Are you familiar with our industrial-grade accredited inspection services?

- Accredited laboratory in line with DIN EN ISO / IEC 17025, to qualify and validate new non-destructive testing (NDT) processes for industrial applications
- Accelerated time-to-market and opportunity for qualified, norm-compliant deployment in industrial applications as well as for new in-house developments or custom adaptation of innovative NDT technologies, even in fields where norms have not been established
- Certification of the corresponding quality management system in accordance with DIN EN ISO 9001
Even with tubes that are already segmented, this novel technique provides grave benefits for the manufacturing process, as in contrast to a conventional inspection the inspection specimen does not have to be removed from the production process but can simply be inspected by passing it.

In addition to the optical inspection, further inspection methods such as thermography or ultrasound can be adapted.

**Prerequisites**
- Nonmagnetic materials
- Nonconductive materials

**Benefits**
- Continuous inline inspection of products in endless manufacturing process
- Contactless technique minimizing mechanical stress of inspection system and specimen
- Minimum of handling technique required (no moving parts)
- Different inspection procedures possible

**Solution**
HOBITS is a new development of the Fraunhofer Institute for Nondestructive Testing IZFP. This novel levitating sensor carrier is the first tool worldwide to allow the continuous inspection of the inner wall side of nonmagnetic and nonconductive hollows. The system uses a magnetic mounting for its autonomous levitating positioning within the inspection specimen. It operates continuously with wireless and contactless supply.

Equipped with a LED as light source and a camera, HOBITS provides continuous recordings from the inner side of the hollow.

The extruded product, i.e. a tube or a hose is moved over the sensor while remaining in the production process. Thus, a seamless quality assurance without interruption of the production process is guaranteed.

**Situation**
Due to difficult accessibility of spatially extended hollows such as extruded pipes, the close inspection of their inner surfaces proves to be an inspection challenge. Currently established approaches operate either from the outside of the test specimen or with inspection lances or even with inspection pigs that move through the inner volume.

External inspection is limited to procedures passing through the wall material to an extent that allows reliable acquisition of volume information. Inspection lances or pigs are limited in their applicability by edge conditions such as cable and lance length or battery life. Also the costs in technical equipment, time and handling are relevant.

For example, the optical inspection of the inside of an extruded pipe directly behind the extruder by established methods is not reliable because the material may not be sufficiently illuminated. Besides, in immediate neighborhood of the extruder the pipe is not yet structured in segments, so that lance or pig testing is ruled out.

**HOBITS:** Sensor carrier and stator

Prototype of the HOBITS sensor carrier

HOBITS: Sensor carrier and stator

Zoom: HOBITS prototype with inspection specimen (transparent)