

Title : Gemological Characteristics, Chemical Composition, and Causes of Phenomenal of Rainbow Lattice Sunstone Claimed to be from Tanzania

Author(s) :

1. Thanatchaphorn Somnongharn
- 2.
- 3.

Student ID : 650510462

Student ID :

Student ID :

Major : Gemology

Advisor(s) :

1. Assistant Professor Dr. Weerapan Srichan
- 2.
- 3.

Type of presentation* (choose 1) :

Oral Presentation (เฉพาะ ตัวแทนศ.ที่สาขาเลือกให้นำเสนอแบบบรรยาย)

Poster (กรณี นำเสนอผลงานปัญหาพิเศษ/การค้นคว้าอิสระ)

Cooperative Education (กรณี นำเสนอผลงานสหกิจศึกษา)

ABSTRACT

Rainbow Lattice Sunstone claimed to be from Tanzania, is a rare gemstone belonging to the plagioclase feldspar group. It's intrusive crystal structure exhibits a distinctive lattice pattern and displays several optical phenomenal, including aventurescence caused by metallic or iron oxide plates mostly hematite and magnetite intervening parallel to the feldspar's cleavage planes, When light strikes these inclusions, it is reflected as glittering, metallic like flashes and iridescence related to lamellar structure resulting from exsolution within the plagioclase crystal. This study focuses on analyzing it's gemological characteristics, chemical composition, and the causes of these optical phenomenal. Basic properties include a refractive index of approximately 1.53 – 1.60, an average specific gravity of 2.57 – 2.60, and bidirectional oblique cleavage consistent with a triclinic crystal system. Advanced analytical techniques were used to confirm these findings. Raman spectroscopy revealed peaks indicating feldspar at 452, 474, and 512 cm^{-1} . And peaks in the 200 – 1400 cm^{-1} range that the presence of hematite. And scanning electron microscopy (SEM) was used for elemental components and iron distribution. The results of this study indicated that the lattice structure was formed by the intersection of metallic or iron oxide

*Type of presentation must be matched with an option you choosing on student upload system.

**The abstract can be more than one page and must be approved by project advisor before upload.

plates arranged in multiple directions within the crystal. This arrangement causes varying reflections and interferences depending on the angle of incidence and the observer's viewpoint. It also confirmed that plagioclase is the dominant component of this gemstone, with iron oxide inclusions being the primary cause of the optical phenomenal.

**Type of presentation must be matched with an option you choosing on student upload system.*

***The abstract can be more than one page and must be approved by project advisor before upload.*