tetrahedra and the very rare triazenate groups As3O8 which together
serve as building units to form an intersecting tunnel structure with
the Ca2+ cations located at the intersections of tunnels. Crystals of
Ca(GuOH)2H(AsO3)2 were grown by a high-temperature, high-
pressure hydrothermal method. It crystallizes in the monoclinic space
group P21/c with a = 6.467(4), b = 6.051(1), c = 16.457(2), β = 92.99(3)°, V = 682.2(1) Å3, Z = 2, R = 0.045 for 929 independent
reflections with I > 2σ(I). The structure contains infinite chains of
GaO4 octahedra sharing edges. These chains are connected by
arsenate groups to form layers in the ab-plane. The layers are
linked by Ca2+ cations and hydrogen bonding.

The structure analysis of Na2CaMg(PO4)2
and NH4Al2(SO4)2(OH)6 was used for the Rietveld refinement. The table 1. summarises final
reflections with I > 2σ(I).

The X-ray data were collected on DRON-UM-1 powder
diffractometer with CuKα radiation (7 - 120° 2θ range, 0.02° step
size, 5 seconds per step). The Howard's version of DBWS 4.1(5)
was used for the Rietveld refinement. The table 1. summarises
final cell parameters and R factors for both structures.

Table 1.: Final cell parameters and R factors for both structures.

<table>
<thead>
<tr>
<th>u(Å)</th>
<th>b(Å)</th>
<th>c(Å)</th>
<th>β(°)</th>
<th>V(Å³)</th>
<th>Rp</th>
<th>Rs</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.58(6)</td>
<td>5.20(4)</td>
<td>9.11(1)</td>
<td>90.76(2)</td>
<td>653.15(3)</td>
<td>8.12</td>
<td></td>
</tr>
<tr>
<td>7.00(1)</td>
<td>7.00(1)</td>
<td>17.61(1)</td>
<td>120.0</td>
<td>749.31(10)</td>
<td>10.55</td>
<td></td>
</tr>
</tbody>
</table>

(2) P. B. Moore & T. Araki, Am. Mineralogist, 52, 1355 (1972)
(3) S. Manchetti, Neus Jahrbuch fur Mineralogie. 406 (1976)
(4) P. E. Werner, Z. Krist., 120, 375 (1964)

The procedure of quantitative evaluation is based on the concept of
mapping [1]. A derived structure (2) is called to be related to a
basic one (1) if it can be mapped by a pair of matrices (A, S). A is a
non-singular 3x3 matrix, S is a (3x1) column matrix. M = (A, S) is
called the mapping of the relationship. The special computer
program was created [2]. The type of symmetry relationship among
more than 10 structures of natrolite-edingtonite-scolecite-
thomsonit-kaliborsite series was shown. There is a strong specific
influence of cation type on the tetrahedral network. The influence
of different cations (in row H-Na-K-Rb-Ca-Be) on other atomic
positions in the structure is quantitatively estimated. The role of
water molecules was discussed.

[1] Burzlaff H., Rothammel W., On Quantitative - Relations among

PS08.00.29 STRUCTURES OF SrSiO3 AND SrGeO3,
Fumito Nishi, Saitama Institute of Technology, Fussa-ji 1690, Oikame-machi,
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I succeeded in synthesizing SrSiO3 and SrGeO3 single crystals
The space group is C2/c and the crystal data are: a=12.305(4),
12.533(3)˚; b=7.129(2), 7.262(1)˚; c=10.86(1), 11.259(3)˚; β
=111.60(2), 111.30(2)° for SrSiO3 and SrGeO3, respectively.
Hilmer (1962) studied the crystal structure of SrGeO3 by
Weissenberg method and Nadezhina, Pobedimskaya, Ilyukhin,
Nikishina and Belov (1977) studied it by four-circle diffractometer.
According to my results, it may be said that Hilmer's crystal
is same polymorph as mine but he misunderstood its unit cell. On
the contrary, it is certain that Nadezhina's one is another polymor-
ph having SrGeO3 contents. I can summarized: (1) Both structures
include the layers comprised by SiO4 or GeO4 three-membered rings and the layers comprised by SrO4 polyhedra. (2) They
are piled up along c direction alternately. (3) In viewpoint of the
polytypic consideration, my crystals are classified into the 6-layers
group which are studied by Yamanaka and Mori (1981).

Hilmer, W. Kristallografiya 7, 704 (1962).
Nadezhina, T. N., Pobedimskaya, A. A., Ilyukhin, V. V., Nikishina, N. N.

PS08.00.30 CHARACTERIZATION OF UO2+ EXCHANGE
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The present study involves the incorporation of uranyl ion
into Y-zeolite. The Nar-, UO2+ exchange in the framework was
measured by neutron activation analyses. The X-Ray diffraction
patterns of the materials have been studied in order to understand
the behavior of uranyl ions in the zeolite and in order to present
the unknown crystal data.

The Y-zeolite framework distort in response to the cation
present in the structure. Hence the position of the UO2+ in the
structure was inferred from powder X-Ray diffraction data.