

Trace Element analysis of Alluvial Diamonds from Myanmar and Thailand by LA-ICPMS

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Alluvial diamonds with no obvious sources (“headless placers”) are found in several areas of South East Asia and Australasia including Myanmar, Southern Thailand (Phuket and Phanga Area). Total of (40) diamonds were analysed for trace elements using an Agilent 7500 ICPMS and 266nm Nd:YAG laser with a new standardisation technique developed at GEMOC, Macquarie University. Carbon was used as the internal standard to correct the ablation yield and cellulose-based synthetic standard and fibrous Jwaneng diamond as external standards. The on-line data reduction Glitter software is used for data processing. The trace element composition and plots, especially REE of diamond provide not only information on the conditions and environment of diamond crystallization but also the potential to identify diamonds from specific sources especially those found in modern alluvial deposits like diamonds from Myanmar and Southern Thailand. . LA-ICPMS is proven to be the most promising technique for the in-situ analysis of trace elements in diamonds as well as other gemstones due to its high spatial resolution and low detection limit, rapid analysis, wide range of elements (LILE, HFSE, REE) compare to other analytical technique