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Fitting by orthogonal polynomials of silver nanoparticles spectroscopic data

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Our original Orthonormal Polynomial Expansion Method (OPEM) [1] in one-dimensional version is applied for first time to describe the silver nanoparticles spectroscopic data [2,3]. The experimental errors in variables are included in weights for approximation - different in every point. In this way we construct orthogonal (orthonormal) polynomials for presenting the curve. The corridors of given data by the help of the weights define the optimal behavior of sought for curve with the help of some criteria.

We have received four experimental curves in thousands points for analysis. We have chosen one subinterval in one of them. The most important subinterval of spectra data is investigated, where the minimum (surface plasmon resonance absorption) is looking for.

The received results from our numerical experiments are compared with other theoretical curves for the data. We hope that with our description we have pointed the experimental work to regular direction.

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Short biography note

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