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**Nina Bogdanova<sup>1,2</sup> and Mihaela Koleva<sup>3</sup>**

(<sup>1</sup>Institute of Nuclear Research and Nuclear Energy, BAS, Sofia; <sup>2</sup>LIT, JINR

<sup>3</sup>Institute of Electronics, BAS, Sofia)

## **Orthonormal Polynomials Approximation of Different Types of Silver Nanoparticles Spectroscopic Data**

Our Orthonormal Polynomial Expansion Method (OPEM) in one-dimensional version is applied to describe the original different silver nanoparticles spectroscopic data. In this way we construct the orthogonal (orthonormal) polynomials by Forsythe for presenting the curves. The corridors defined by the errors of given data with the help of the weights construct the optimal behavior of sought for curve.

We have received two curves from experiments in thousands points for analysis, but two of them are important - with ten and five laser pulses. This paper presents a continuation and a generalization of a previous investigation. We have chosen the subintervals in two curves. The most important subintervals of spectra data are investigated, where the minimum (the Surface Plasmon Resonance Absorption) is looking for. The results are given in table and figures.

This study describes the mathematical description of Ag nanoparticles spectroscopic data produced by laser approach in a ZnO medium forming a AgNPs/ZnO nanocomposite heterostructure.