

## **SILICA MINERALS AND SILICIFICATION OF PETRIFIED WOOD FROM THE MIOCENE SERIES IN NOTO PENINSULA, CENTRAL JAPAN**

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Many silicified wood pieces are found in the Miocene sedimentary rocks of Yanagida Formation in the northeastern part of Noto Peninsula, Central Japan. Yanagida Formation consists of clastic rocks, tuffs, basalt lavas and pyroclastic rocks (welded very often) of dacitic compositions. Most of them might be deposited in terrestrial environments. Silicified wood pieces are often found on the stump or blewed down on the bedding planes between lower sandstone and upper pyroclastic rocks. X-ray powder analyses demonstrate opal-CT and opal-A. Microscopic observations distinguish 2 phase of silica minerals (phase-A and phase-B). Anatomically, phase-A seems to be deposited (sticked) onto the cell wall of wood tissue and phase-B filled the remaining spaces. Morphologically, phase-A seems like lump and phase-B filler in form. Phase-B show higher indices than phase-A and radial extinctions in thick sections. Phase-A should be opal-CT and the early phase of deposition, phase-B should be opal-A and the latter phase.? Those silicification might be performed by hot underground water heated by overlying pyroclastic rocks. In the early stage, the ground water was hot enough and silica grain of opal-CT stucked onto the cell wall of wood tissue. In the later stage, the ground water was cooled and silica deposited as opal-A filling the remaining spaces. Before the ground water cooled to normal temperature, the silicification of wood might be completed.