

**ESPY31**

**Piezoelectric Meter for  
Polymer Sheet**

## New Alliance for Polymer Testing

aiACCT Systems and Electrosiences are joining forces in the field of piezoelectric polymer testing. The first product resulting from this collaboration is a new sample holder that makes it possible to directly determine the  $d_{31}$  coefficient of piezoelectric polymer films.

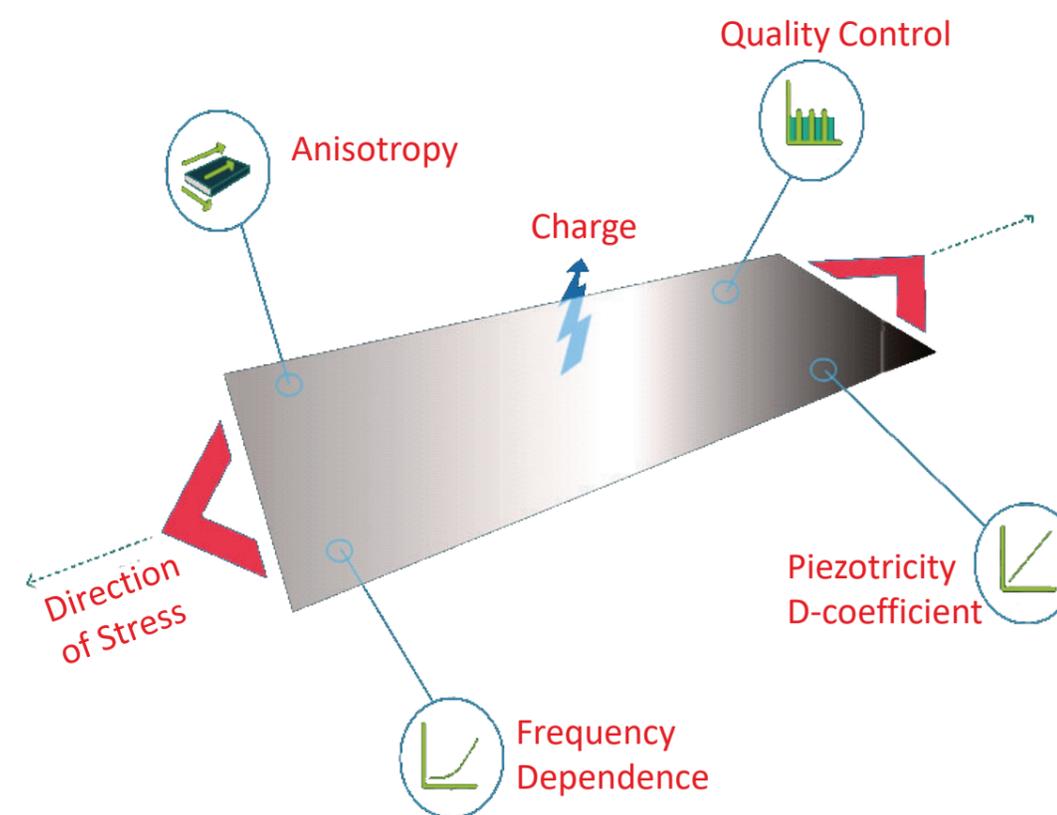


Markys G Cain, founder and CEO of Electrosiences Ltd., has expertise in piezoelectric characterisation, and developed the  $d_{31}/d_{32}$  tester for polymer and other soft piezo materials characterisation. In the prototype stage, he proved that measurement systems based on these techniques worked. His next step was to find a partner that could make the system ready for series production and bring it to market. We are delighted that Markys thought of aiACCT Systems right away. We both agree that piezoelectric polymers will be used in an increasing number of applications in future, from sonar and hydrophones to tactile sensor systems. Once again, we are at the cutting edge of developing direct methods for measuring the ferroelectric and piezoelectric behavior of polymers.

## The ESPY31



The ESPY31 enables quick and precise measurement of the piezoelectric  $d_{31}$  and  $d_{32}$  coefficients of piezoelectric polymer films or other soft piezoelectric materials such as fibres or membranes. It contains an integrated force measurement cell. It is a highly sensitive measuring device that can also be used to measure other electric properties, like P-E hysteresis or capacitance.



## ESPY31 in Combination with the aixPES

The ESPY31 can be combined with standard aixPES tools and extends the possible characterisation to direct testing.

- Access to multiple measurement tools
- ESPY31 can be used as extension of existing systems (addon required)
- Complete system for piezoelectric measurements
- Additional amplifier and control-units for measurements in high temperature- and voltage ranges



## ESPY31 in Combination with the TF Analyzer

A special TF Analyzer 1000 acts as a control and data collection system. In addition, it comprises the aixPplorer software which controls the ESPY31.

- Powerful solution for measurements with the ESPY31
- Can be extended for additional measurement tools
- Integrated software for controlling and evaluating measurements



## ESPY31 - Key Facts

### Flexible configurations

The setup can be ordered as upgrade to existing systems or with a TF Analyzer 1000 (addon required)

### Proven accuracy and repeatability

aiACCT guarantees an overall accuracy of the setup

### Easy to use sample preparation

The systems comes with a separate mounting and cutting aid for easy preparation of the sample and a transfer tool to place the sample in the device.

### Complete material characterisation

In combination with our aixPES tools, it covers the entire range of piezoelectric polymer characterisation.

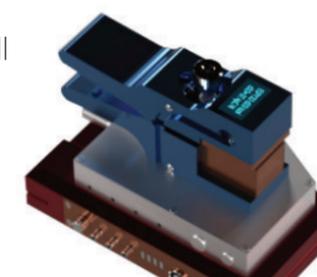


## Key Specs

- Sample size: 4.5 mm x 2 mm, prepared with a supplied sample cutting aid
- Sample thickness: 10  $\mu\text{m}$  to 200  $\mu\text{m}$  (up to 1 mm with optional clamps)
- Sample materials: electroded piezoelectric polymer including PVDF
- Piezoelectric coefficient measured:  $d_{31}$ ,  $d_{32}$
- Piezo charge coefficient sensitivity: 0.01 pC/N
- Frequency range: 0.1 Hz to 10 Hz
- Loading range DC: 0.1 N to 5 N
- Loading dynamic AC range: 0 N up to 1000 mN (depending on system)
- Repeatability: better than 0.5 % at standard operating configuration
- Patent pending

## Coming Soon - New Systems

Based on the cooperation, we will soon launch more tools for testing piezoelectric properties, like the ESPY33.



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