

Small-scale processing experiments of feldspar raw material by magnetic separation combined with air gravity concentrating table

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Hydrothermally altered leucocratic igneous rocks make one of the key resources of feldspars for ceramic / glass industries. Obviously, these rocks can contain some minor / accessory phases being considered harmful due to their ability to change colour of ceramic white-ware. Previous studies have shown that the incipient separate (currently waste) contains minerals such as Nb-Ta rich rutile, Li-micas or apatite. Although extensive processing leading to separation of colourants is not commonly used in practice, we have made series of laboratory and small-scale trials in order to increase purity of the feldspar raw material and to evaluate potential use of by-product. In the recent study, we have applied dry magnetic separation combined with air gravity concentrating table. The suggested processing scheme allows for effective separation of Nb-Ta-rich rutile and Li-micas for material with grain size > 0.2 mm. Depending on the amount of raw material processed on the full-scale, the suggested processing approach can generate economically viable amount of Nb-Ta / Li rich concentrates.