to learn exactly how the vessel behaves during its complete lifetime.

The fact that you can use the same sensing technology during production, design prototyping and optimization during its in-service use, makes the CPV becomes self-sensing.

Self-sensing CPV options

Com&Sens offers the CPV market the state-of-the-art monitoring technology employing embedded DTG® sensors. This self-sensing provides the following features:

- Fully-integrated non-intrusive sensors
- Multi-point sensing (up to 20/channel)
- Accurate in-situ characterization
 - Validation of finite element stress and strain simulations
 - Application of fiber optic sensors in multiple filament wound layers to obtain in-situ stress/strain profiles
- Quality assurance
 - During the filament winding process and post-curing
 - During prototyping and testing

Take advantage of Com&Sens experience! It can provide the ability to continuously monitor (online) your production process during winding and curing, or simply to monitor your vessel response during pressurization (loading and unloading), while the system is in-service.

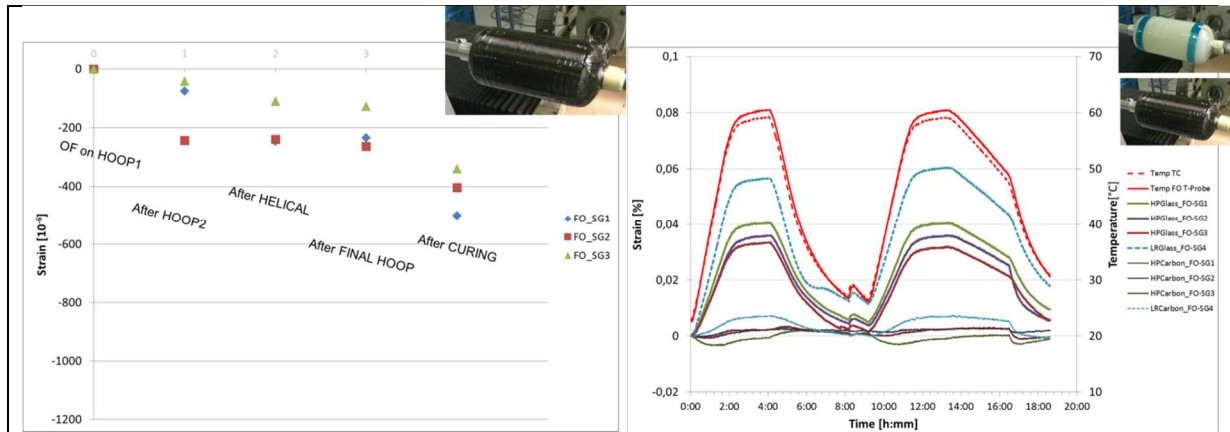


Figure 1: In-situ fiber optic sensing response during filament winding (left), during post-process temperature cycling (right)

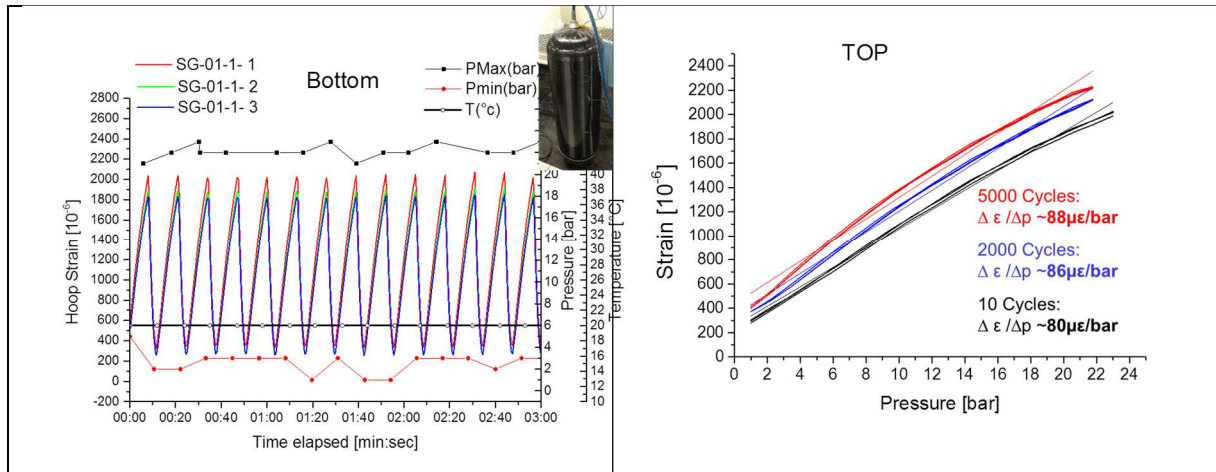


Figure 2: In-situ fiber optic sensing response during pressure cycling (left), Strain vs Pressure change as function of number of cycles (right)

The team at Com&Sens provides support across the complete process from CPV prototyping, testing, and validation up to the real operation of the vessel. They are able to develop customized sensing configurations, which suits your application.

What is the Gained Benefit?

In a matter of days, you can identify the real response and performance of your CPV. For a longer term, you can assure that your product is safe to operate at all times, even at elevated pressure levels and after thousands of loading cycles. In one sentence, the sensors can give you real-time feedback on the actual design of your pressure vessel.

Feel free to contact us to discuss your needs and ideas in how Com&Sens can assist you in developing your future self-sensing products.

Contact information

 <p>Ghent – Zwijnaarde</p> <p>LOCATION – IIC GHENT</p>	<p>www.com-sens.eu</p> <p>info@com-sens.eu</p> <p>or direct contact:</p> <p>Dr. ir. Geert Luyckx Tel: +32 (0) 486 95 32 04 gluyckx@com-sens.eu</p> <p>Dr. ing. Eli Voet Tel: +32 (0) 476 32 18 79 evoet@com-sens.eu</p> <p>Technologiepark 3 PB22 Zwijnaarde 9052</p>
---	--