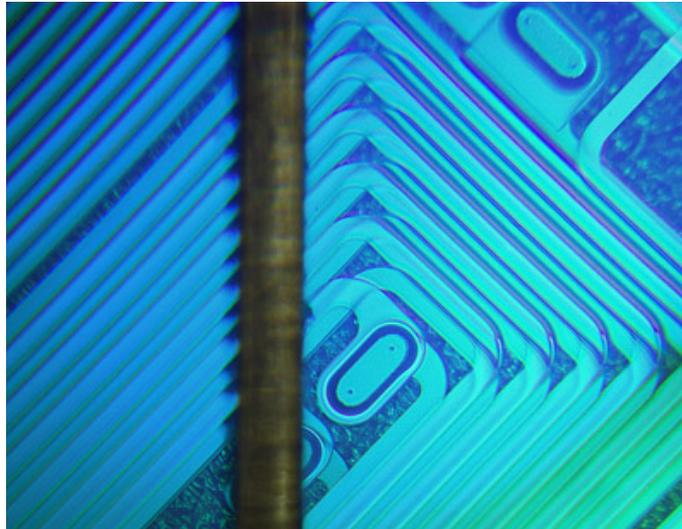




STW Technic Brings the Latest in Thin Film Technology to Sensor Applications



Thin Film Technology (TFT) sensors have not been adopted as widely as possible because of a lack of knowledge about the possible applications and high manufacturing costs. STW is developing innovative technology to change this.

NORCROSS, Ga. - May 26, 2015 - [PRLog](#) -- STW Technic, a premier manufacturer of mobile controllers and measurement technology, brings the latest in Thin Film Technology to sensor applications.

Thin-film technology (TFT) has long been used to deposit thin films on the most diverse materials and to structure them with high precision. However, this tried and tested technology has not been available to most users up to now due to the high investment in process development and production systems. STW is changing this.

The production of the thinnest films is the basis of semi-conductor manufacturing and is, thus, very widespread. Despite this, the potential of thin-film technology has still not been fully leveraged. Lack of knowledge about the possible applications, high development outlay and high investment in production systems often impede additional applications and their adoption.

There is significant potential for using thin films in making sensors. Thin films react sensitively and reproducibly to forces, deformation, temperature, light and chemical substances. Additionally, with appropriate design, thin films allow the detection of magnetic fields and electrical currents with a spatial resolution of a few μm . The fact that substrates made from steel can also be used differentiates TFT from semi-conductor production.

The thin films can consist of nickel, chrome, copper, SiO_2 , TiON and NiCr among others and can be applied with extreme adhesion to all smooth surfaces in strengths of up to $1.5 \mu\text{m}$. A structure with a width of up to $10 \mu\text{m}$ is possible. One of the potentials of TFT that has hardly been utilized until now is the direct application on application-specific deformation bodies, such as bending beams. The application on $50 \mu\text{m}$

thin plates has, for example, already enabled a new process for magnetic position measurement.

Careful evaluation is necessary to verify whether thin-film technology would be suitable for a given task. The advantages of TFT are as follows: extremely diverse and multi-layer arrangement of different materials, minimal space requirements, low unit costs, high stability and robustness (up to 300 °C), high-precision and reproducible dimensions, extremely good adhesion. The limitations of TFT, which include high initial costs, complex development and production processes, limited substrate geometries, restricted material selection and exacting connection technology, need to be considered in engineering decisions.

A feasibility evaluation and concept development is a good way to establish if a problem can be solved elegantly with thin-film technology. What must be decided is whether a four-figure dollar sum should be invested in order to build prototypes. A number of additional stages are necessary until the first series parts are produced and can be delivered to the customer – simulation, product and process design, sample manufacturing, verification and initiation of serial production in compliance with ISO/TS 16949. STW offers services to work with clients in all these stages. More information on STW's thin film sensors are available on STW's website at

<http://www.stw-technic.com/products/sensors/pressure-transmitter/thin-film-sensors/>

Clients are invited to leverage STW's thin-film expertise for their in-house production systems. STW works with clients throughout the implementation process - from concept through to series production - thus enabling them to incorporate thin film solutions in their own products

About STW Technic: STW (www.stw-technic.com) an award-winning provider of a full spectrum of freely programmable controllers, I/O modules, pressure sensors and telematics to a wide range of industries such as mining, construction, agriculture and oil and gas. STW controllers, sensors, I/O modules and Telematics units have attained a leading role in these industries due to their rigorous testing, high quality German engineering and unmatched flexibility. All of STW's products are mobile off-highway rated. STW (www.stw-technic.com) is also in the forefront of developing and prototyping hybrid drive technologies – generators and motors – for mobile applications

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