

Spatial structure of absorbing vapor in a transversely heated graphite atomizer with a probe

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Abstract

The dynamics of the spatial structure of absorbing layers of silver atoms and molecules and condensed particles of sodium chloride and potassium sulfate in a transversely heated graphite atomizer during atomization of these substances from a platform and evaporation of their condensate from a tungsten probe is investigated by shadow spectral visualization. The fractional probe atomization significantly decreases the spatial inhomogeneities of absorbing layers, the level of nonselective absorption, and the suppression of atomic absorption. As a result, the photometric error decreases. The use of a probe made it possible to increase the maximum amounts of sodium chloride and potassium sulfate allowable for interference-free atomic absorption analysis in a silver sample from 100 to 4000 μg and from 20 to 750 μg , respectively. These values exceed by a factor of 5-8 the acceptable levels in the generally accepted procedure of atomization from a platform with the Pd-Mg modifier. © Nauka/Interperiodica 2006.

<http://dx.doi.org/10.1134/S0030400X06060129>
