Funginite and secretinite in coals Southern Pechora basin

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Funginite and Secretinite are one of not enough studied components inertinite maceral group. Earlier these components were called Sclerotinite. These components are rare in the Permian coals and sedimentary rocks (1-3 %). Content funginite and secretinite a increased to 10 % in Permian coals of their Nechensky layer. Nechensky low-rank coal deposits located in southern Pechora basin. The well section consists from is thin-is rhythmical alternating layers of different types coals, coals argillites and clays.

Secretinite occur in 15 samples, contents <1 - 9.5 %, on the average 3-5 %. The maximum content is revealed in the high part of a layer coals argillite, in other samples don't observed defined dependence to concrete types of rocks, it meets both in argillite, and in semibrilliant coals. The small part of inclusions secretinite it is concentrated in gelification layers and it is possibly characterized by the transferred forms. Funginite is found out in 29 samples, its content changes <1 – 10 %, on the average 5 %. Variation of funginite also non-uniformly on a section also meets in all rocks types. Its maximum content of 10 % mets in a layer coals argillite, height 100 mm. Often secretinite occurs together with funginite, e.g. in a layer of semimatte coal (обр 408-42) occur inclusions funginite (to 8 %) and secretinite (to 2 %). High contents the inertinite maceral group and minerals matter occurs together with for samples with inclusions funginite. Probably, these components indicate to oxidizing conditions sedimentation and swamp conditions with active hydrodynamics.

Classical geothermobarometry versus pseudosections: Practical experiences and strange encounters

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Practical experiences with geothermobarometry of the classical type and with pseudosections have revealed a number of particularities that might be of interest to both petrologists and geodynamicists trying to transform *P-T* data into geodynamic models. As an example, Fe-Mg geothermometry with grt-cpx in an eclogite can err considerably when ferric iron is not measured but calculated from stoichiometry. Such a deviation by >200°C could only be detected after Moessbauer microspectroscopy on garnet and clinopyroxene. The average*PT*-method (av*PT*) of THERMOCALC however, as a multi-equilibrium technique, is not as sensitive to these Fe-Mg exchange reactions and produced the correct result in the first place. Av*PT* has the potential to highlight a wrong choice of 'phases in equilibrium' but can also give (apparently correct) results on disequilibrium assemblages if its statistical elimination procedure is not used with proper diligence. Pseudosection modelling of eclogites with PERPLEX revealed two weaknesses. One is intrinsic to PERPLEX: significant changes in the shape and topology of some assemblage fields when the grid refinement parameters are changed. The second is due to the activity-composition models, mainly of amphibole, which results in more or less unrealistic assemblages and or mineral compositions, no matter what amphibole model is used. Two examples of THERMOCALC pseudosection modelling also produced significant inconsistencies with observation, i.e. 'unpublishable' diagrams. In a metapelite, the rather open secret of poor thermodynamic data for Mn-phases resulted in the fact that the calculated garnet composition isopleth just would not match those observed in the rock. In a metabasite, quartz predicted as stable in a large *P-T* range around peak conditions is not found in the rock – reason hitherto unknown. As 'failed results' usually (not always) escape publication, such weak points of methods are probably discussed less than they ought to be. The main problem is still the lack or scarcity of good thermodynamic data for many substances. Whereas pseudosection and geothermobarometry calculations are popular tools, we find that segment of experimental petrology which generates the fundamental data largely abandoned today.