

# PIXE analysis of silicified fossil woods from the Pliocene Genteng Formation, West Java, Indonesia

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## Abstract

The silicified wood is a kind of fossil which the wood cell wall substances are substituted by silica. Not less papers have been to define the silicification of wood. According them, volcanic ash is referred to an important source of silica for wood silicification. Then, we analyzed major elements and trace elements of silicified woods and their adhering sediments by PIXE, after the wood identification by microscopy. Samples were collected from the Genteng Formation which derived from volcanic eruption in the Pliocene and mainly distributed in the Banten area, West Java, Indonesia.

Results showed that the silicified woods contained more than 90 % of SiO<sub>2</sub> with less of Al<sub>2</sub>O<sub>3</sub> compared to their adhering sediments. There was no difference in major chemical compositions between the black core and the surrounding white part of silicified wood, and between sample localities.

Additionally, in the graph showing the relationship between K<sub>2</sub>O content (w %) and SiO<sub>2</sub> one (w %), there was a variety of spot position within sediments from the different localities. This may suggest that the stratigraphical horizons of each sample could be different in details in the Formation.