

# **PETROGRAPHY AND GEOCHEMISTRY OF SILICIFIED WOODS, IN RIO GRANDE DO SUL, SOUTHERN, BRAZIL**

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One of the goals of this study in sedimentary petrology is to unravel the provenance of siliceous cement for silicified woods, probably Mesozoic in age (Upper Triassic), in sandstones very coarse to conglomeratic, not silicified, from "Mata Beds" in Paraná Basin, Lat.29 S and 54 W. Petrographic studies in thin sections more than 15 presented microquartz predominantly, and minor macroquartz and rarely length-slow chalcedony filling voids and cell lumens walls. SEM could identify many kinds of fabrics composed by alfaquartz with different levels of crystal faces organizations filling voids and cell lumens walls. XRD identify alfaquartz predominantly and without opals, this remark had guided to establish one Crystallinity Index for quartz (quintuplet Murata and Norman, 1976). The diffracted range were 68 to 66 and 18 to 36 grades. Three oxygen isotopes analyses inferred for siliceous cement temperatures of diagenesis (100 Celsius) without hydrothermal evidences. Bulk analyses by ICP/MS (3 silicified woods + 1 sandstone) indicated relative enrichment of SiO<sub>2</sub> (96,67% - 98,14%); little quantities of Al<sub>2</sub>O<sub>3</sub> and Fe<sub>2</sub>O<sub>3</sub> and all other major elements were lixiviated. The more important observations on trace elements were related to content of W (498-1020ppm) in silicified woods, and 1ppm in sandstone. The REE were normalized in relation to NASC, the LREE (La and Eu) were partially enriched in silicified woods in relation to sandstone and all other HREE analyzed were depleted.