



KONWERSATORIUM INSTYTUTU FIZYKI UMCS

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Negative Ion Formation by Thermal Surface Ionization

Sulfur dioxide is one of the most harmful pollutant gases in the atmosphere. It is a by-product of the combustion of fossil fuels. It is also released into the environment as a result of natural processes. Sulfur dioxide is harmful to fauna and flora, and its presence in the atmosphere has a huge impact on the climate. SO₂ is also a very important compound in geological and environmental research. Most of the currently used methods of analyzing the sulfur isotope composition require conversion sample to sulfur dioxide. All these circumstances, as well as the discrepancies in the explanation of the origin of SO₂- anions in previous low-pressure experiments, lead us to investigate the process of electron attachment to sulfur dioxide molecules by thermal ionization mass spectrometry.

In my speech, I will describe the formation of negative ions from SO₂ gas through the use of thermal ionization on a hot surface. An explanation of the formation of the corresponding detected anions and the likely channels of their formation will be provided. Some of the observed effects indicate the formation of anions from H₂SO₄ molecules. The isotope analysis of the measured anions suggests that the measurements of the SO₂- anions signal should be the most appropriate in the study of the composition of sulfur elements in the samples.

Uprzejmie zapraszam wszystkich pracowników, doktorantów i studentów Instytutu Fizyki.

Dr hab. Ryszard Zdyb, prof. UMCS
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