Characterization of in-situ Corundum Occurrences in Sri Lanka:

A case study from Badalkumbura, Sri Lanka

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Abstract

Gem deposits can be categorized as primary or in-situ deposits and secondary or sedimentary deposits. All Sri Lankan gem deposits are belonged to one of these gem deposit types. The primary gem deposits are metamorphic deposits and magmatic deposits (Chandrajith & Dissanayake, 2010). According to the Dahanayake et al, 1980 there are three major secondary gem deposit types recognized as alluvial, eluvial and residual in our country. This research is carried out to study the corundum mineralization and to identify primary and secondary deposits in the Badalkumbura area. Primary and secondary samples were collected from Badalkumbura area. petrologcal analysis were carried out using primary fresh rock sample and XRF analysis were done for geochemical analysis of residual soil samples. Sedimentlogical analyses were carried out for river sediments. Corundum mineral were identified in thin section during the petrological analysis of primary rock samples. According to XRF analysis results Al_2O_3 was identified and Ti, Fe were identified as trace element. According to analysis secondary, residual and rock samples the major sources for the gem mineralisation are garnet-sillimanite–graphite-gneiss (khondalite) and skarns. Weathering of source rocks and transportation though the tributaries have formed the secondary gem deposits in law land areas. Further sedimentological analysis interpreted the low distance transportation of these sediments from the source.