SEM AND EDS ANALYSES

of

URANIUM ORE SAMPLES

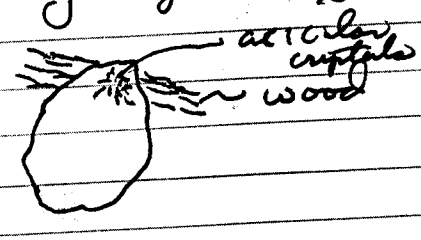
PENA BLANCA, MEXICO

308 - - - Q200406070009
Supplemental Material, Technical Activity Supporting Documentation: Experimental Data for SEM and EDS Analyses of Uranium Ore Samples Pena Blanca, Mexico (No Date Range Available)

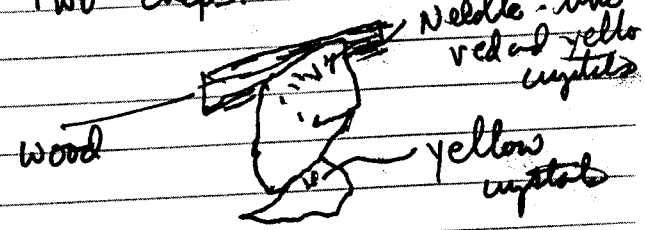
11/20/92 JP

Prepared Nopal rock samples for SEM analysis. Samples were mounted on aluminum stubs and labelled. They will be carbon coated in Div 06. The samples are described below.

Label	Description
A	NOPI-ECP-42 - rock chip from high grade uraninite-bearing ore from to level adit at Nopal I. Most of sample is quartz (silicified fragment) but one zone contains needle-like crystals (yellow + red) which are probably uranyl oxide hydrates.

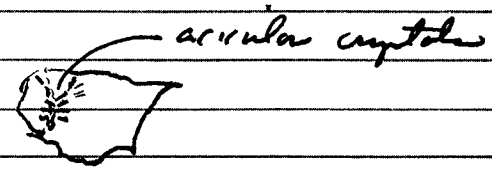


B	NOPI-ECP-42 - same as A (contains yellow, red, amber acicular crystal masses. Probably uranyl oxide hydrates. Iron oxide rich? Two chips.



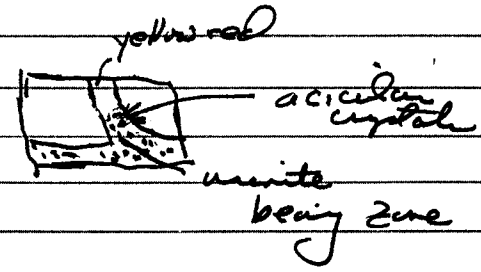
C

NOPI-ECP-42 rock chip of uranite bearing ore from +0 level adit at Nopal I. Contains zone of needle like crystal mass with yellow + red crystals.



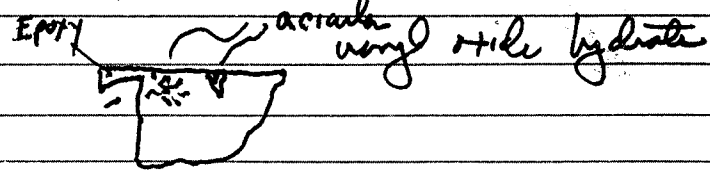
D

NOPI-ECP-32 rock chip from uranite bearing ore from +0 level adit at Nopal I. Contains uranite-rich zone.



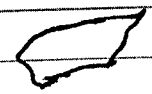
E

NOPI-ECP-31 rock chip from +0 adit with uranite. Contains acicular uranyl oxide hydrates.



F

NOPI-ECP-30 Uranite-bearing rock chip from to adit at Nopal I. Two chips. Small one has yellow mineral?



yellow?

NOPI-ECP-42

Sample A

A1 - uranophane crystals filling a void or fracture in uraninite - bearing rock
EDS (NOPI-ECP-42/A1) - uranophane

A2 - uranophane crystals in a void or fracture in silicified host rock

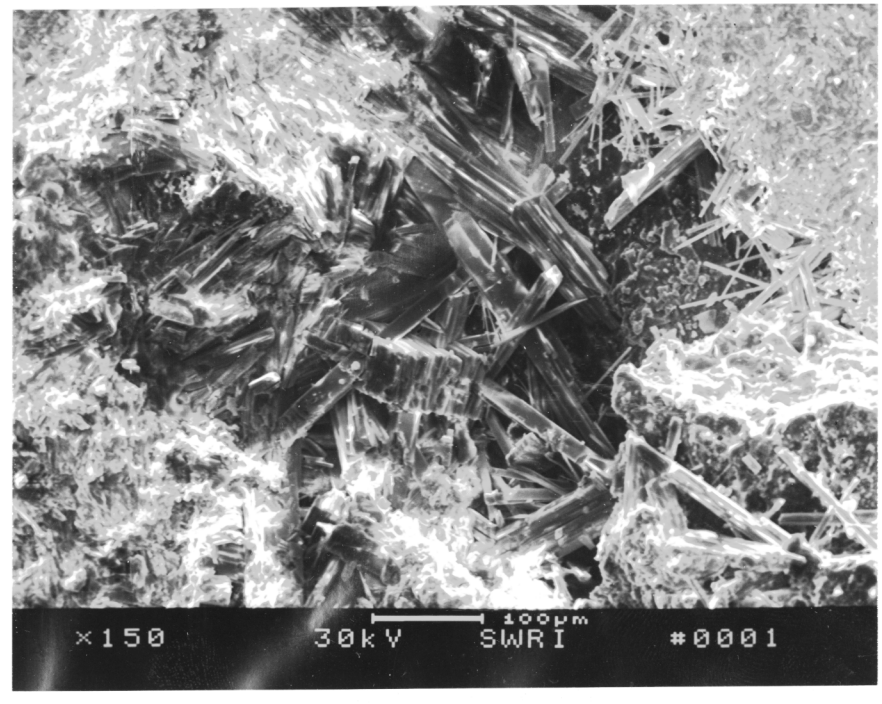
A3 - Closeup of A2
EDS - (NOPI-ECP-42/A2) - large corroded crystal at lower left. Contain Si + Ca - uranophane.

EDS - (NOPI-ECP-42/A3) - thin acicular crystals at right middle of photo. Si + Ca - uranophane

A4 - Closeup of acicular needles.
EDS (NOPI-ECP-42/A4) crystal in hole - probably iron coating on uranophane
EDS (NOPI-ECP-42/A5) amorphous material - iron oxide - hematite.

A5 - closeup of amorphous iron oxides.

×150
30kV
100μm
SWRI
#0000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30kV
100μm
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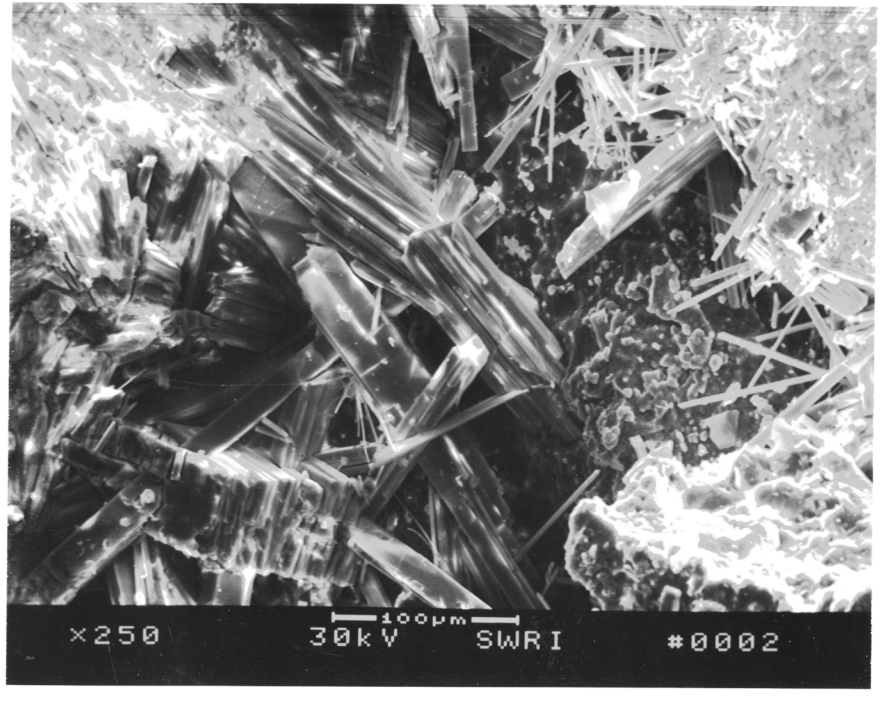
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100μm
SWRI
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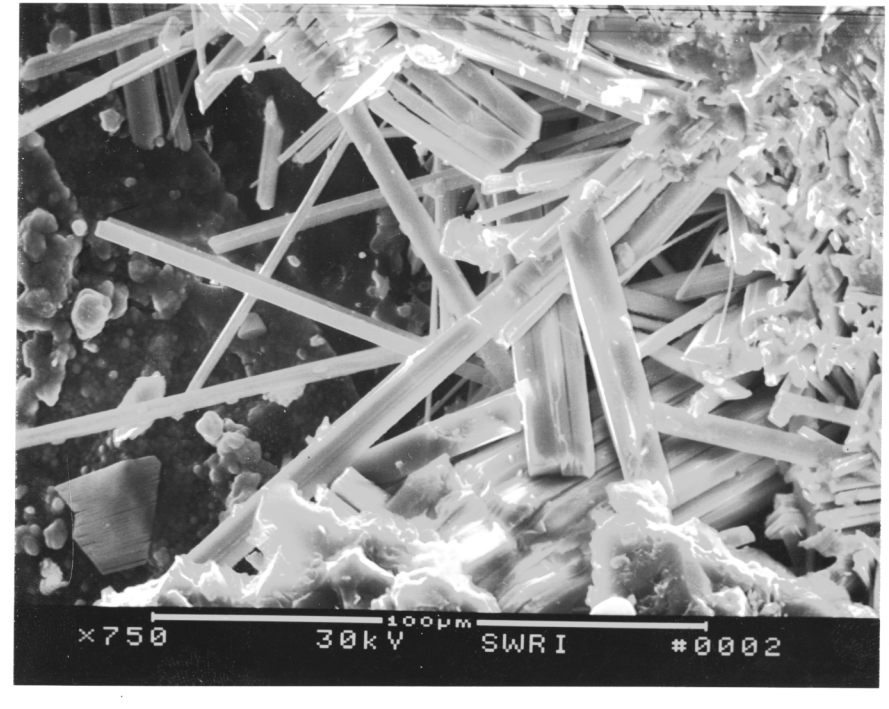
×750
30kV
100μm
SWRI
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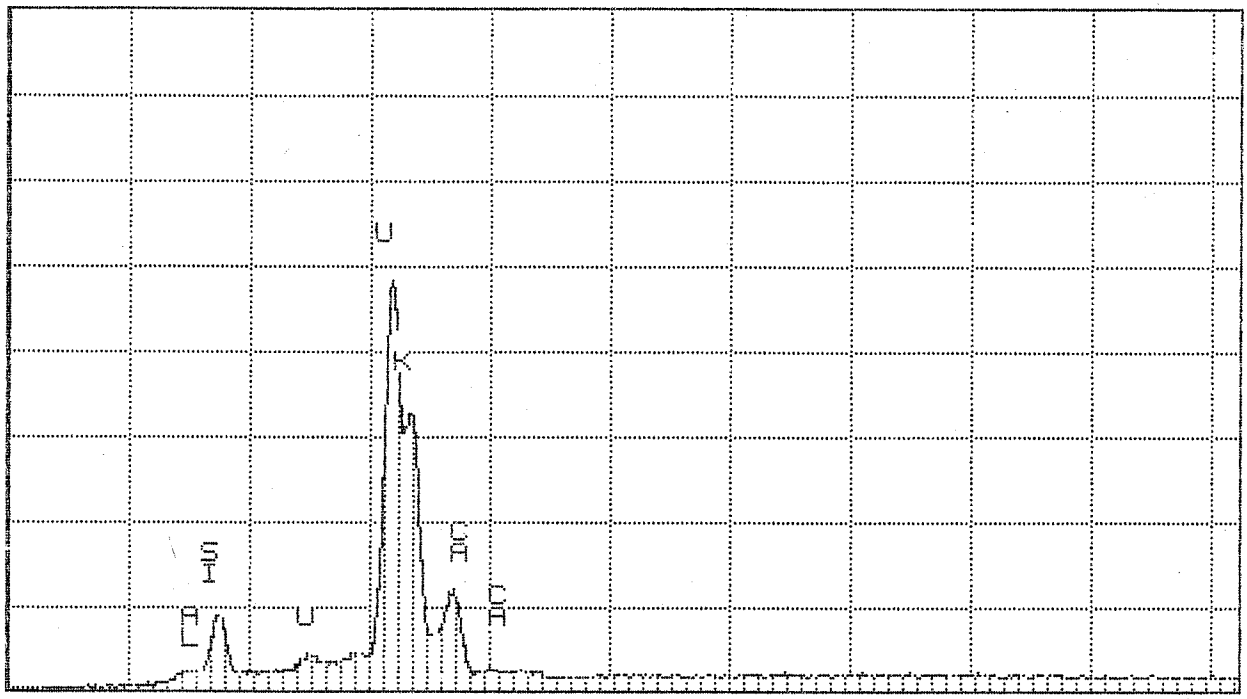

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179 NOPI-ECP-42/A1 - 30KV, WD=25

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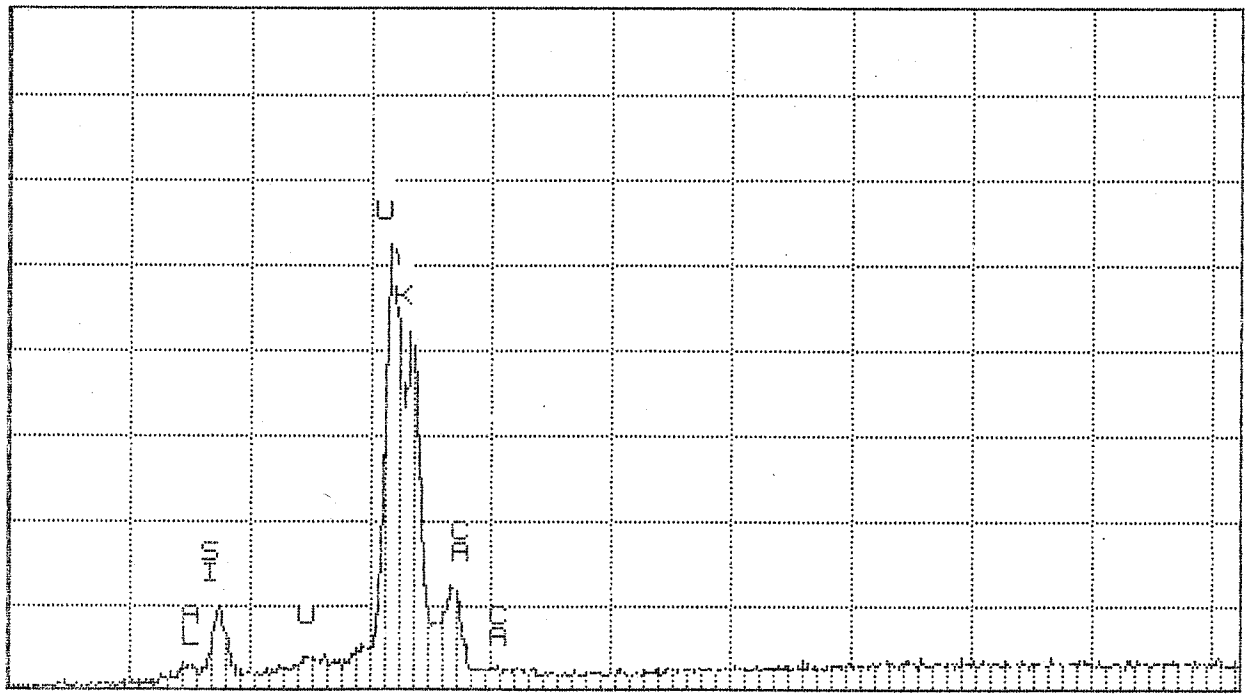

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78 NOPI-ECP-42/A2 - 30KV, WD=25

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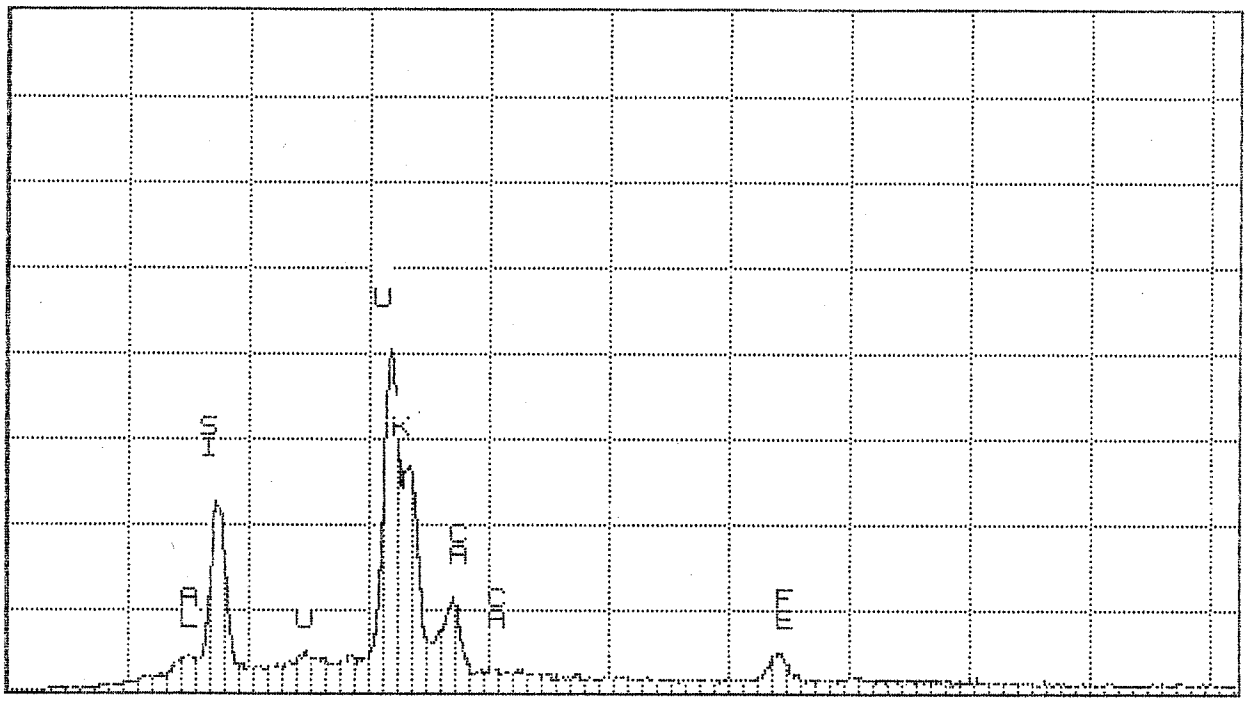

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74 NOPI-ECP-42/A3 - 30KV, WD=25

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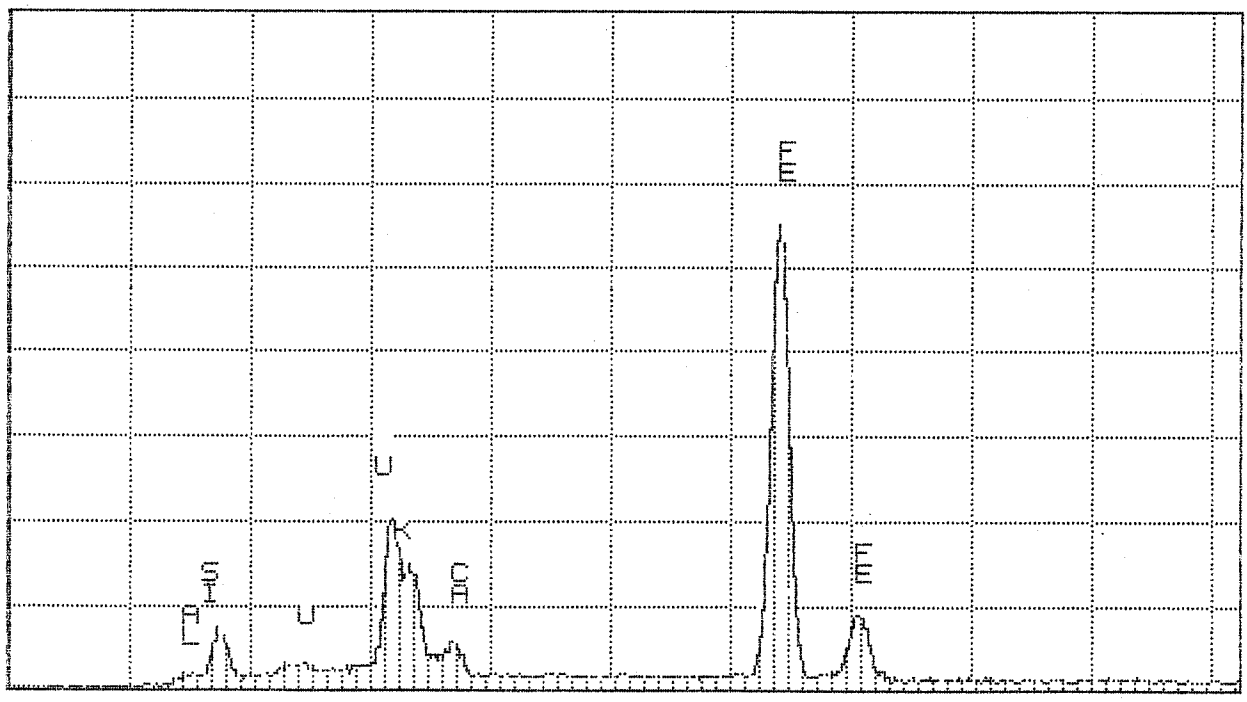

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91 NOPI-ECP-42/A4 - 30KV, WD=25

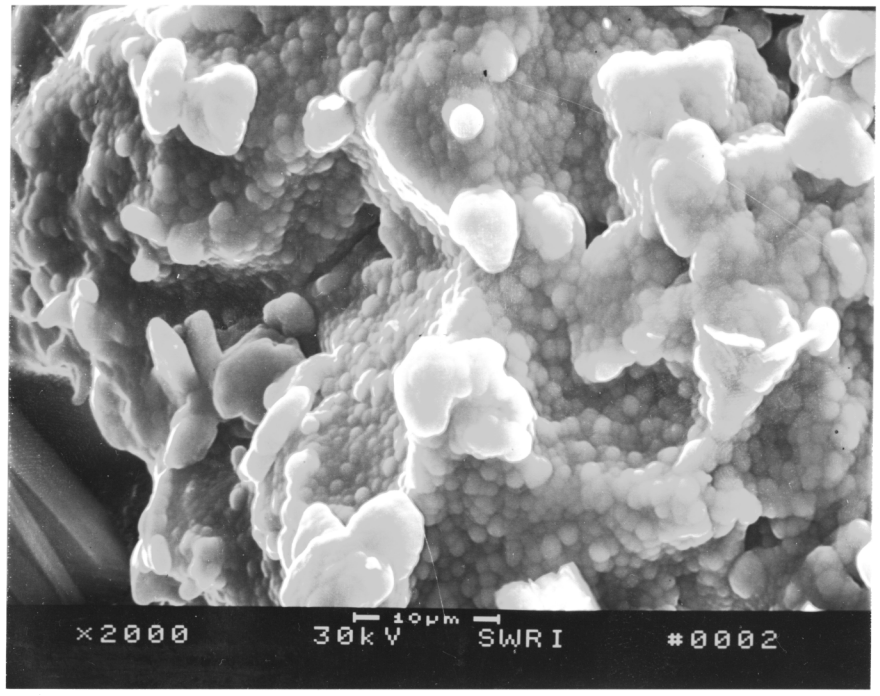
NOP1-ECP-42

Sample B

B1- manganese in open space in silicified host rock
EDS(NOP1-ECP-42/B1)

B2- manganese

B3- manganese


×2000
10μm
30kV
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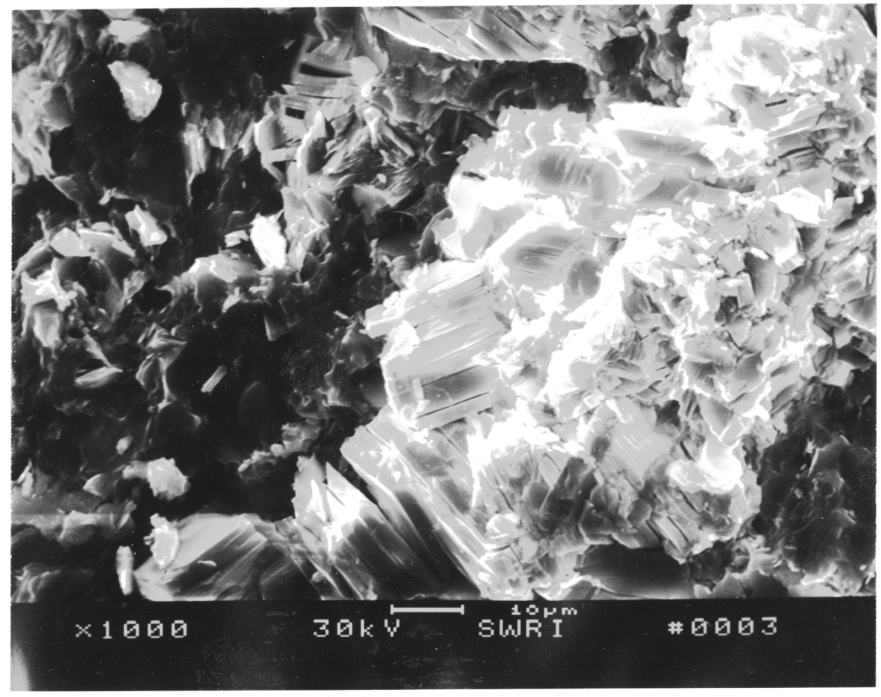
×1000
10μm
30kV
SWRI
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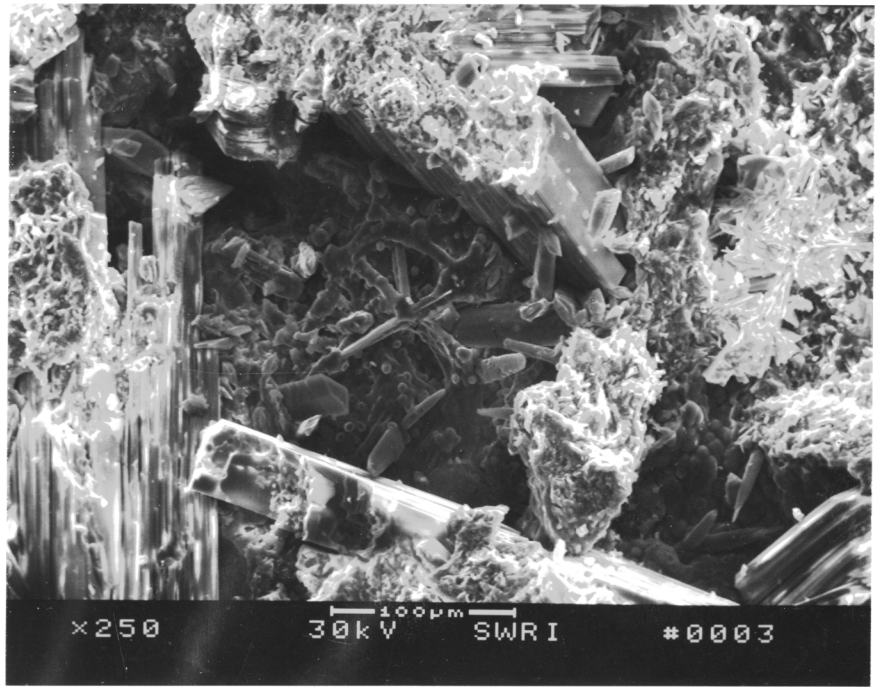
×250
100μm
30kV
SWRI
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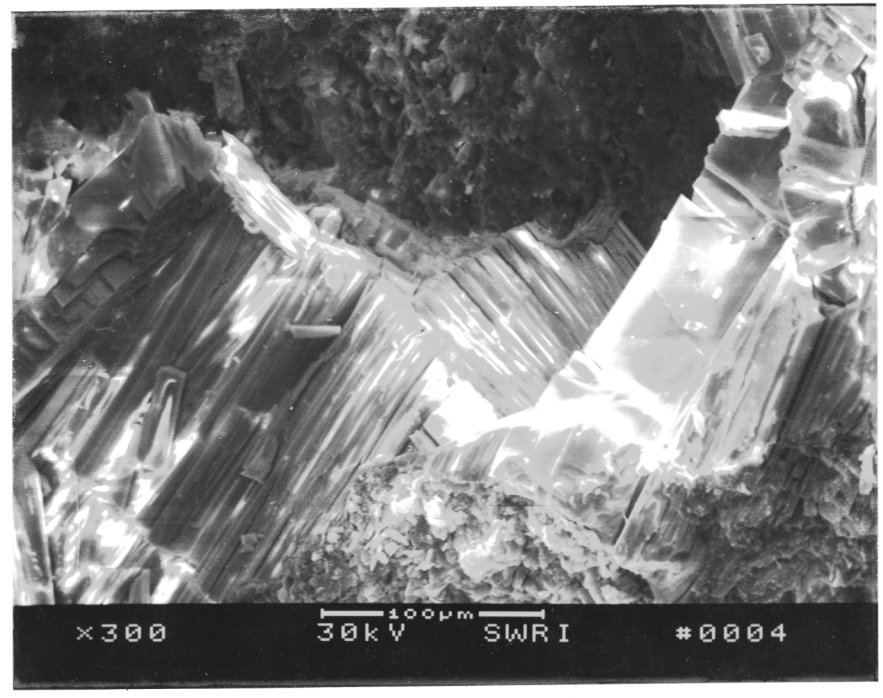
×300
100μm
30kV
SWRI
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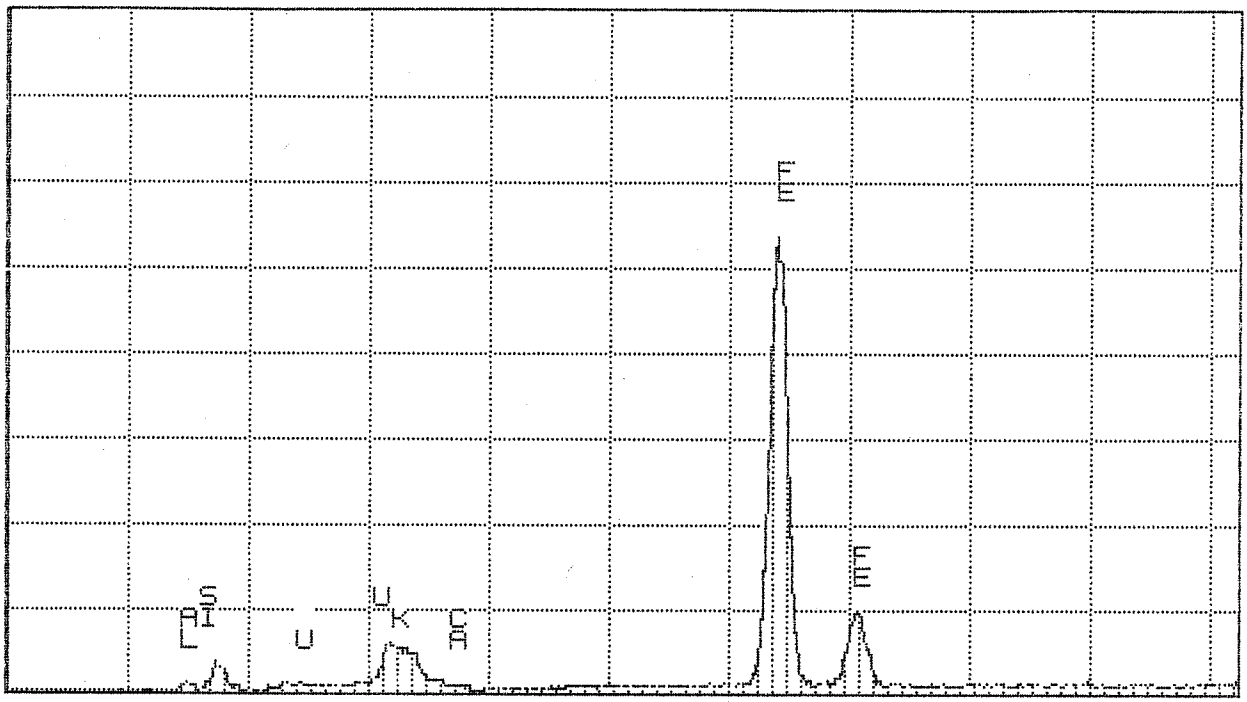

0.000 VFS = 2048 10.240

64 NOPI-ECP-42/A5 - 30KV, WD=25

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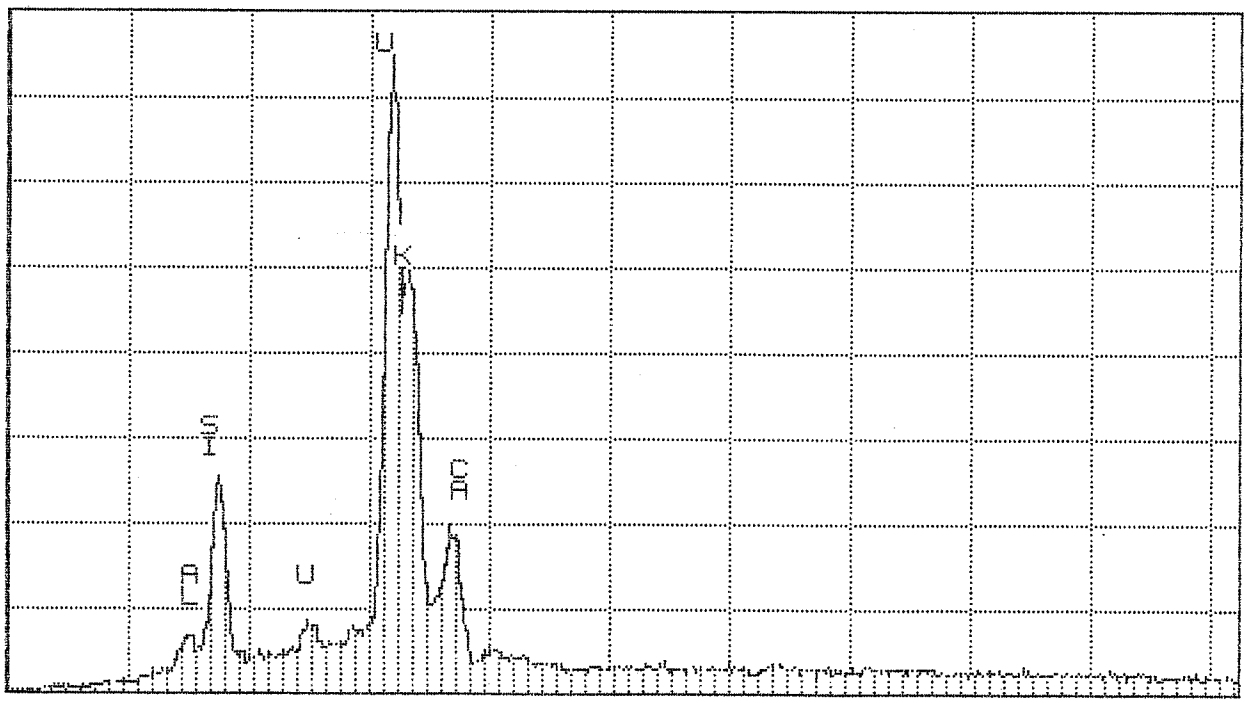


0.000 VFS = 1024 10.240

60 NOPI-ECP-42/B1 - 30KV, WD=26

NOPI-ECP-32

Sample D

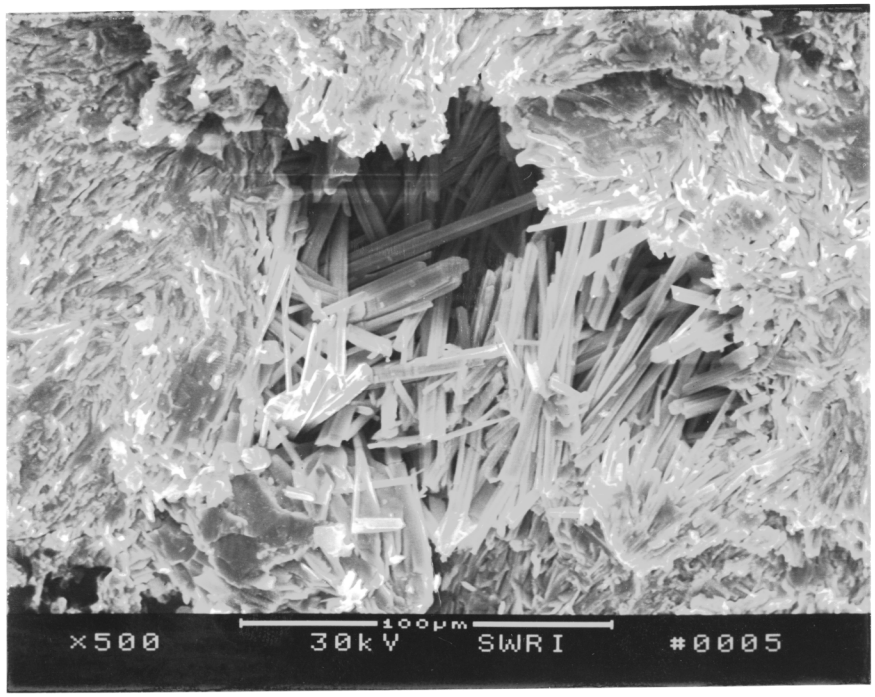
D1- acicular crystals in vug in monzonite bearing veinlet.
EDS (NOPI-ECP-32/D1) Ianthinite with interference from quartz.

D2- Closeup of acicular Ianthinite
EDS (NOPI-ECP-32/D2) Ianthinite

D3- Schoepite in fracture

D4- Schoepite

D5- Schoepite


100μm
×500
30kV
SWRI
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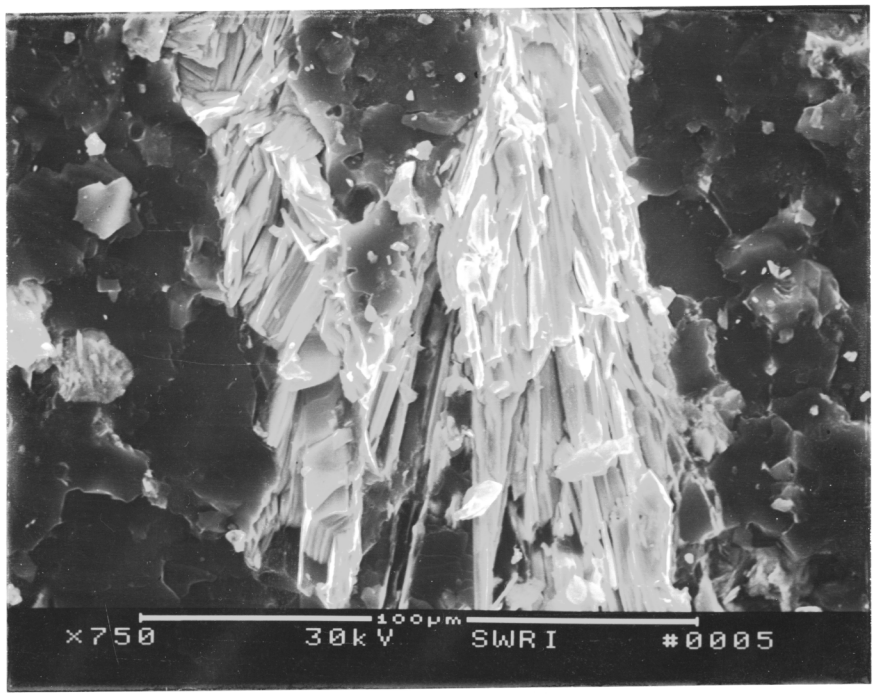
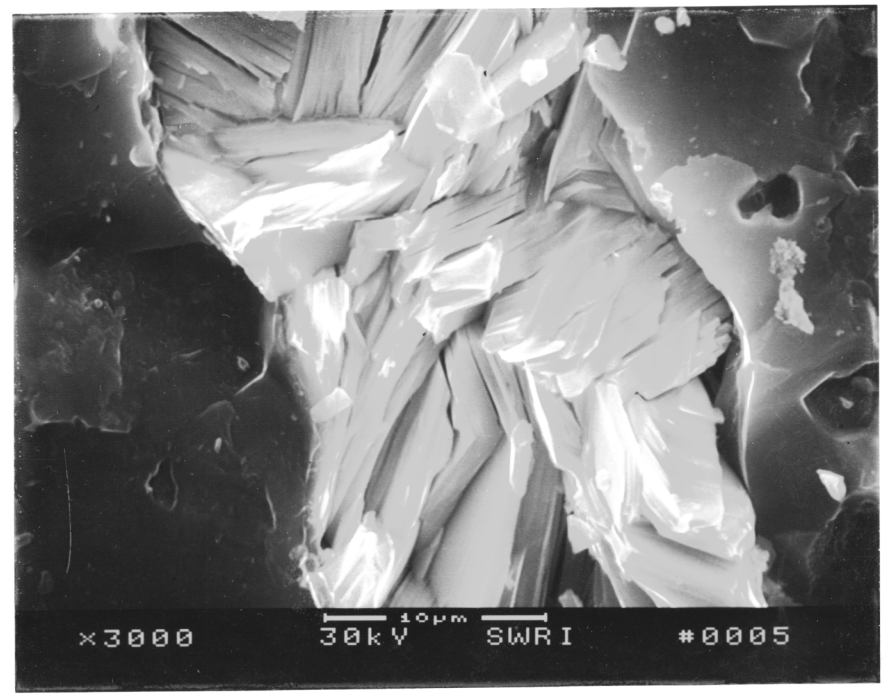

100μm
×750
30kV
SWRI
#0005


10μm
×3000
30kV
SWRI
#0005

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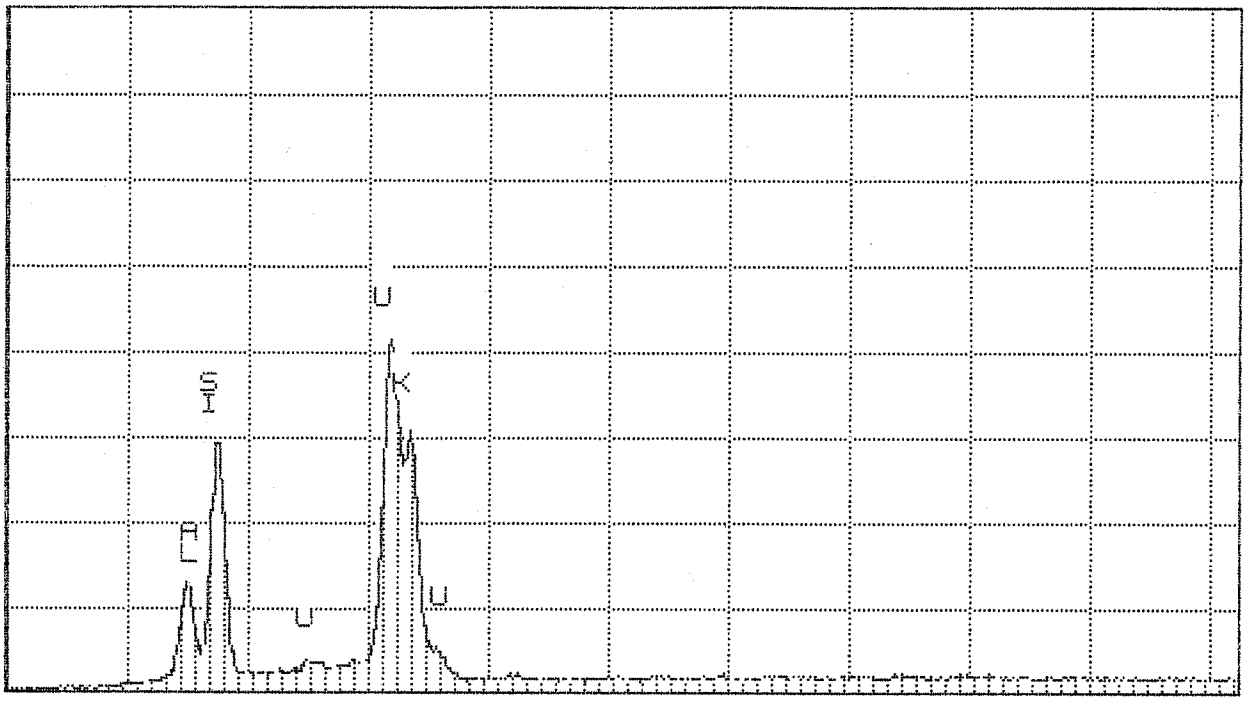

0.000 VFS = 2048 10.240

119 NOPI-ECP-32/D1 - 30KV, WD=28

Series II Southwest Research Institute FRI 16-DEC-92 10:35
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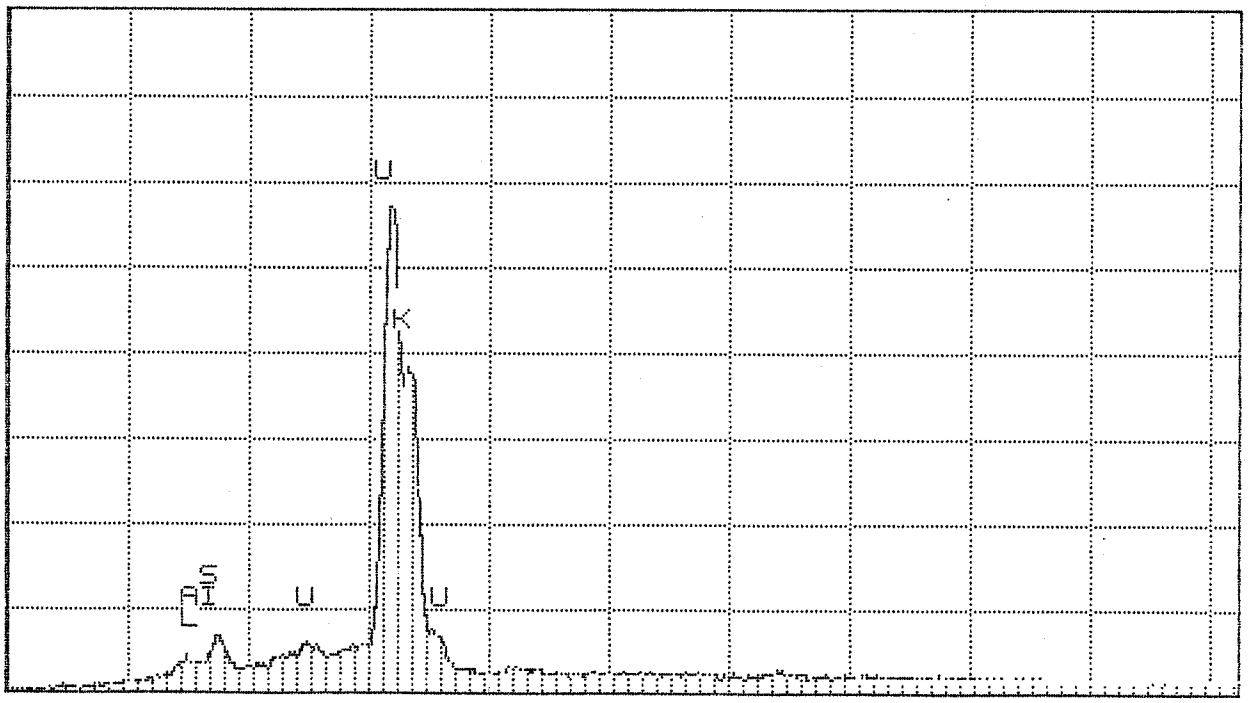


0.000 VFS = 2048 10.240

97 NOPI-ECP-32/D2 - 30KV, WD=28

NOPI-ECP-31

Sample E

EDS (NOPI-ECP-31/E1) uranophane + iron

E1 - uranophane with iron oxides + striated unknown S-bearing mineral

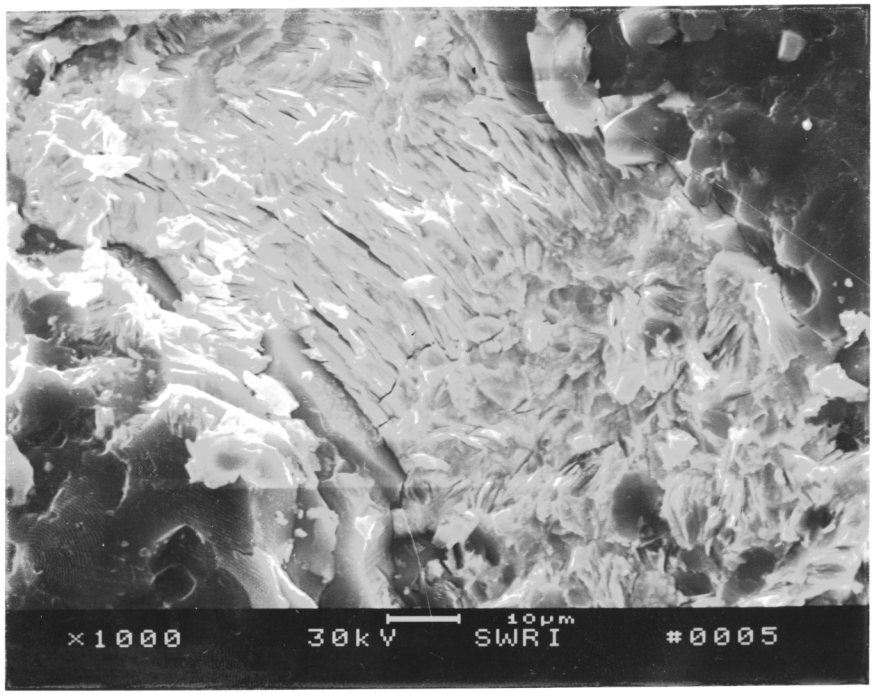
EDS (NOPI-ECP-31 / E2) S-bearing uranium
(" E3) mineral

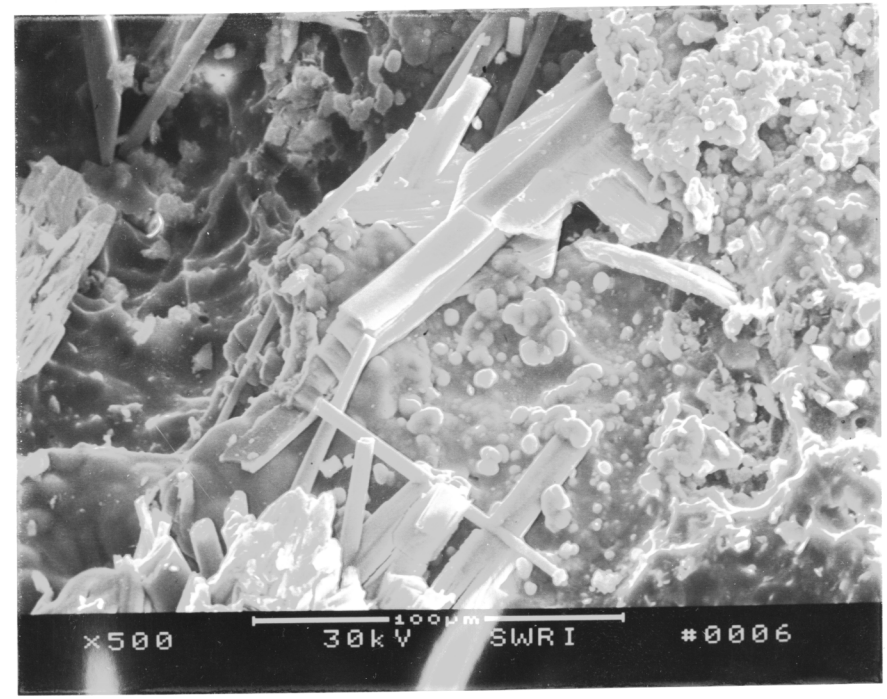
E2 - closeup of S-bearing uranium mineral

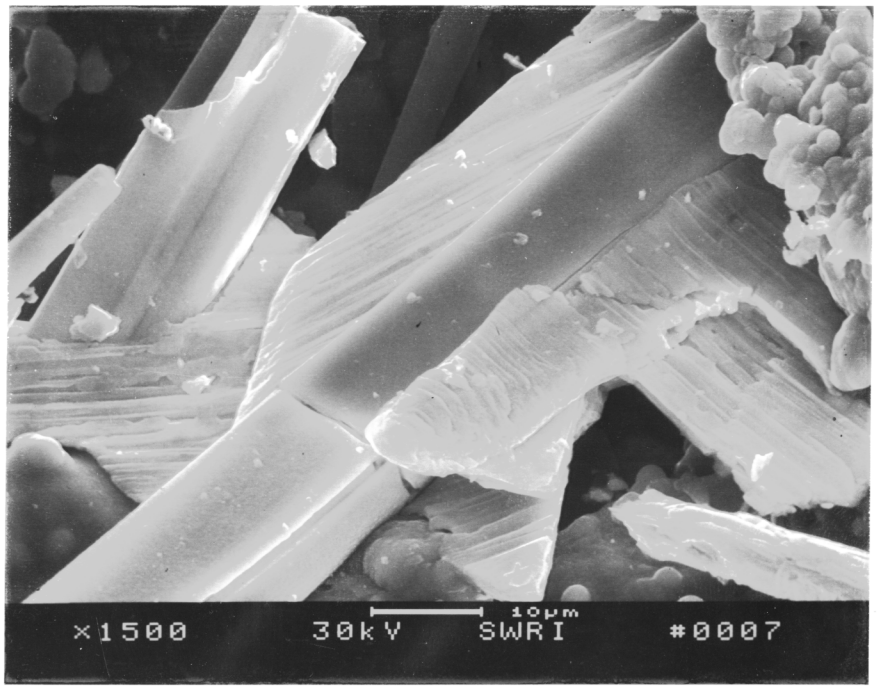
NOPI-ECP-30

Sample F

F1 - photo of intergrown uranite + clay.


×1000
30kV
10μm
SWRI
#0005


×500
30kV
100μm
SWRI
#0006


×1500
30kV
10μm
SWRI
#0007

Series II Southwest Research Institute FRI 16-DEC-92 11:42
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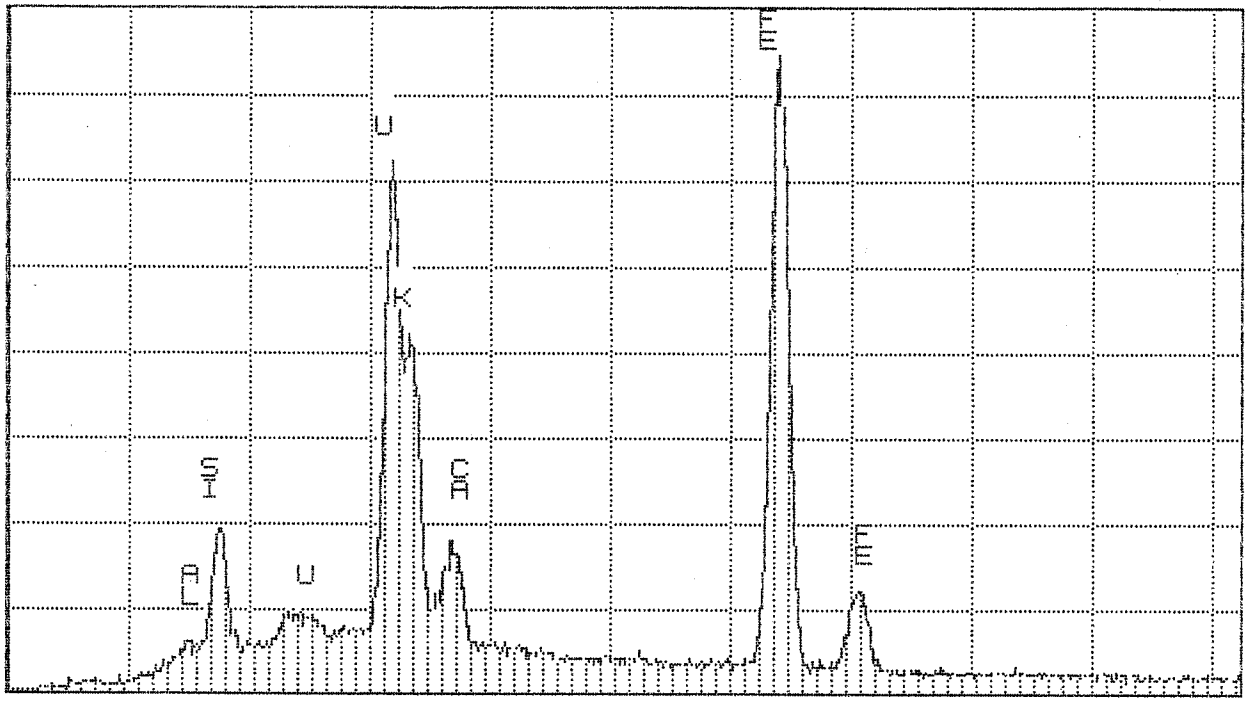

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74 NOPI-ECP-31/E1 - 30KV, WD=22

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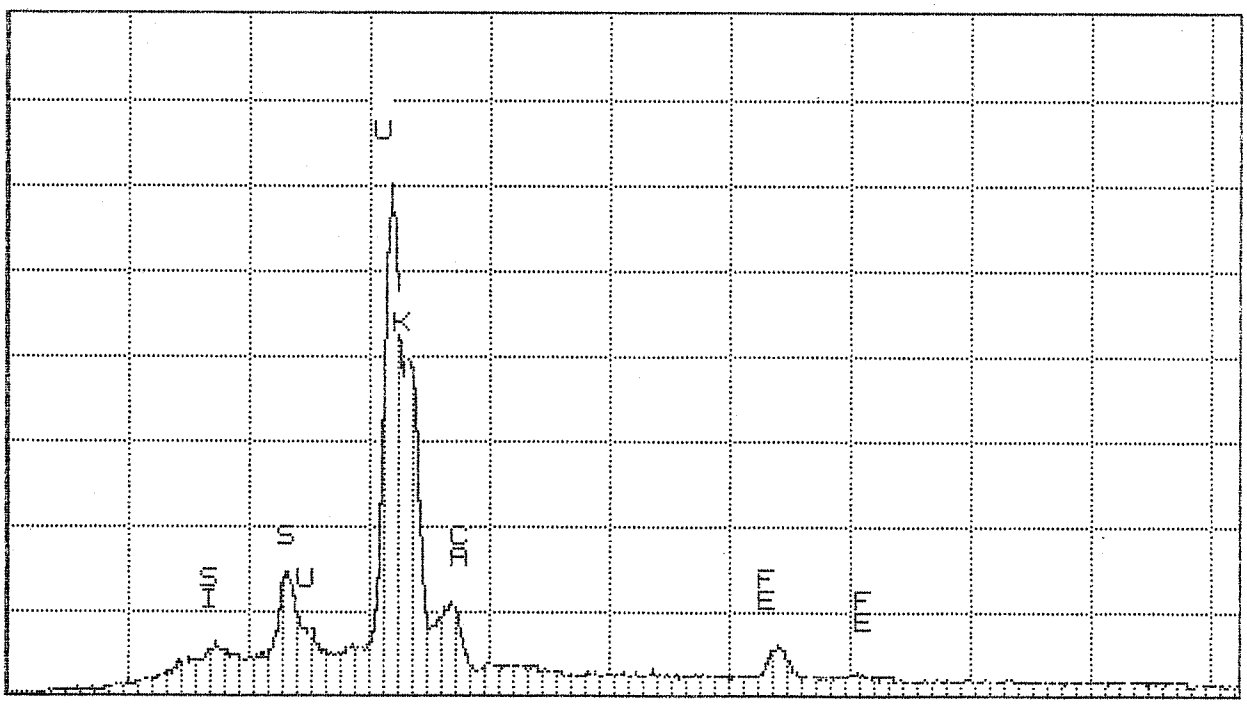

0.000 VFS = 2048 10.240

89 NOPI-ECP-31/E2 - 30KV, WD=22

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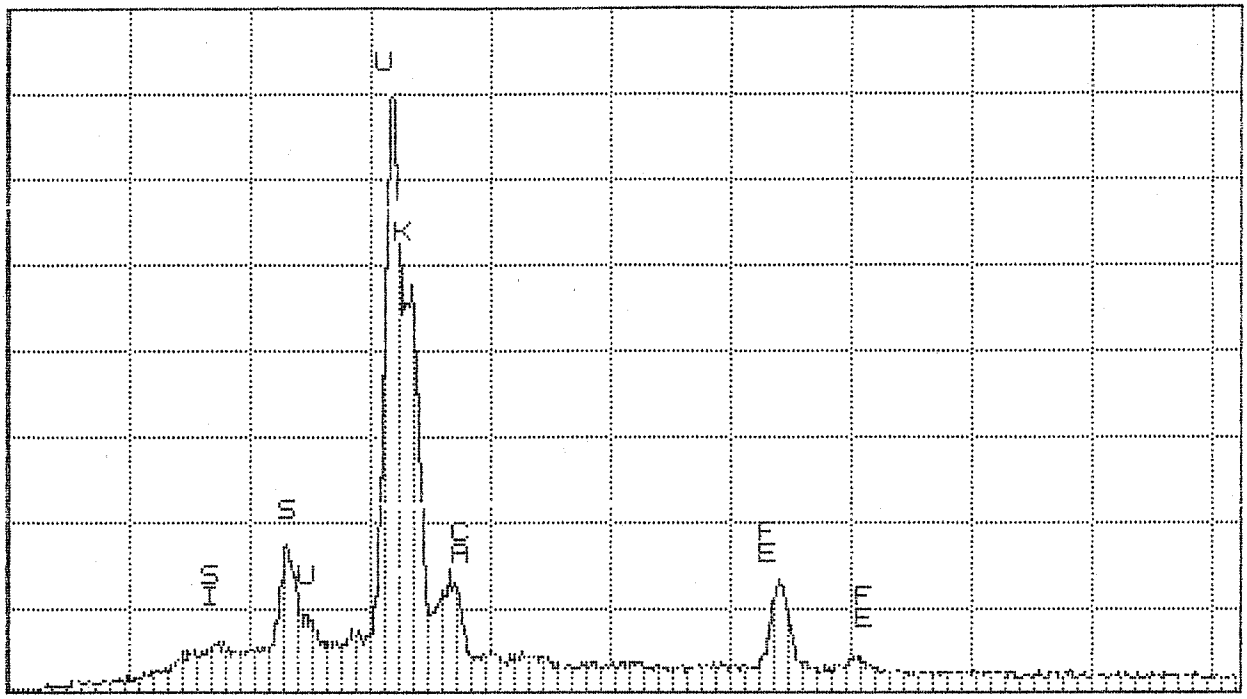
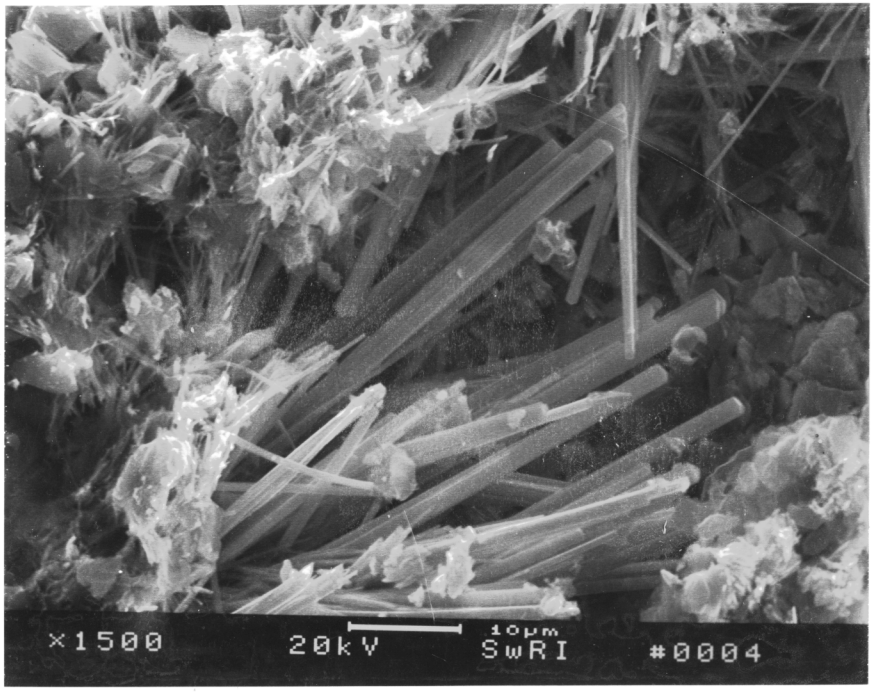
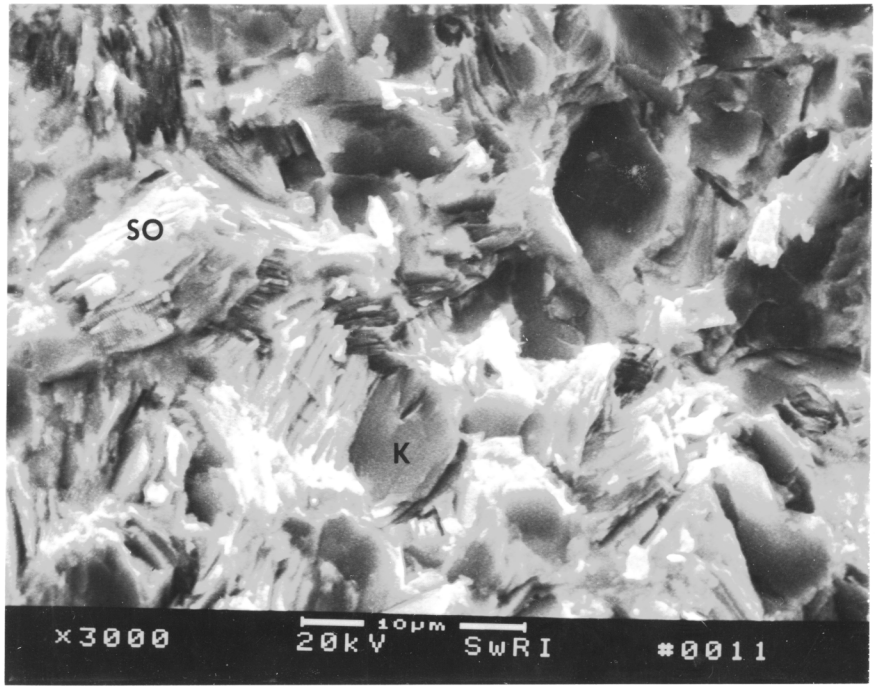


0.000 VFS = 1024 10.240

61 NOPI-ECP-31/E3 - 30KV, WD=22


×1500
20kV
10μm
SwRI
#0004


SO
K
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20kV
10μm
SwRI
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