

Application of geochemistry to exploration for gem deposits, Sri Lanka

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Abstract

Geochemical analysis of stream sediments, when integrated with heavy mineral surveys, can be used as an effective tool in the exploration for sedimentary gem deposits. Recent research studies carried out by the authors have shown that certain rarer minerals associated with the gem minerals leave a special geochemical signature which could be identified and used in the delineation of areas suitable for further detailed exploration for gem minerals. In the placer gem-bearing terrains located within a high-grade metamorphic terrain in Sri Lanka, it has been found that Sr/Rb ratios, thorium and uranium, fluorine, tantalum, niobium, yttrium and the rare-earth elements can be used as pathfinders in the search for new gem deposits.