

Instruments and chemical sensors for the control of gases leaks on the enterprises of “Belneftekhim” concern for oil and chemistry

G. F. Karkotsky¹, D. I. Mychko², Zh. A. Tsabkala²

¹*Enterprise INNOVATSENSOR Ltd., Minsk, Belarus*

²*Belarusian State University, Minsk, Belarus*

e-mail: dimbgu@mail.ru

Among important analytical tasks one should concern the task of sensing devices development for the systems of anti-wreck automatic protection, technical processes automatic control, and local detection of under explosive concentrations of burning gases and vapors of volatile flammable liquids on the enterprises for gas, oil and chemical industry, and also on other enterprises, where formation of dangerously explosive mediums is possible.

Enterprise INNOVATSENSOR starting from 1998 solves the tasks of such kind and develops devices on the basis of the sensors worked out jointly with the researchers of the Belarusian State University. The goal of these investigations is to ensure import substitution on the enterprises of “Belneftekhim” concern. INNOVATSENSOR enterprise possesses the special permission (licence) of the Department for work safety supervision in industry of the Emergency Situations Ministry of the Republic of Belarus for the activities in the area of industrial security. All the types of sensing devices are included into the list of state registration of the State Committee for Standardization of the Republic of Belarus.

At the present time INNOVATSENSOR enterprise produces sensors and gas analyzers on their basis for the following purposes.

1. Control of the under explosive concentrations of dimethyl formamide with its content in the air in the range from 0 to 50 % (“Polimir” plant, OJSC “Naftan”, Novopolotsk).
2. Control of the under explosive concentrations of carbon disulfide in the air of working area and storage rooms (OJSC “SvetlogorskKhimvolokno”, Svetlogorsk).
3. Persistent automatic measurement of methane volume concentration in air in the salt mines (JSC “Belaruskali”, Soligorsk).
4. Control of the under explosive concentrations of methane on the compressor stations of gas transmittal pipelines of JSC “Beltransgas”, and in the closed stalls of garage for compressed gas transport (Gas Transmittal Pipelines Administration, Neswizh).
5. Control of the under explosive concentrations of ethyl alcohol in the working areas of JSC “Dionis Grape Wines Factory” (Minsk region).
6. Control of the under explosive concentrations on paint and varnish manufacturing line of PUE “Ruzhansk furniture factory” (Ruzhany, Brest region).
7. Control of the under explosive concentrations of fatty acids methyl ethers on the fabrication system of Organic Synthesis Plant, OJSC “Mogilevkhimvolokno”.

In the report scientific approaches to development of the existent and prospective types of sensors, which find or can find application for the above mentioned purposes, are discussed.