

Poster Presentation

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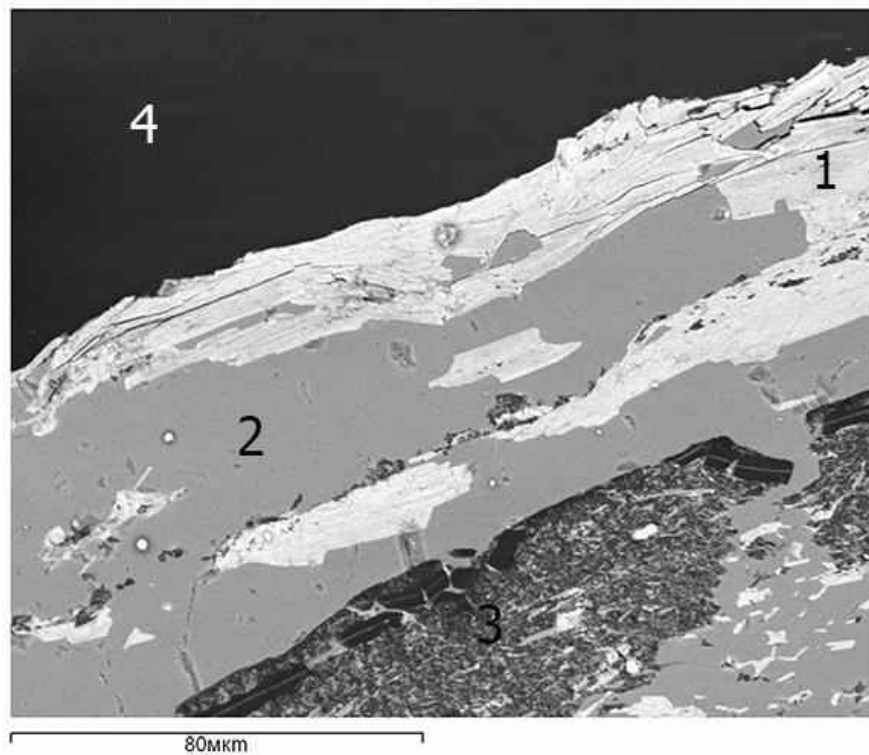
Crystallography of Vanadium-bearing Micas (Bol'shoi Karatau Range, Kazakhstan)

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The mineralogical study of vanadium and vanadium-bearing micas from Cambrian carbonaceous-cherty formation of North-West of Bol'shoi Karatau range has allowed to establish four basic groups: 1. chernykhite (V₂O₃+V₂O₄ up to 23%); 2. Ba-roscoelite (V₂O₃ up to 18%) [1]; 3. vanadium-bearing muscovite and phengite (V₂O₃ up to 5%) and 4. secondary mica – V-Ba-phengite (V₂O₃+V₂O₄ up to 6-8%) [2]. Physical, optical properties as well as crystal structural parameters depend on vanadium content. The crystal structure of micas was determined by X-ray and electron diffraction techniques. The polytypes and unit cell parameter *b* (Å) are the main structural characteristics [3]. 2M1 polytype is spread among vanadium micas. Polytypes 1M and (1M+2M1) are only in vanadium-bearing micas – muscovite and phengite. The minimum *b* 9.03-9.04 Å is typical for this group. For secondary mica - V-Ba-phengite the parameter *b* varies from 9.6 to 9.09 Å. On the figure the secondary mica (1) is associated with mica without vanadium (2) and carbon-clay-chert (3) into polished section, where epoxy resin (4). For Ba-roscoelite *b* is equal 9.07-9.15 Å; for chernykhite - *b* 9.18 Å.

[1] E.W. Heinrich, A.A. Levinson, *Amer.J.Sci.*, 1955, 253, 1, 39-43, [2] E.A. Ankinovich, A.I. Bakhtin, G.K. Bekenova, *Zapiski vsesoyuznogo mineralogicheskogo obshchestva*, 1992, 4, 61-69, [3] M.F. Brigatti, E. Caprilli, M. Marchesini, et al., *Clays and Clay Minerals*, 2003, 51, 3, 301-308



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