

Optimum Heat Treatment Condition for Low Gem Quality Zircon in Sri Lanka

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To increase the earnings from the gem exports as well as to encompass the international gem market it should be upgrade the quality by value adding to low quality natural stones. Dull and dark low quality zircons are commonly found in gem pits in Sri Lanka. As a value addition method for gem treatment, heating is commonly done to improve the color and clarity of gem stones. This research investigated the optimum heat treatment condition for low gem quality zircon. Dark brown zircons from Rathnapura area in Sri Lanka were annealed under reducing atmosphere by using "Lakmini" gas furnace. The annealing temperatures were 700 °C to 1100 °C for 2 hours at each temperature for all the samples. The green, yellowish green and blue colors were obtained by annealing in reducing atmosphere for 2 hours soaking time, respectively at the temperatures of 800 °C, 900 °C and 1100 °C with the highest market value.

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