Current Topics in Biophysics (Zagadnienia Biofizyki Współczesnej) vol. 33(suppl.A), 2010, 157-161

Coordinate systems for determining the electron spin resonance (ESR) lineshape

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The investigation of interactions between paramagnetic centres can be carried out by analysis of the shape and the width of the resonance curve, normally having the form of the first derivative of absorption. In the case of solids, when dipolar and exchange interactions are present, the ESR profile is known to consist of a Lorentzian central part with wings of Gaussian form. We developed a method of linear anamorphosis, in which the integral or the derivative of the resonance curve will be utilized. In special coordinate systems we have presented the ESR lineshape of ultramarine blue. This presentation proves that the central part of resonance curve of ultramarine blue is Lorentzian in shape and the outer wings are Gaussian.