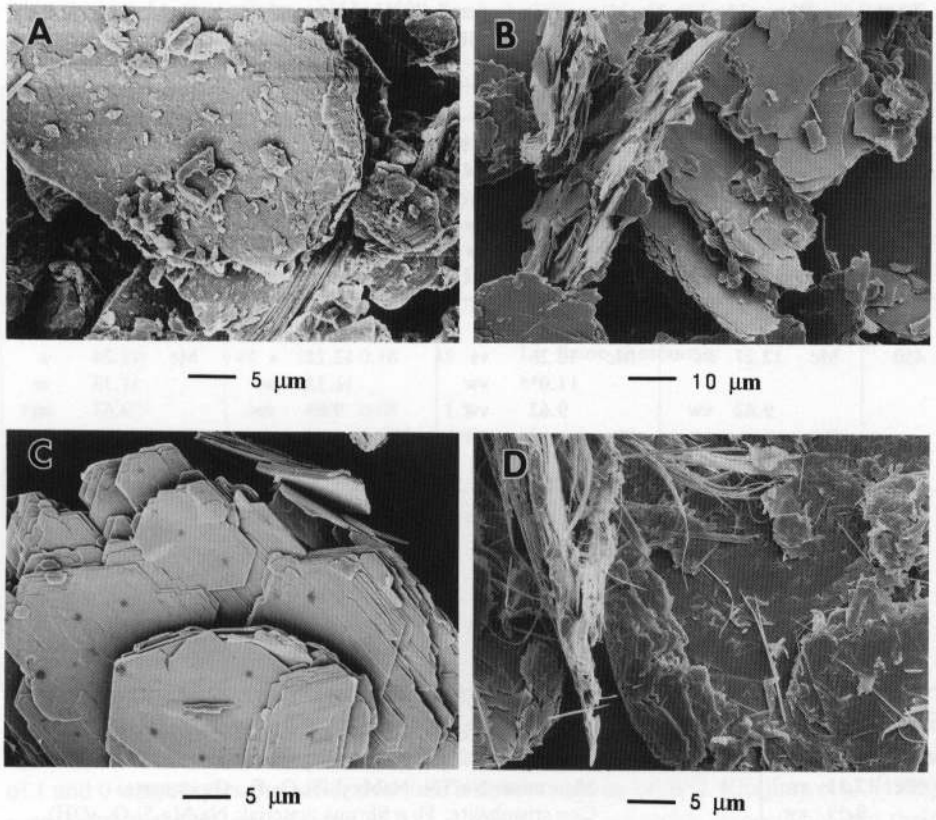

FIG. 3. SEM images of the starting Na-fluortaenilite and specimens treated hydrothermally.
A: starting Na-fluortaeniolite.
B: pure water, 300°C, 100MPa.
C: pure water, 600°C, 100MPa.
D: 5M NaOH solution, 300°C, 100MPa.

only on the laboratory scale but also on the industrial scale. When this process is applied for industrial use, the temperature recommended is between 450 and 600°C depending on the apparatus used.

The present results, that Na-taeniolite is only stable in the Na-taeniolite – water system (Table 1, P.W.), and the crystals develop their euhedral shape in that system, indicates that the mechanism of the dissolution and growth of the crystals is that of Ostwald ripening (Baronnet, 1982; Morse and Casey, 1988). This is supported by the chemical analysis of the liquids (Table 2). Percentages of ions detected in the solutions are all small for the pure water treatment (less than 5 percent of fluorine and lithium, and less than 0.4 percent of silicon and magnesium) but are quite large for the treatment with NaOH solutions (Table 2). Because the water contains only a small amount of taeniolite-consisting elements, those dissolved from smaller particles recrystallize simultaneously onto larger particles