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Applications of nuclear analytical methods in the historical glass in Thailand

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Cultural heritage objects are highly heterogeneous. Due to the complex nature of materials and objects, their analysis needs to use extremely sensitive, spatially resolved, multi-elemental and versatile methods that should be as non-invasive as possible and give complementary information at different scales; from the macroscopic to the nanometer scales. In this work, XRF, SEM-EDS, PIXE, EPMA and XAS were used to characterize the chemical composition and microstructure of the historical glass in Thailand such as ancient glass beads, ancient decorative glasses and old-styled gold mosaic glass. It can be concluded that these are powerful tools for investigation of heterogeneous glassy materials.

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