

Olena Grafska

**TECHNOLOGY AND
ENGINEERING OF RESONANT
ELECTROMAGNETIC
SPECTROSCOPY**

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An essential part of any production process is the active monitoring of the process parameters online in real time. In this case, special importance is attached to the absence of the need for direct contact during measurements.

The most promising method of active real-time control is non-contact control or monitoring methods in the mode of electromagnetic resonance spectroscopy.

Despite the high parameters of technical characteristics of the proposed technique and technology, especially in terms of sensitivity and accuracy of measurements, constructively the module for the implementation of technology in the processes of measurement and identification of parameters of technological liquids and materials, including even such as - signs of corona virus infection, is extremely simple.

The design of the module is flexible and allows multiple applications of the sensor design to be realised, thus extending the area of use.

According to the type of sensor, a sensor in the form of a flat coil made in the form of an electronic micro board may be used, a single layer board variant may be used, a multi-layer board variant may be used, and combined variants may be used.

The same control, monitoring and identification of measurement results can be used for all variants.

Keywords: *Spectroscopy; Resonance spectroscopy; Electromagnetic spectroscopy; Electromagnetic resonance spectroscopy; Technical characterisation; Active control methods; Real-time active control processes; Flexible module design; High parameters of technical characterisation; Sensitivity and measurement accuracy; Sensor design application options; Electronic micro - boards; Module design and components; Measuring analytical instruments*

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