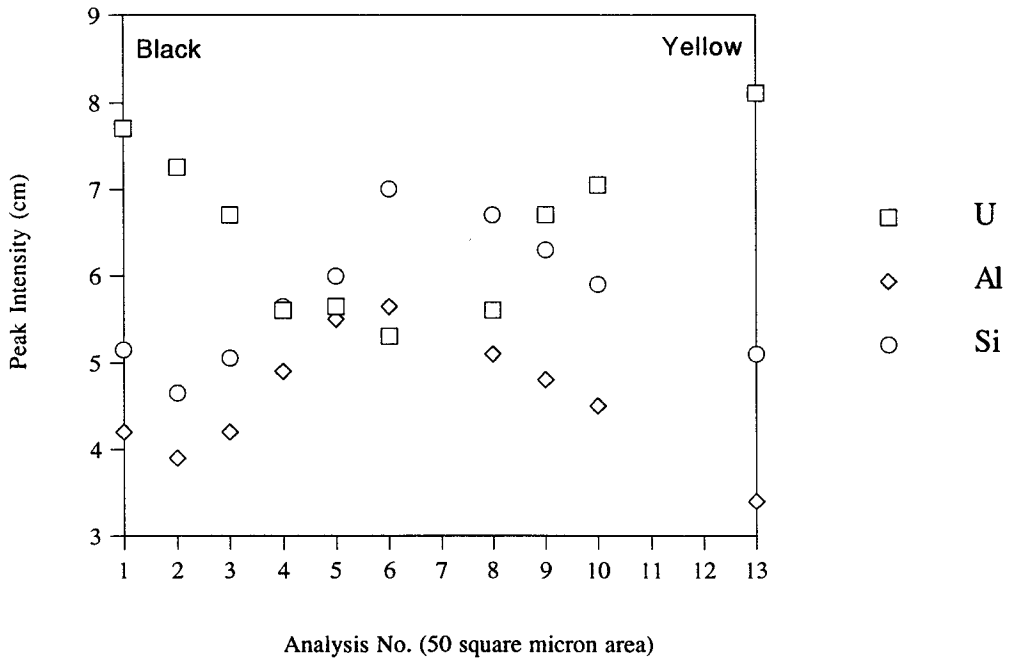
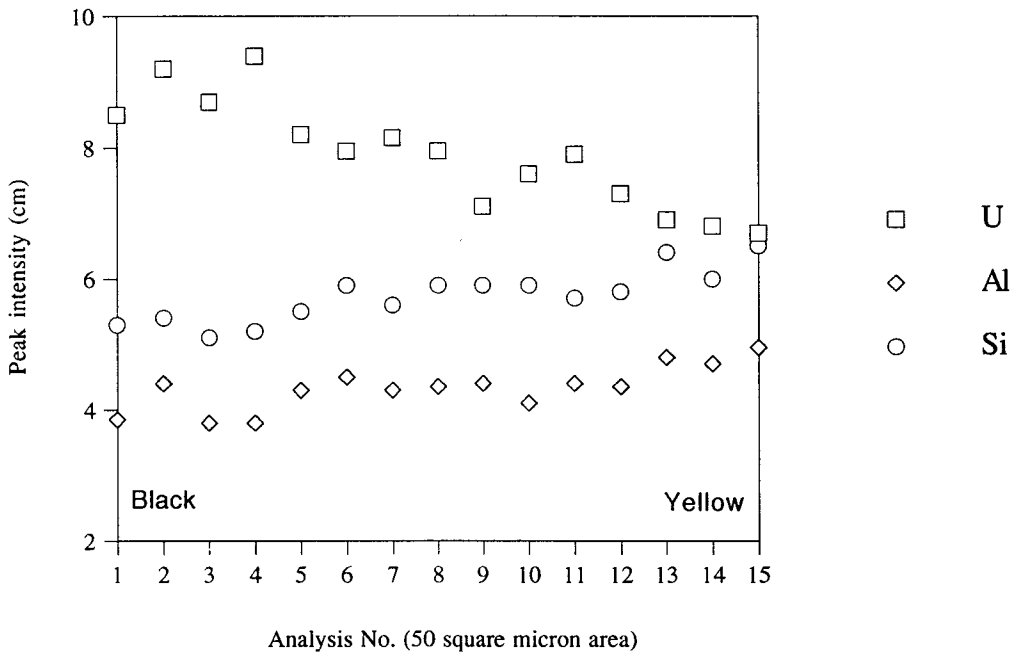
	1	2	3	4	5	6	7	8
	Analysis No. Loc 1	U	Al	Si	Analysis No. Loc 2	U	Al	Si
1	1	7.7	4.2	5.15	1	8.5	3.85	5.3
2	2	7.25	3.9	4.65	2	9.2	4.4	5.4
3	3	6.7	4.2	5.05	3	8.7	3.8	5.1
4	4	5.6	4.9	5.65	4	9.4	3.8	5.2
5	5	5.65	5.5	6	5	8.2	4.3	5.5
6	6	5.3	5.65	7	6	7.95	4.5	5.9
7	7				7	8.15	4.3	5.6
8	8	5.6	5.1	6.7	8	7.95	4.35	5.9
9	9	6.7	4.8	6.3	9	7.1	4.4	5.9
10	10	7.05	4.5	5.9	10	7.6	4.1	5.9
11	11				11	7.9	4.4	5.7
12	12				12	7.3	4.35	5.8
13	13	8.1	3.4	5.1	13	6.9	4.8	6.4
14					14	6.8	4.7	6
15					15	6.7	4.95	6.5
16								

X3593 - Ramsey

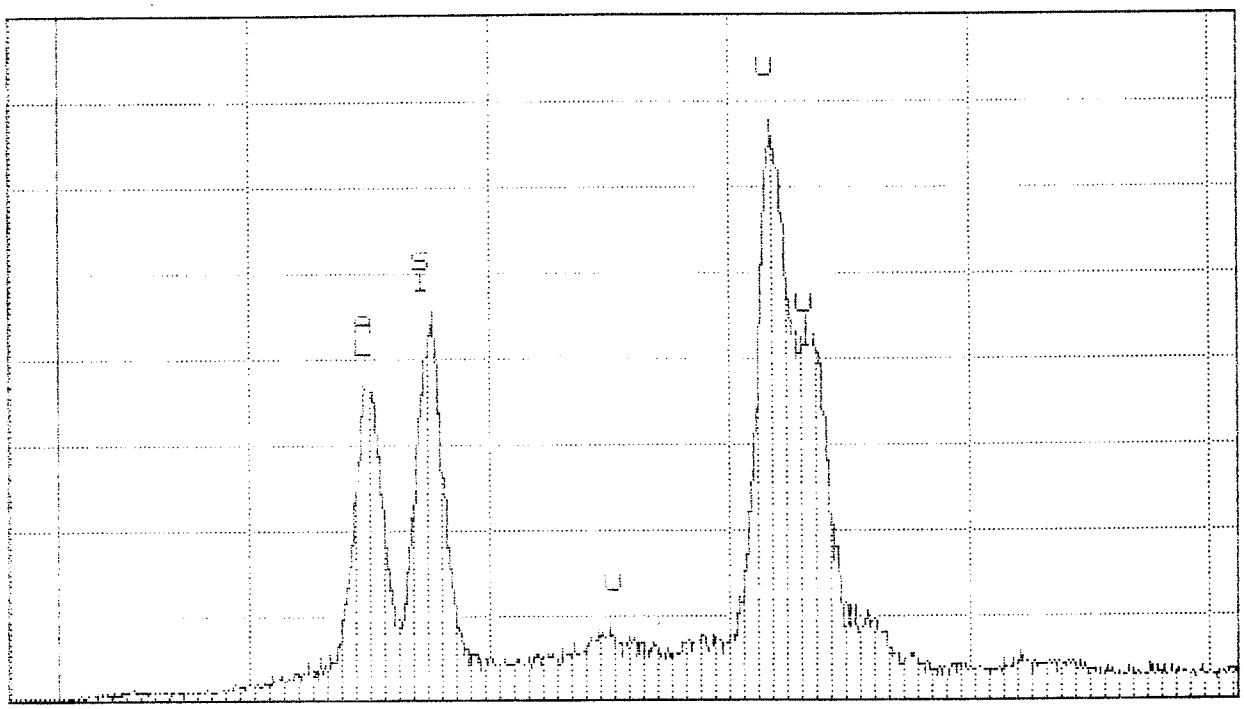
NOPI-1-TS3 Location 1



NOPI-1-TS3 Location 2



Series II Southwest Research Institute FRI 05-AUG-94 09:06
Cursor: 0.200Kev = 8



0.000 VFS = 1024 5.120
60 NOPI-1-TS3 LOC1 AREA1

Series II Southwest Research Institute FRI 05-AUG-94 09:07
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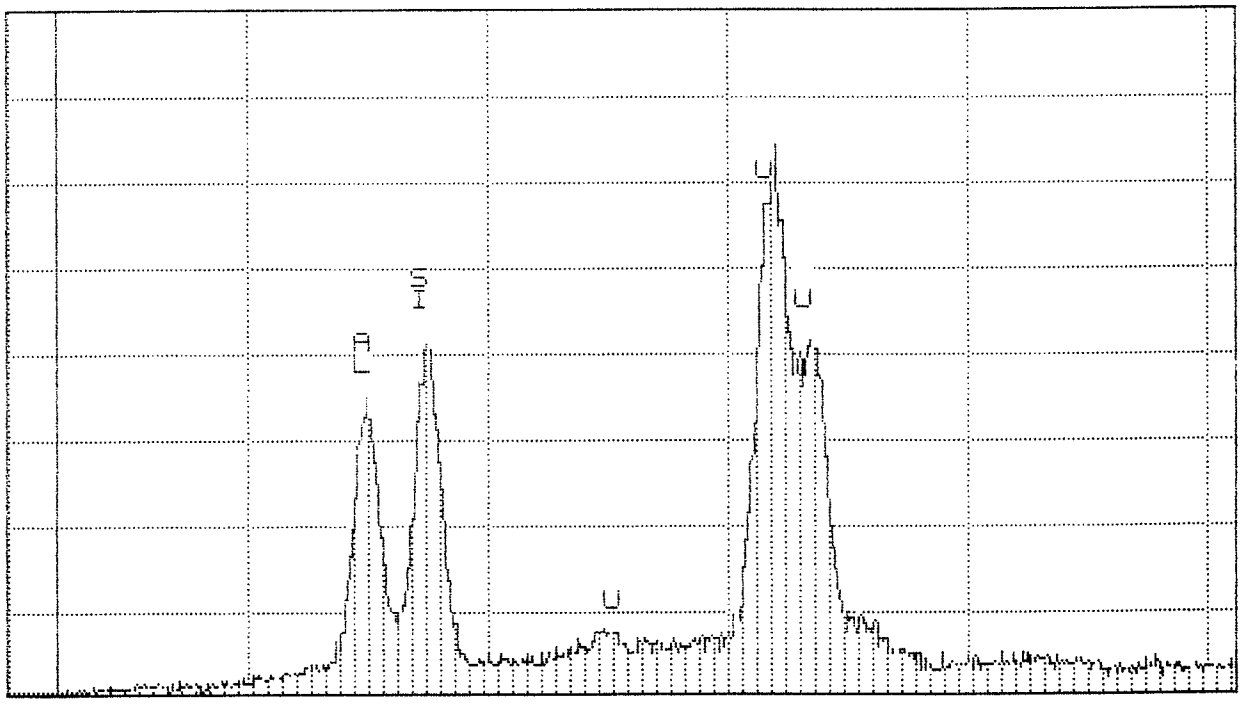
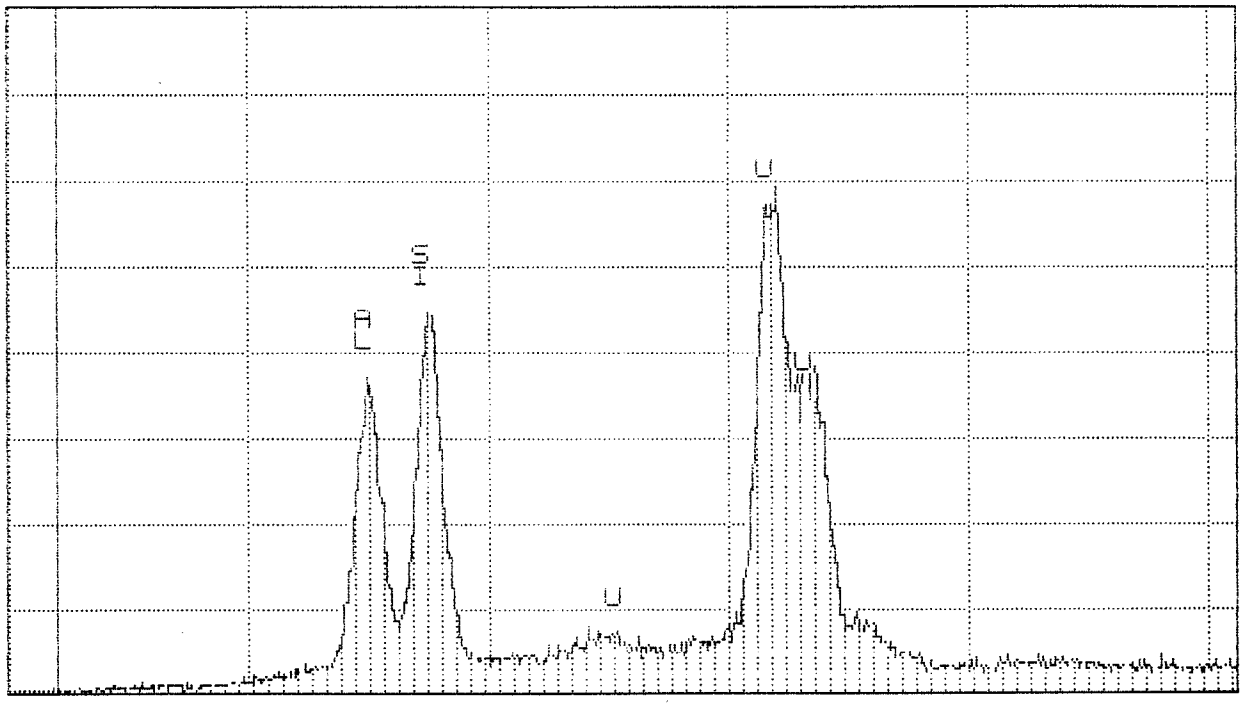


0.000 VFS = 1024 5.120
60 NOPI-1-TS3 LOC1 AREA2

Series II Southwest Research Institute FRI 05-AUG-94 09:08
Cursor: 0.200keV = 1



0.000 VFS = 1024 5.120

60 NOPI-1-TS3 LOC1 AREA3

Series II Southwest Research Institute FRI 05-AUG-94 09:09
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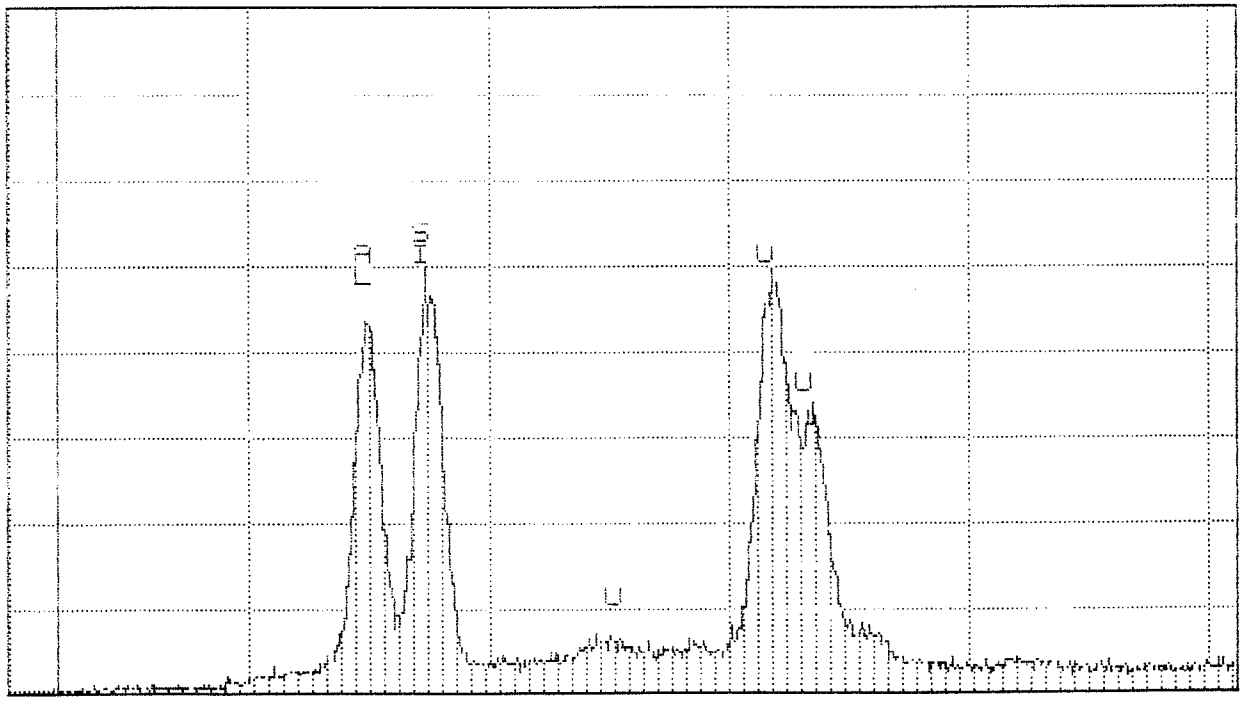
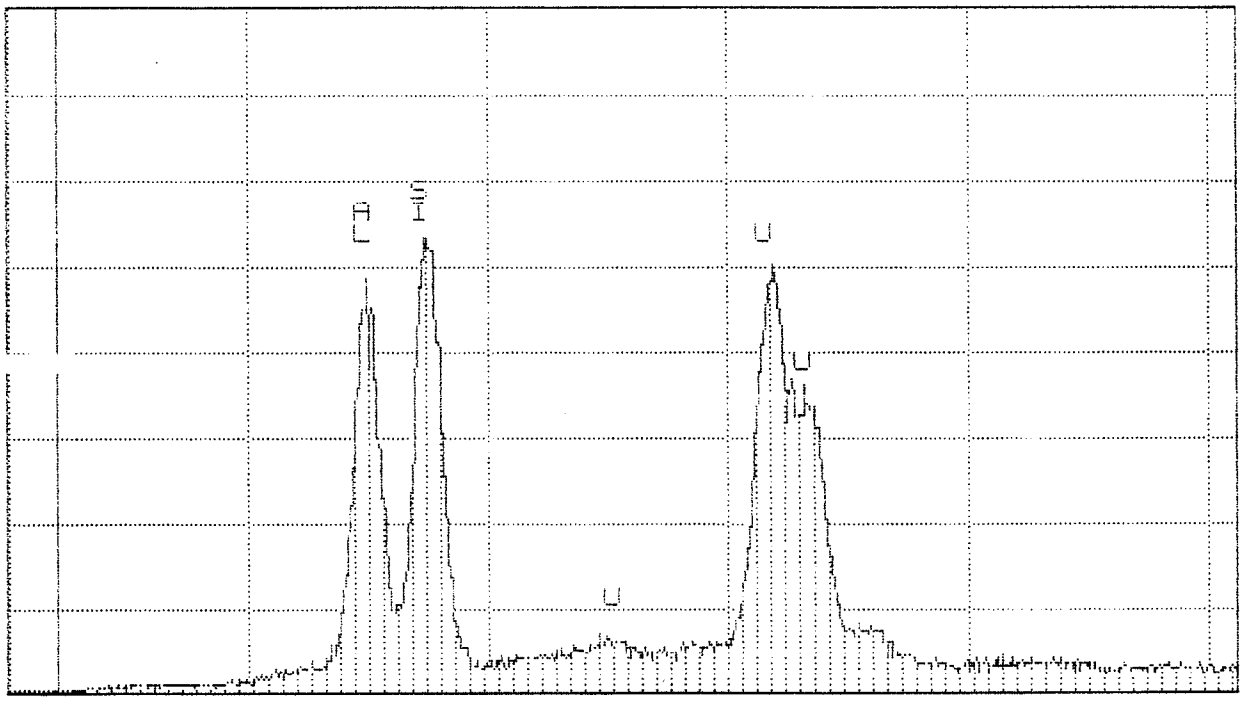


0.000 VFS = 1024 5.120

61 NOPI-1-TS3 LOC1 AREA4

Series II Southwest Research Institute FRI 05-AUG-94 09:11
Cursor: 0.200keV = 4



0.000 VFS = 1024 5.120

61 NOPI-1-TS3 LOC1 AREA5

Series II Southwest Research Institute FRI 05-AUG-94 09:12
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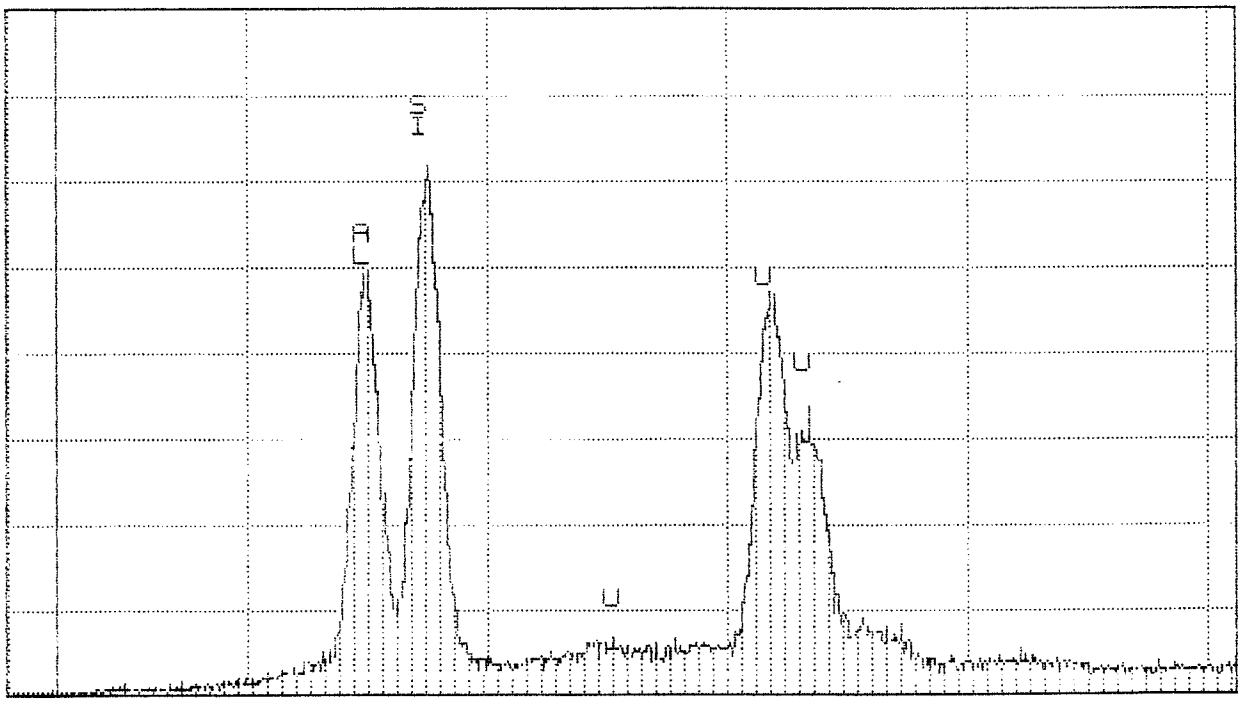
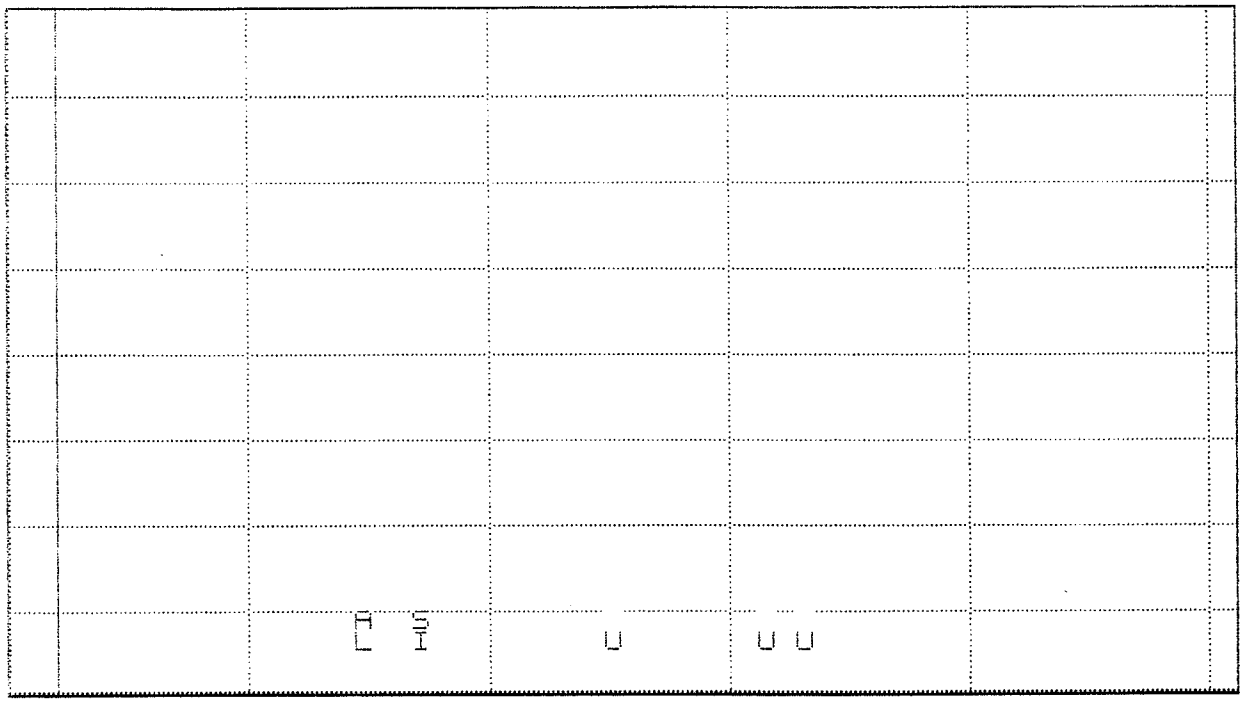


0.000 VFS = 1024 5.120

60 NOPI-1-TS3 LOC1 AREA6

Cursor: 0.200keV = 0

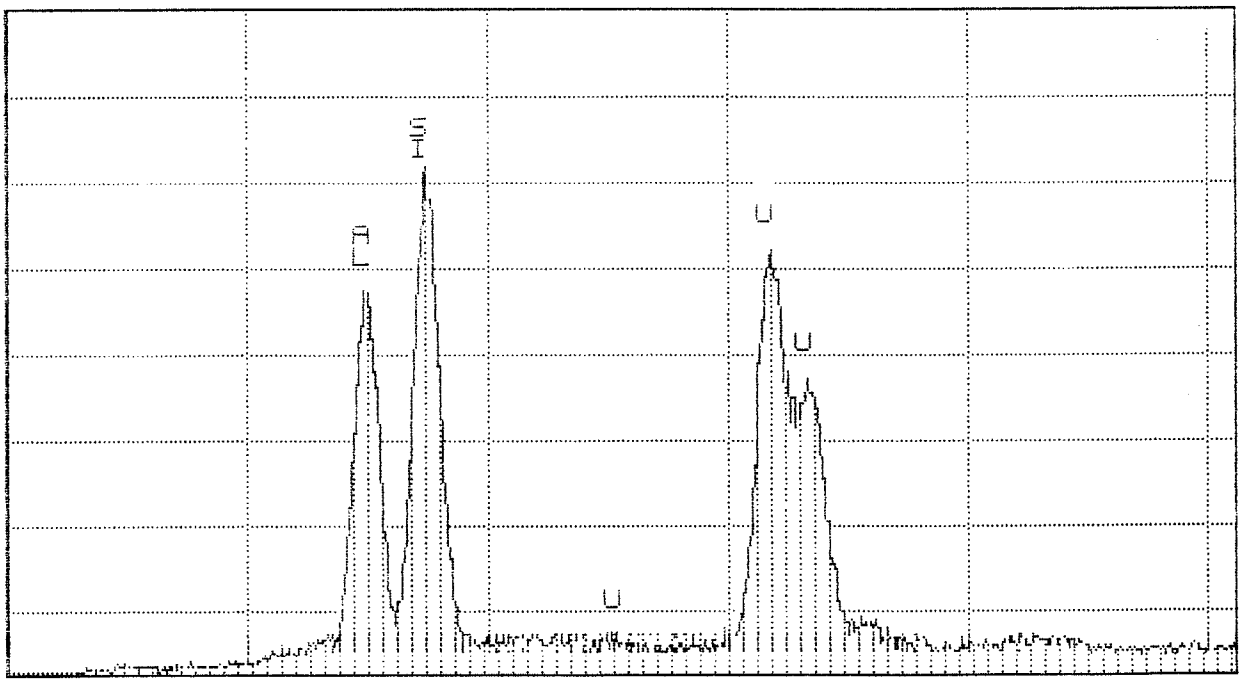


0.000 VFS = 64 5.120

S0 NOPI-1-TS3 LOC1 AREA7

Series II Southwest Research Institute FRI 05-AUG-94 09:14

Cursor: 0.000keV = 0



0.000 VFS = 1024 5.120

S0 NOPI-1-TS3 LOC1 AREA8

Series II Southwest Research Institute FRI 05-AUG-94 09:16

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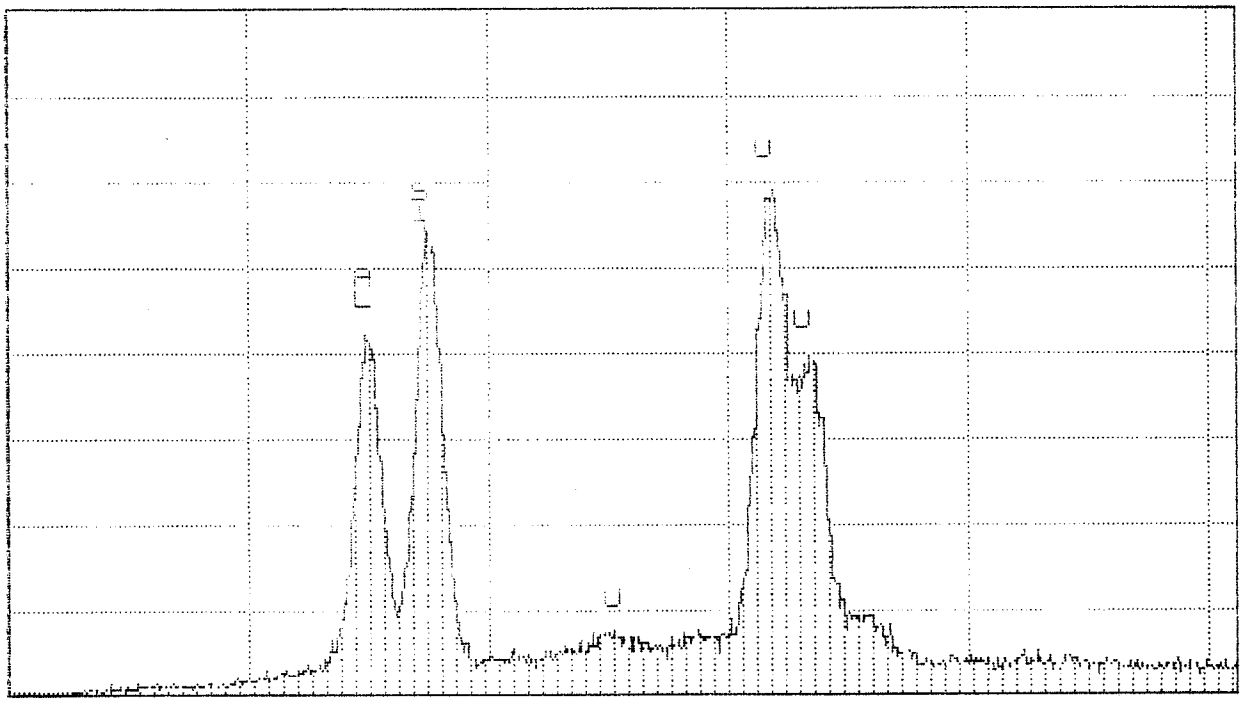
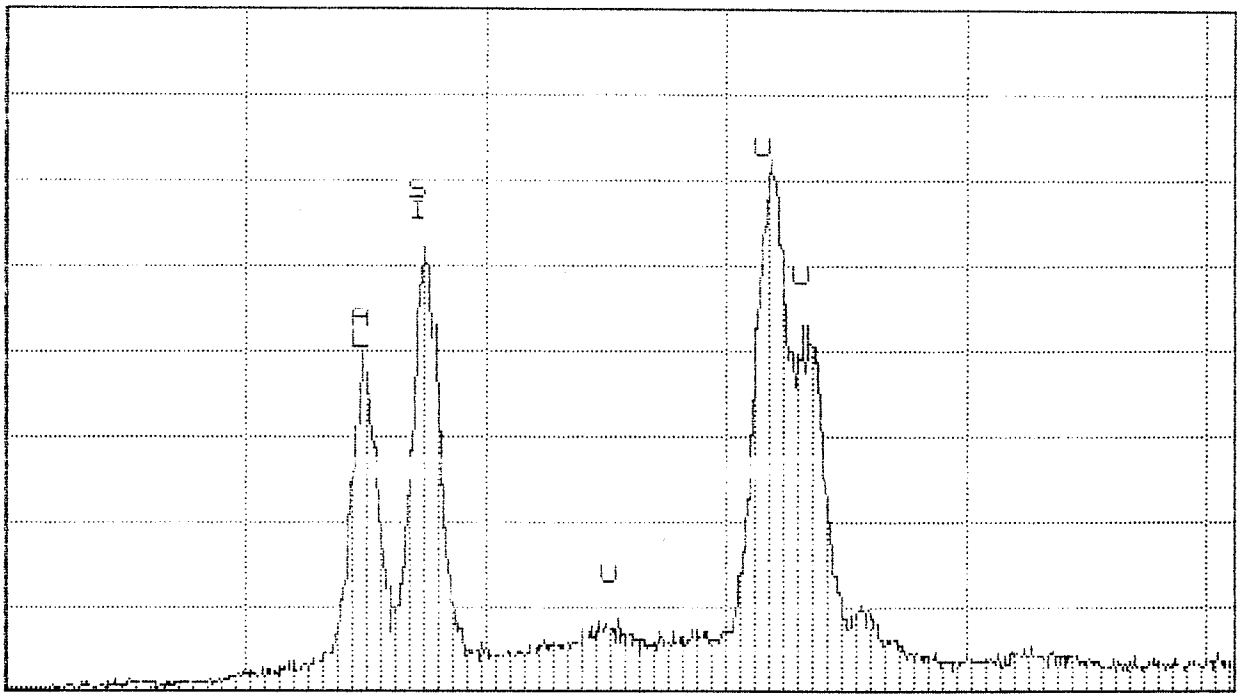


0.000 VFS = 1024 5.120

61 NOPI-1-TS3 LOC1 HREA9

Series II Southwest Research Institute FRI 05-AUG-94 09:20
Cursor: 0.000keV = 0

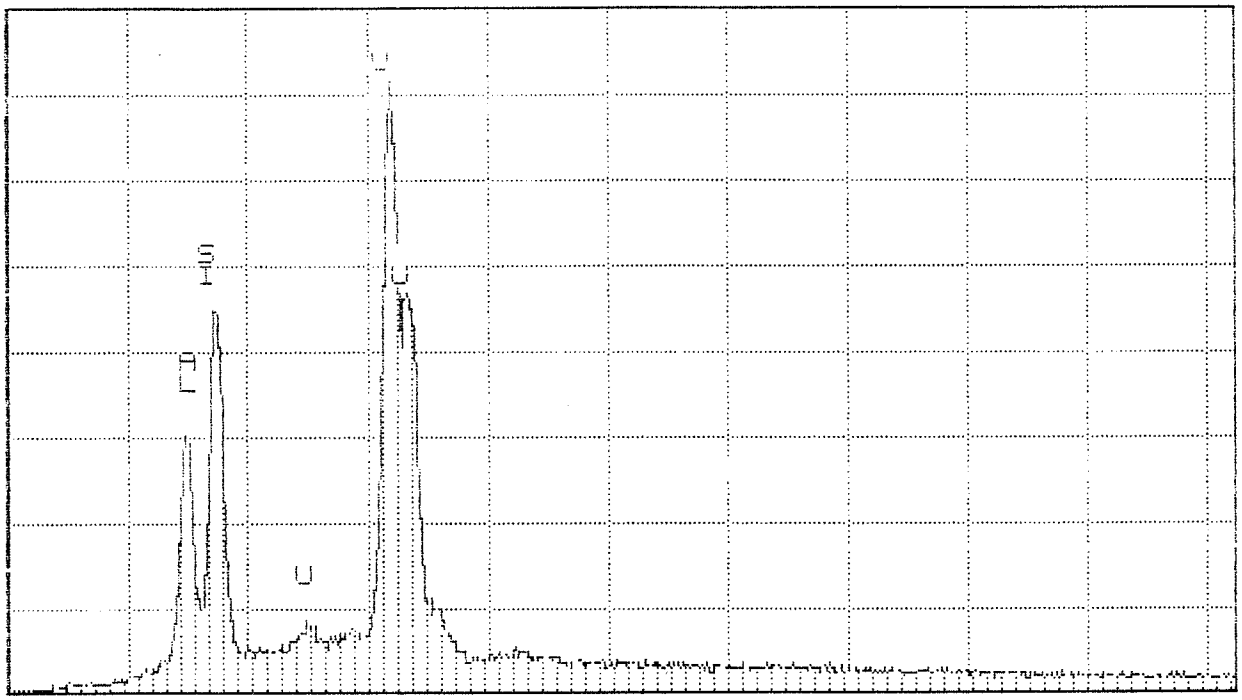


0.000 VFS = 1024 5.120

60 NOPI-1-TS3 LOC1 AREA10

Series II Southwest Research Institute FRI 05-AUG-94 08:45

Cursor: 0.000keV = 0



0.000 VFS = 1024 10.240

60 NOPI-1-TS3 LOC1 AREA13

Series II Southwest Research Institute FRI 05-AUG-94 08:46
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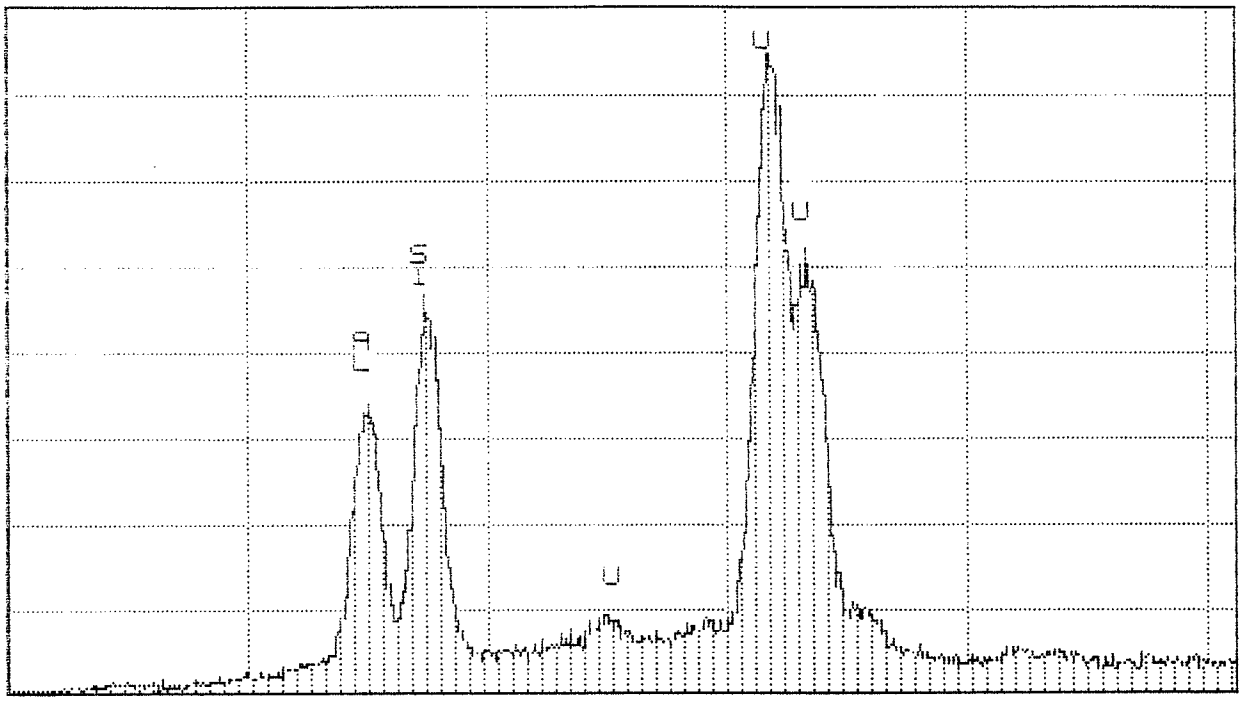

0.000 VFS = 1024 5.120
61 NOPI-1-TS3 LOC2 AREA1

Series II Southwest Research Institute FRI 05-AUG-94 08:47
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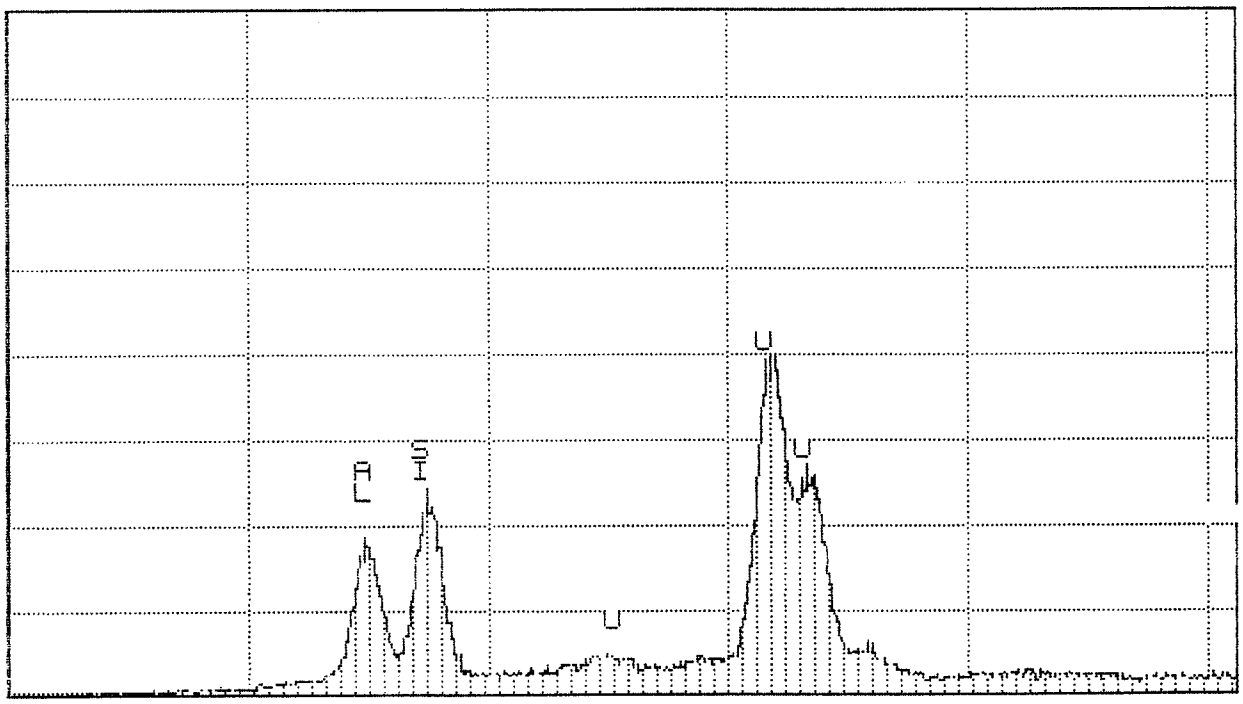

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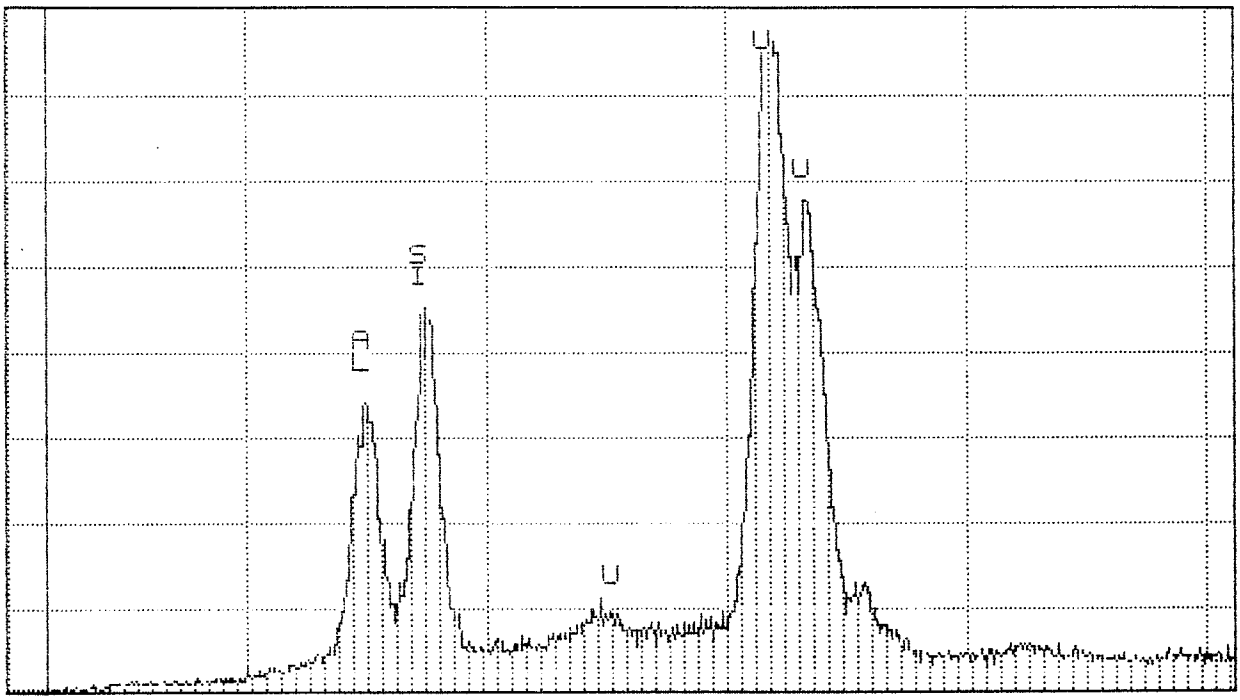
61 NOPI-1-TS3 LOC2 AREA2

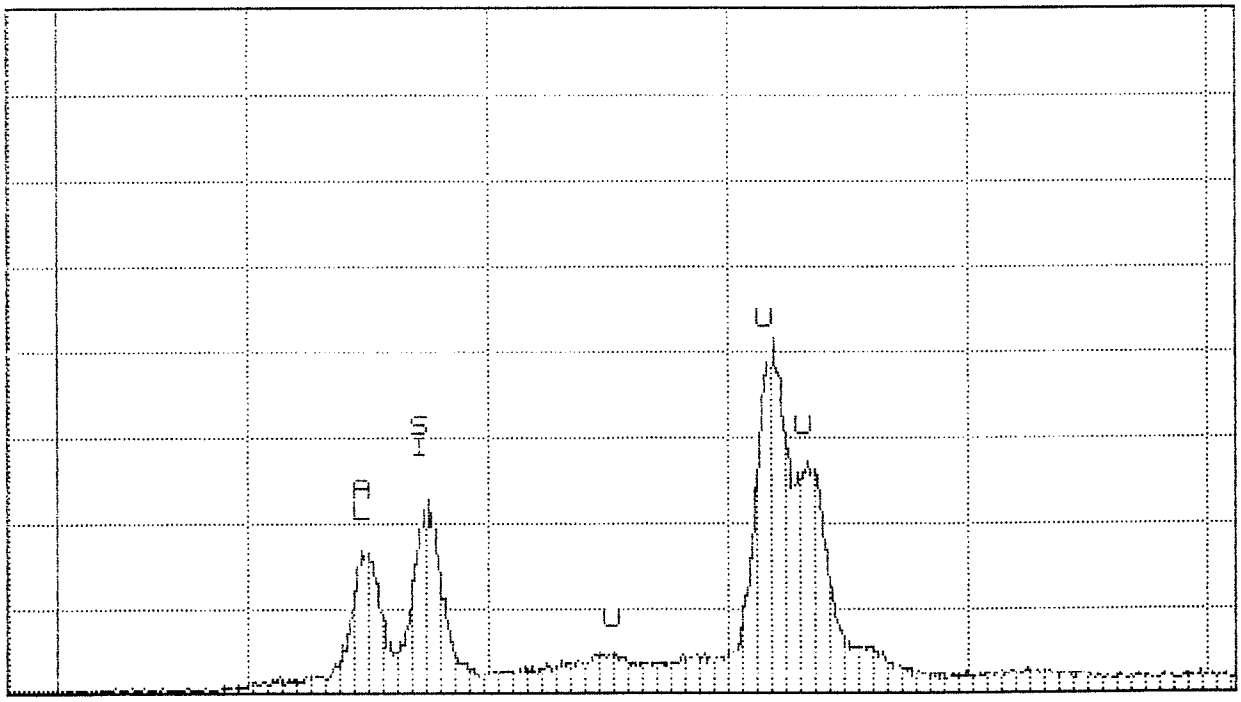
Series II Southwest Research Institute FRI 05-AUG-94 08:48
Cursor: 0.160keV = 0



0.000 VFS = 1024 5.120

51 NOPI-1-TS3 LOC2 AREA3

Series II Southwest Research Institute FRI 05-AUG-94 08:50
Cursor: 0.200keV = 2



0.000 VFS = 2048 5.120

60 NOPI-1-TS3 LOC2 AREA4

Series II Southwest Research Institute FRI 05-AUG-94 08:51
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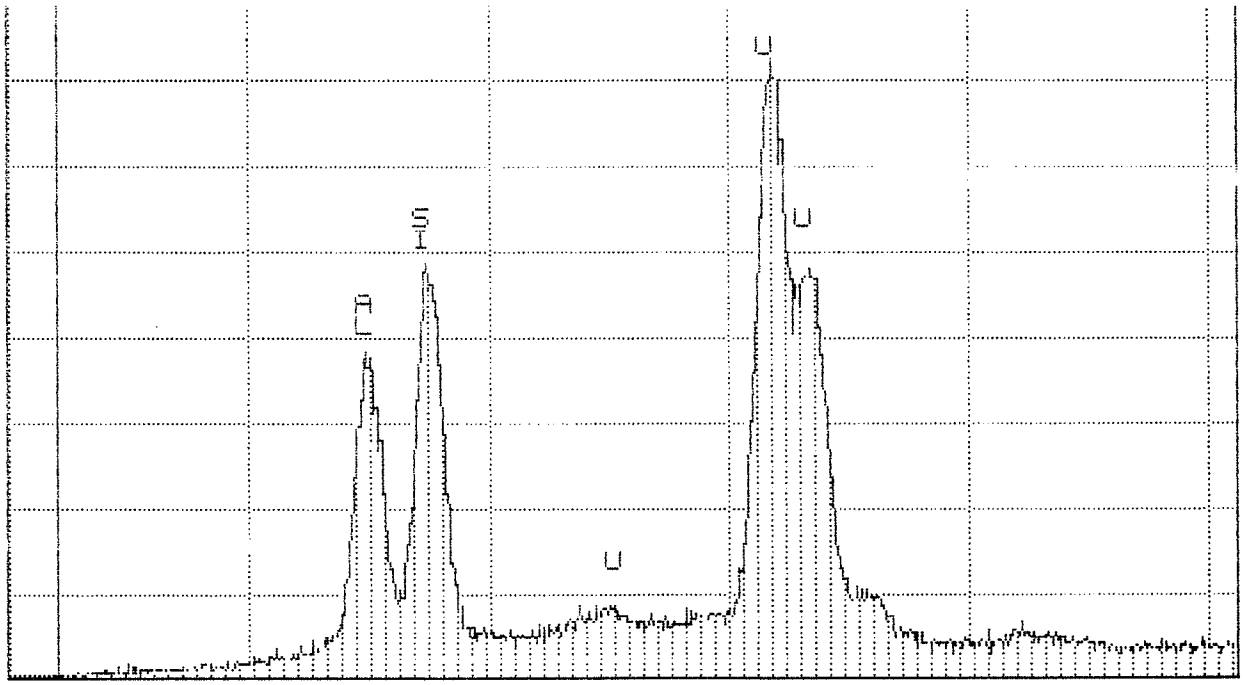
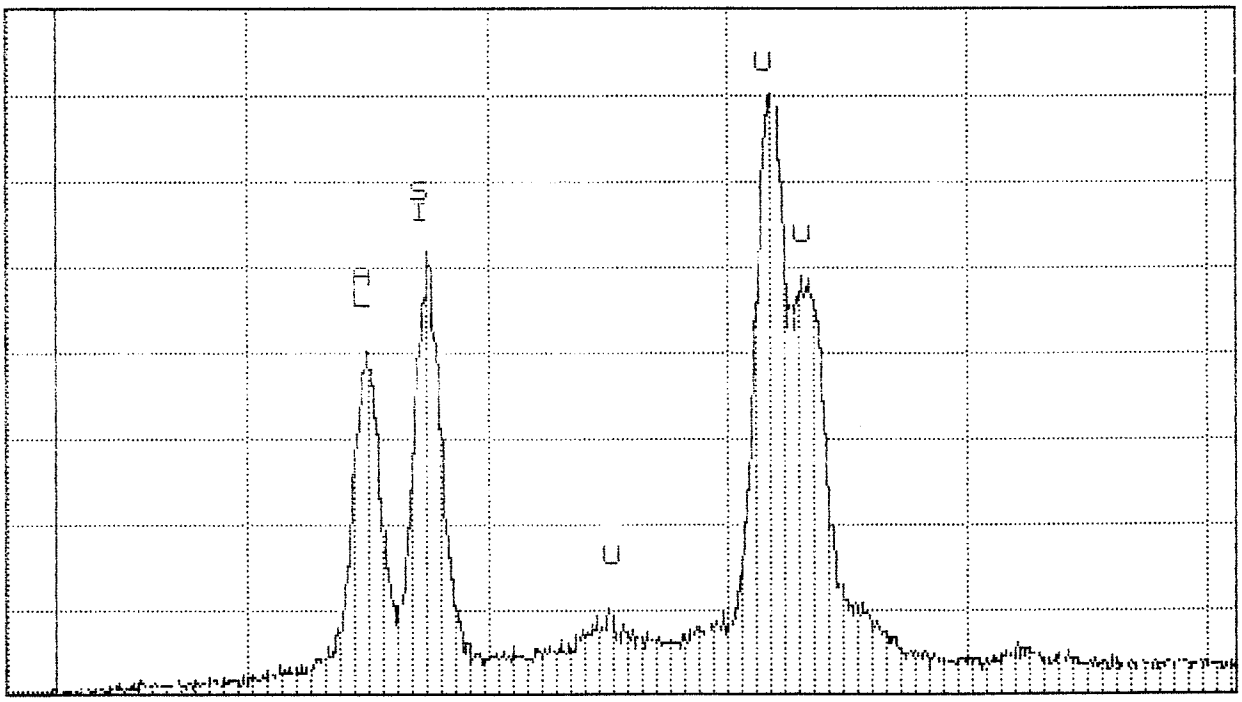


0.000 VFS = 1024 5.120

61 NOPI-1-TS3 LOC2 AREA5

Series II Southwest Research Institute FRI 05-AUG-94 08:52

Cursor: 0.200keV = 3



0.000 VFS = 1024 5.120

60 NOPI-1-TS3 LOC2 AREA6

Series II Southwest Research Institute FRI 05-AUG-94 08:54
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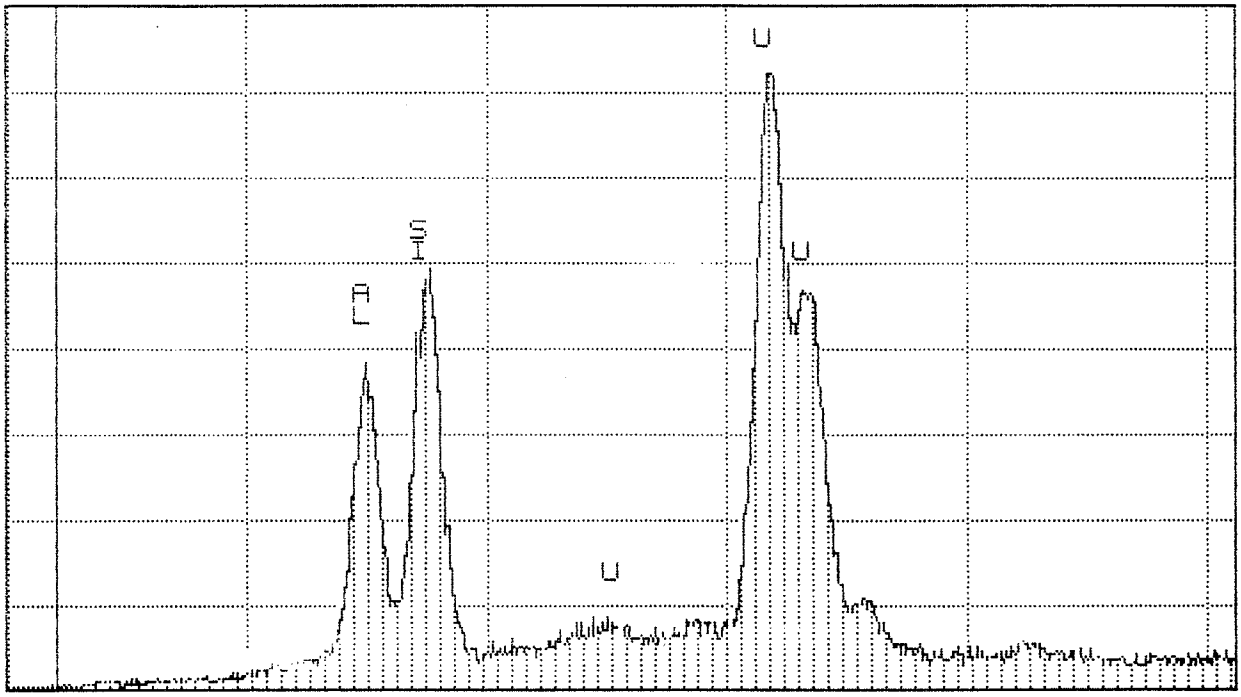

0.000 VFS = 1024 5.120
60 NOPI-1-TS3 LOC2 AREA7

Series II Southwest Research Institute FRI 05-AUG-94 08:55
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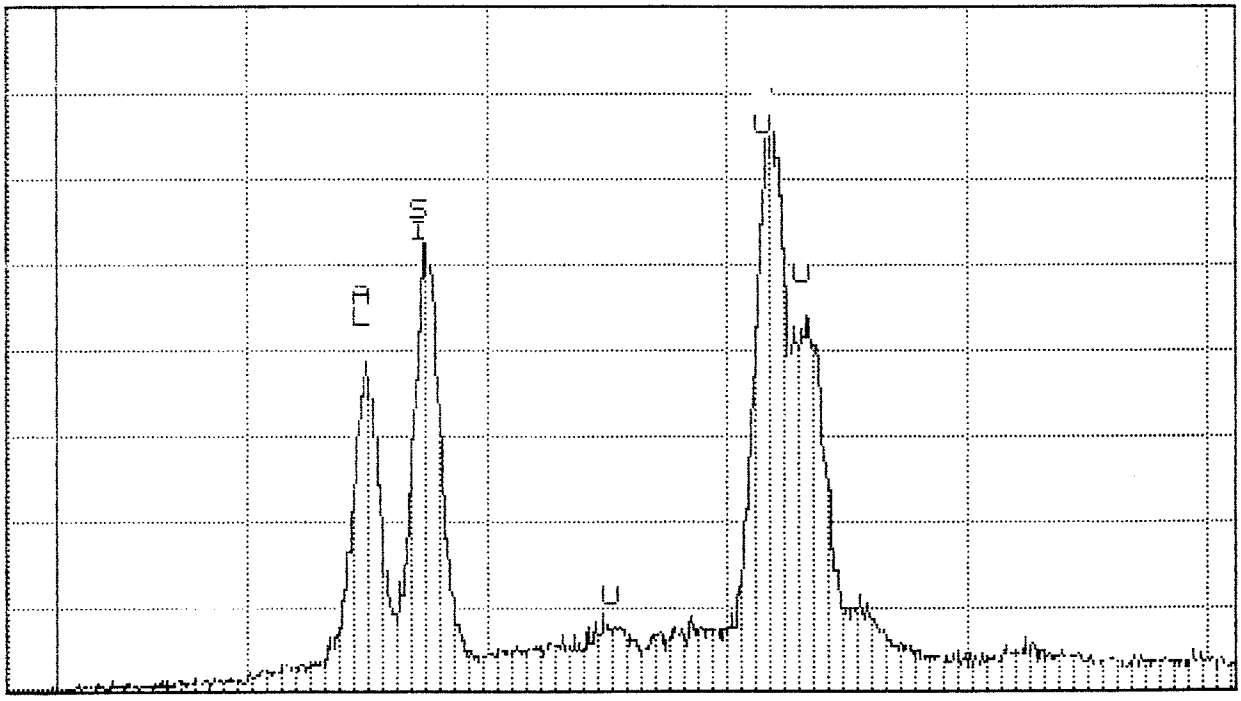

0.000 VFS = 1024 5.120
60 NOPI-1-TS3 LOC2 AREA8

Series II Southwest Research Institute FRI 05-AUG-94 08:56
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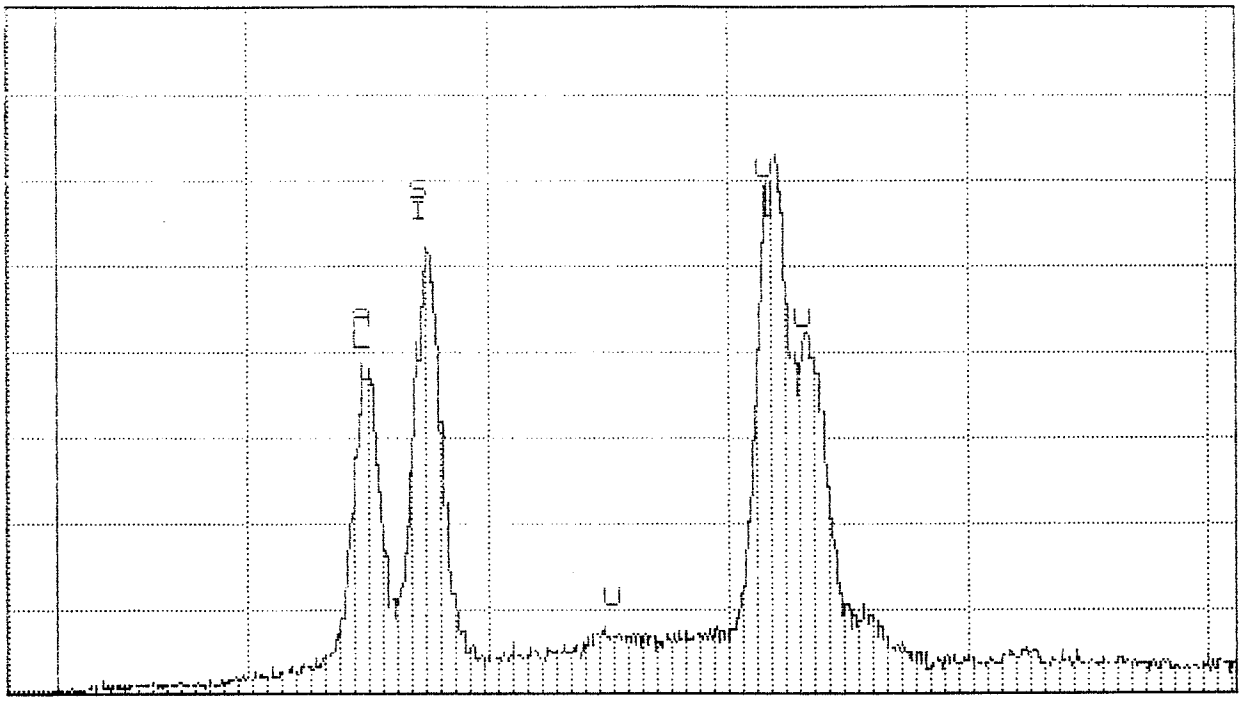

0.000 VFS = 1024 5.120
60 NOPI-1-TS3 LOC2 AREA9

Series II Southwest Research Institute FRI 05-AUG-94 08:58
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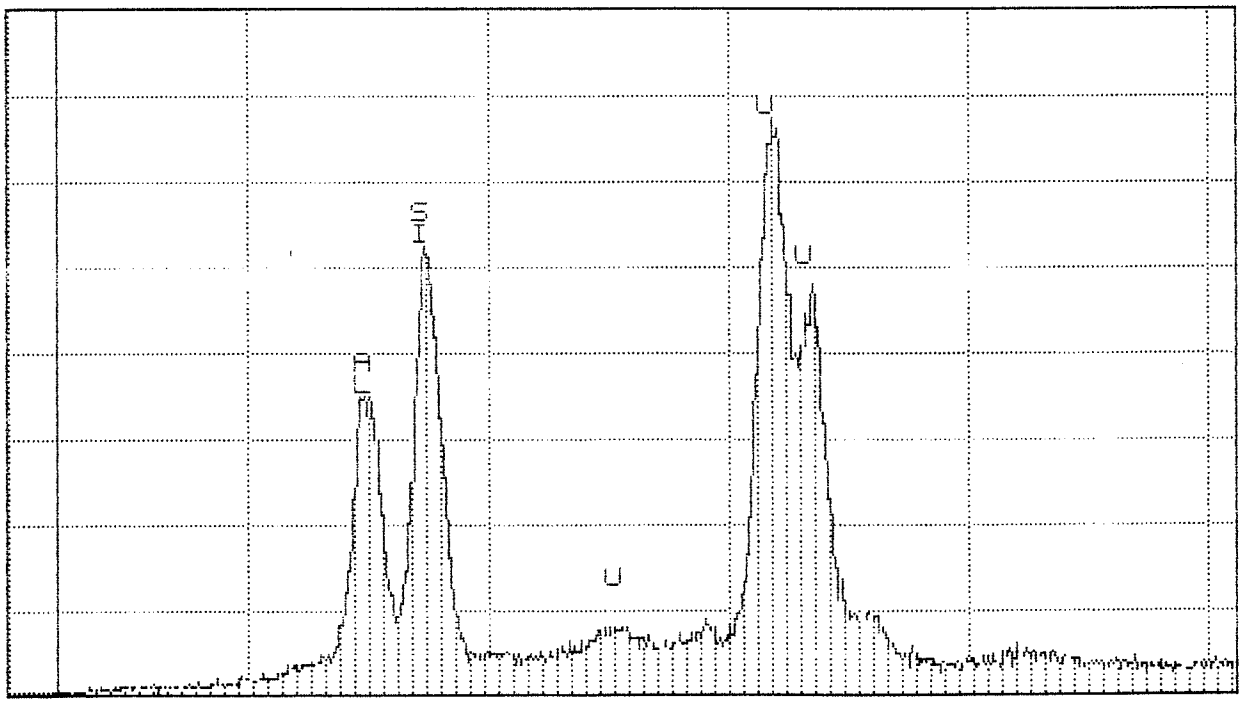

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60 NOPI-1-TS3 LOC2 AREA10

Series II Southwest Research Institute FRI 05-AUG-94 08:59
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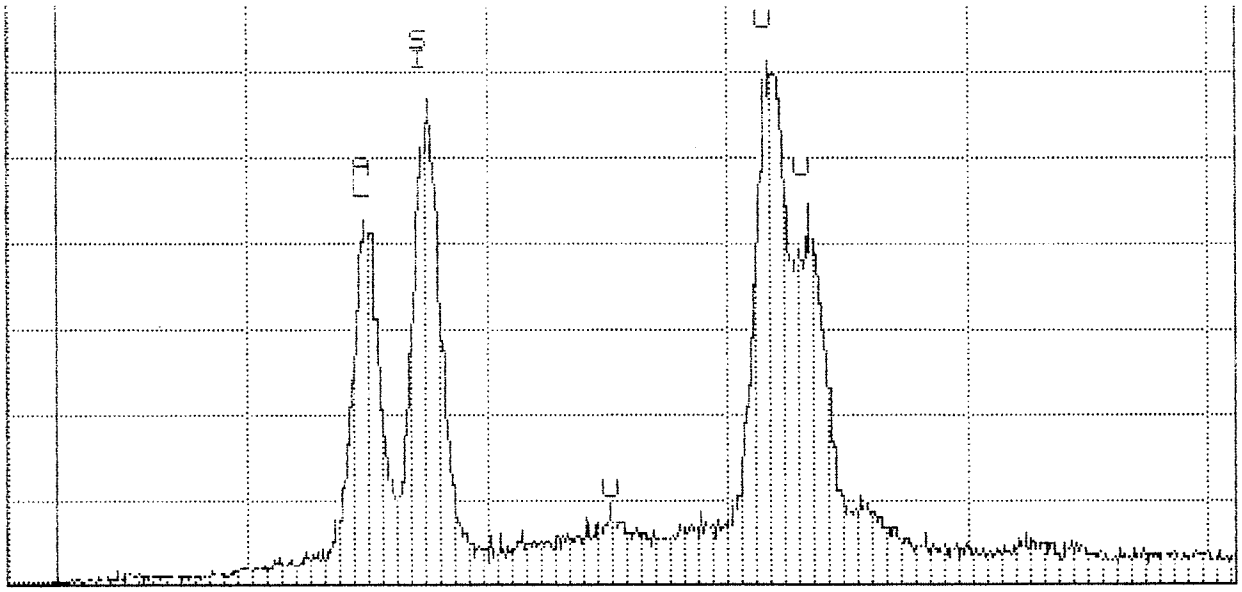

0.000 VFS = 1024 5.120

60 NOPI-1-TS3 LOC2 AREA13

Series II Southwest Research Institute FRI 05-AUG-94 09:02

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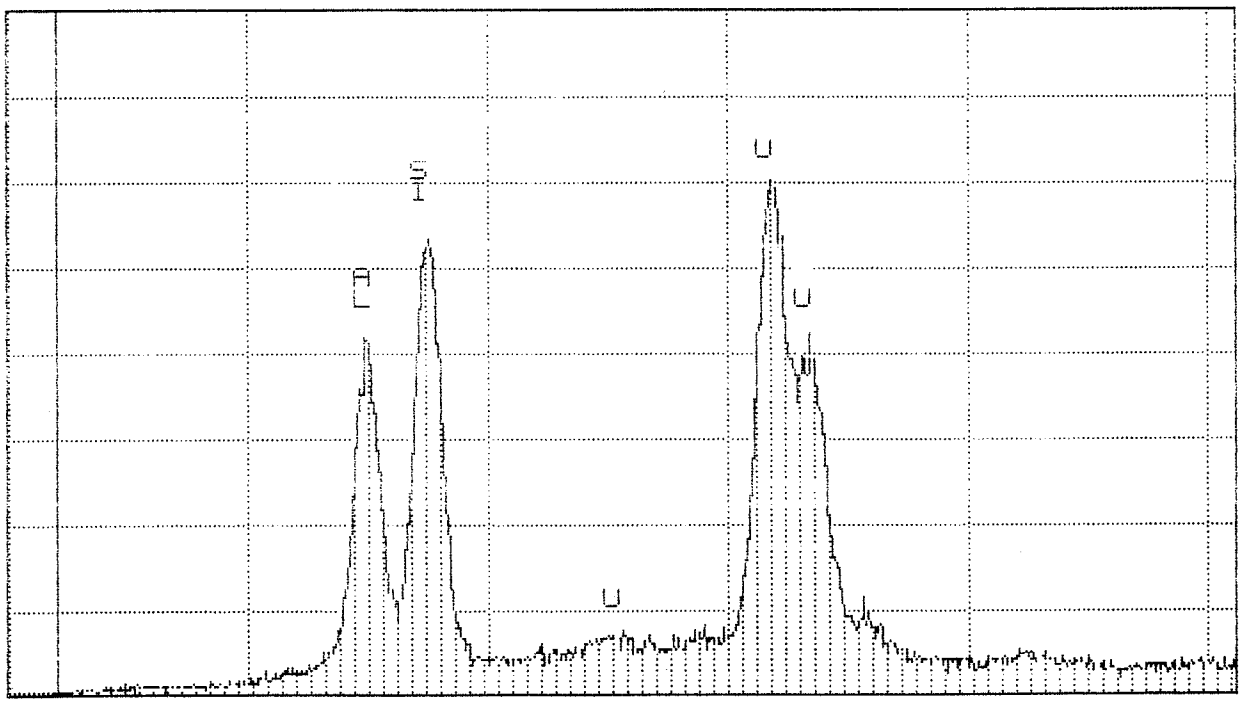

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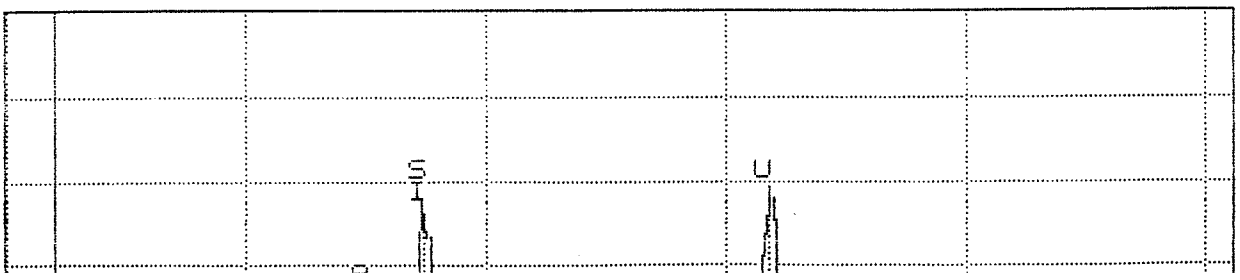
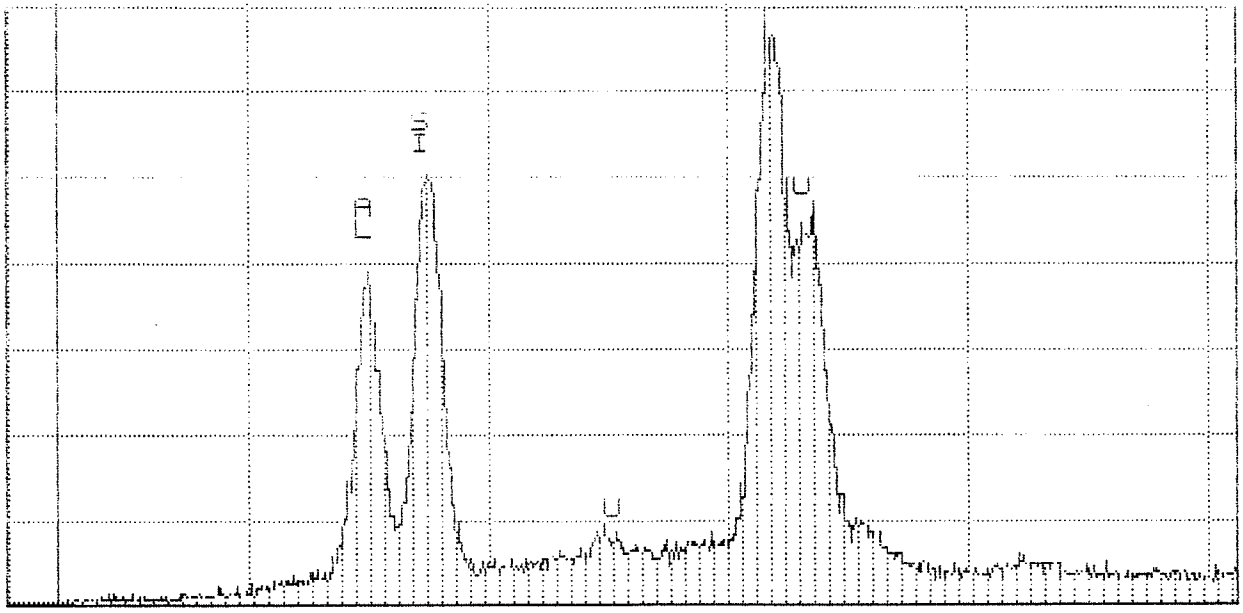
60 NOPI-1-TS3 LOC2 AREA14

Series II Southwest Research Institute FRI 05-AUG-94 09:04

Cursor: 0.200keV = 4



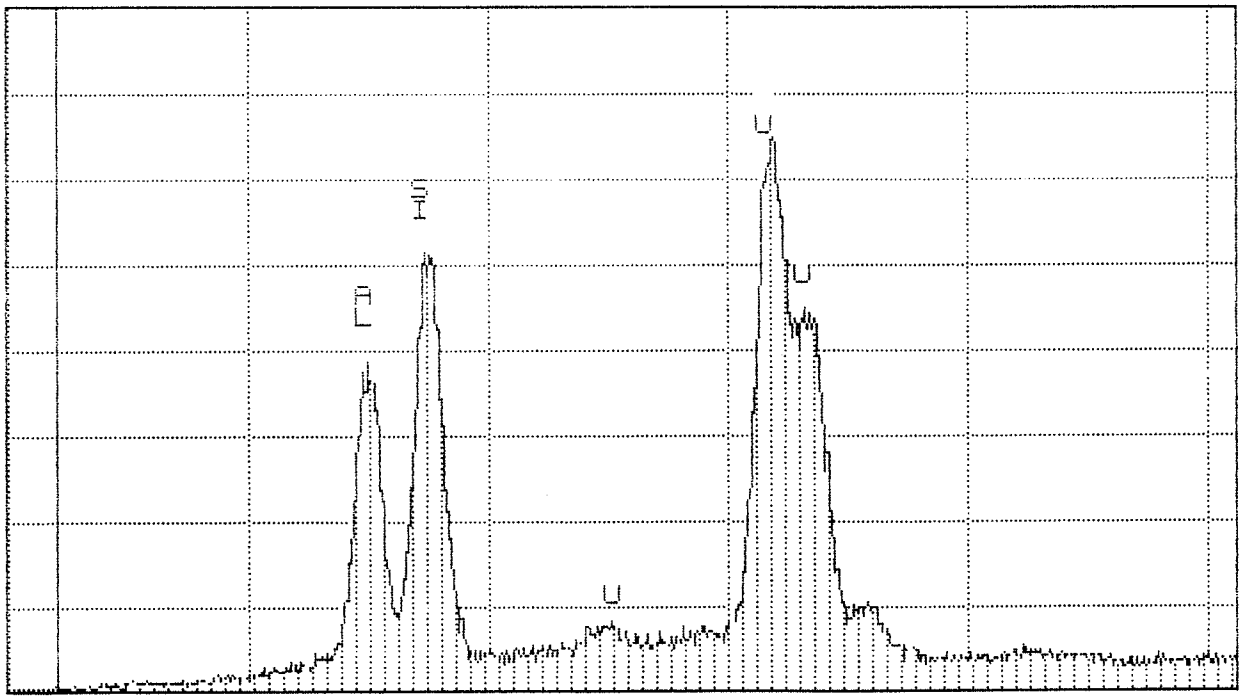


0.000 VFS = 1024 5.120

60 NOPI-1-TS3 LOC2 AREA11

Series II Southwest Research Institute FRI 05-AUG-94 09:00

Cursor: 0.200keV = 4



0.000 VFS = 1024 5.120

60 NOPI-1-TS3 LOC2 AREA12

Series II Southwest Research Institute FRI 05-AUG-94 09:01

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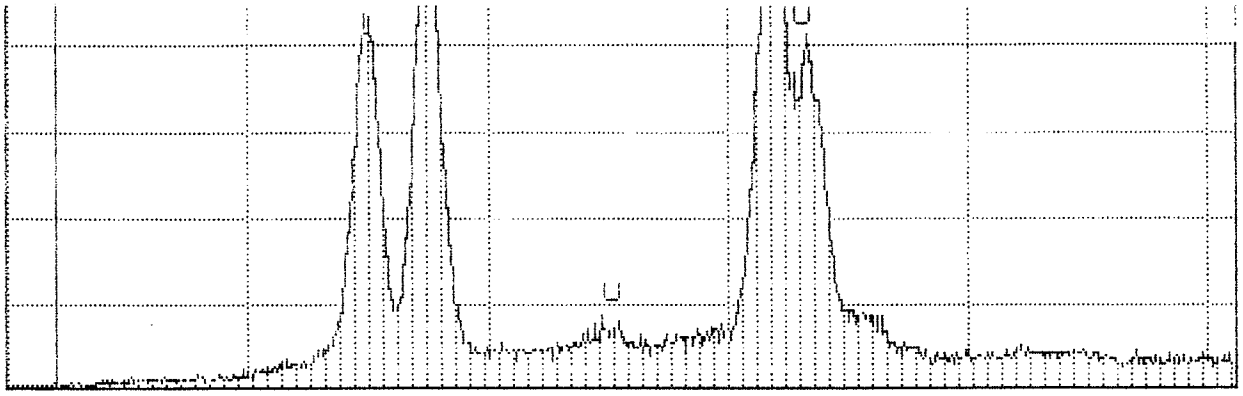
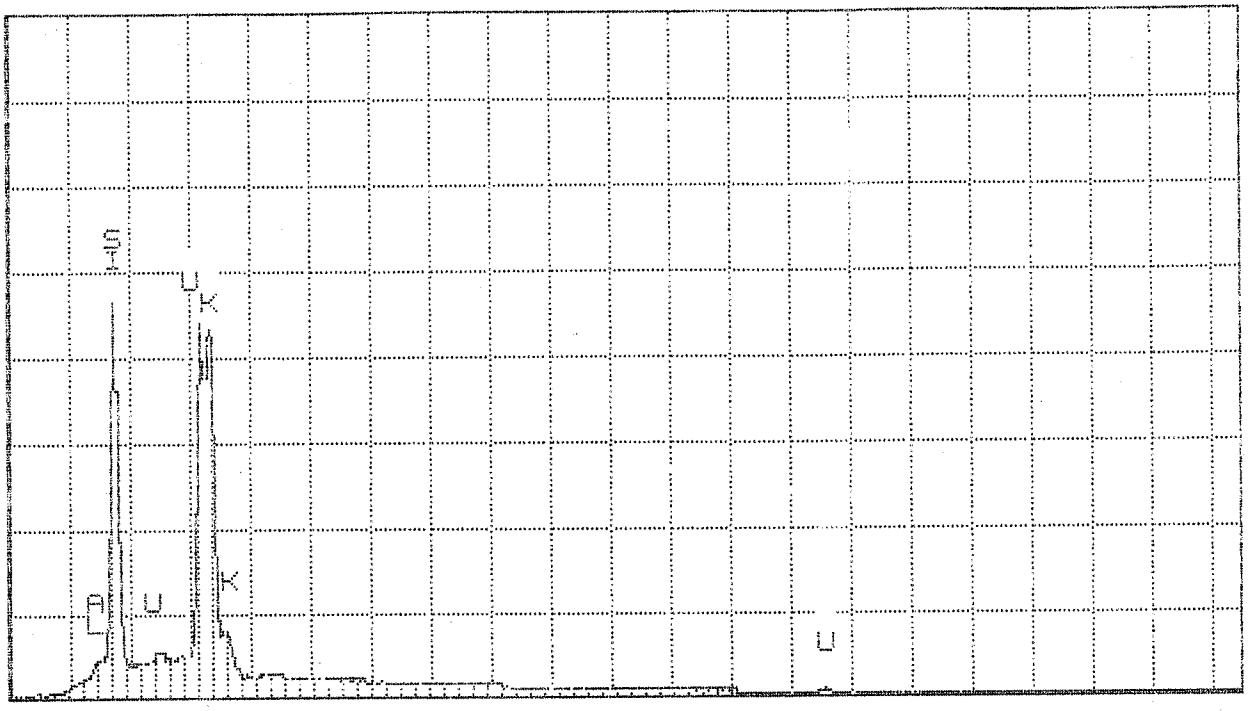


0.000 VFS = 1024 5.120

60 NOPI-1-TS3 LOC2 AREA1

Series II Southwest Research Institute MON 21-OCT-91 13:50 weeksite

Cursor: 0.000keV = 0 ROI (0) 0.000: 0.000



0.000 VFS = 4096 20.480

166 #5 EDS(1) 20KV WD=26

Samples - rock chips

1 NOPI-ECP-1 Uraninite with yellow uranium silicates

* 2) NOPI-ECP-1 Altered area - yellow uranium silicate

3) NOPI-ECP-1 Yellow uranium silicate

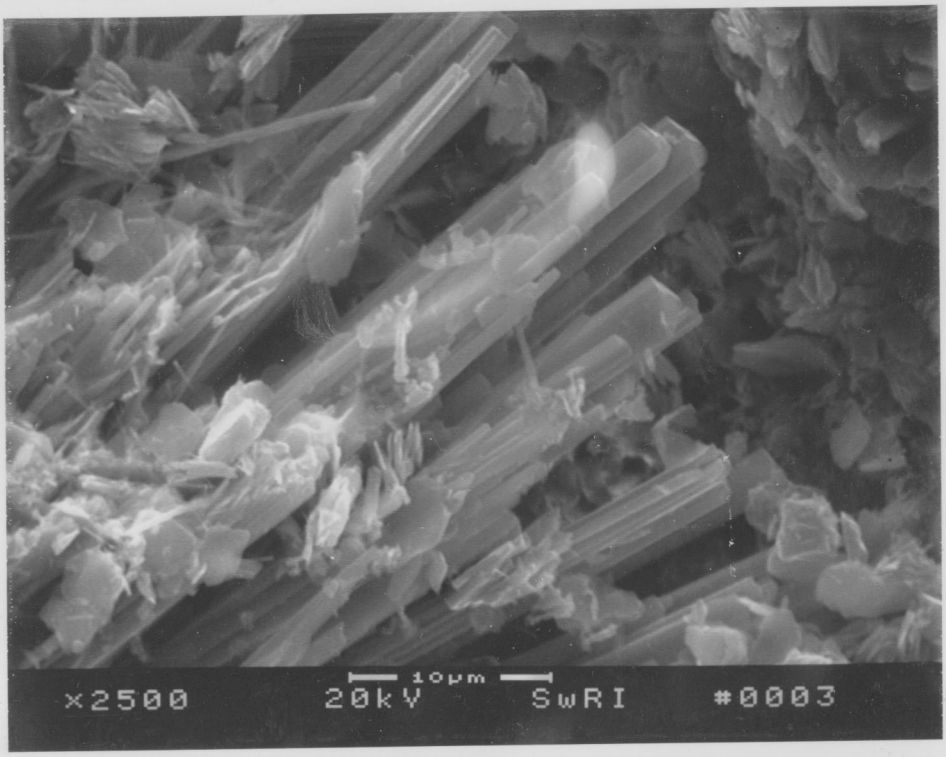
* 4) NOPI-ECP-1 Black uraninite with yellow uranin silicate

* 5) NOPI-ECP-3 Weeksite in open space in altered host rock.

6) NOPI-ECP-2A Yellow-green-red minerals.

7) NOPI-ECP-2A Yellow uranium minerals

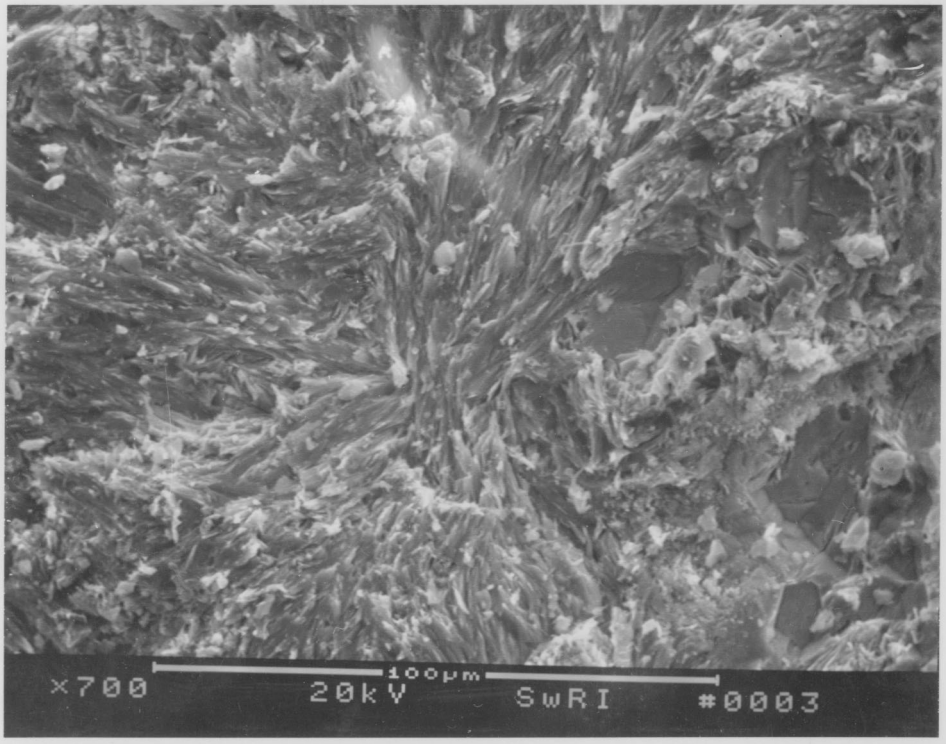
* 8) PUE1-ECP-2 Uranin minerals replacing Feldspar.



5

052121

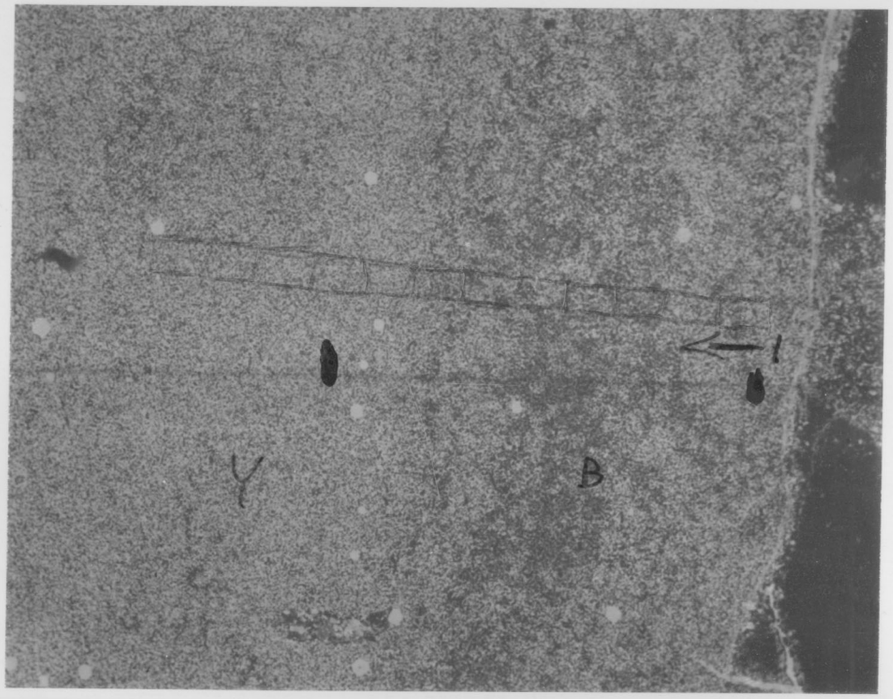
#5



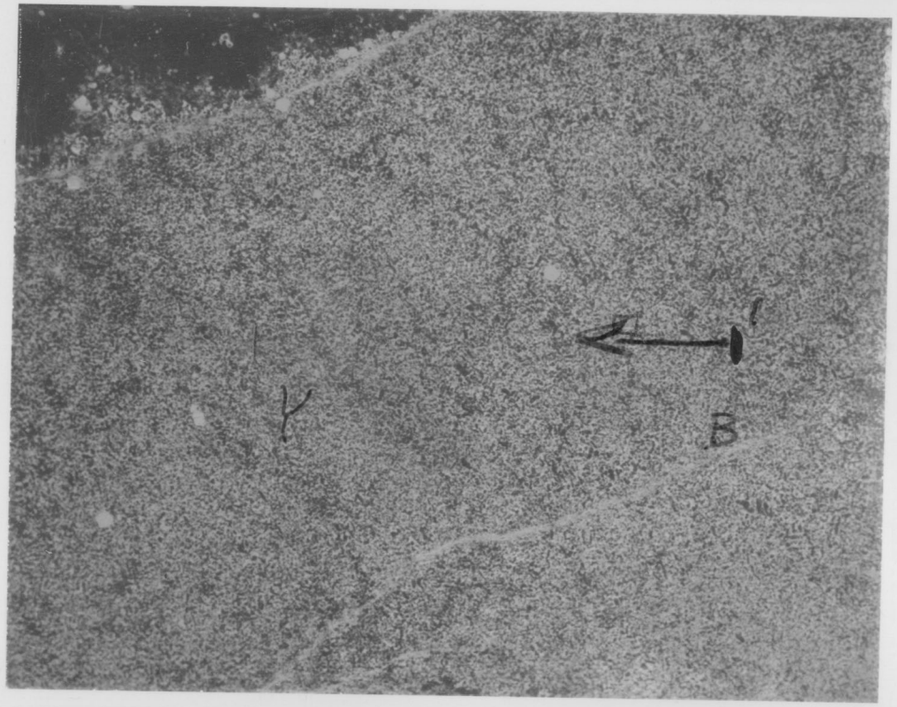
4

052120

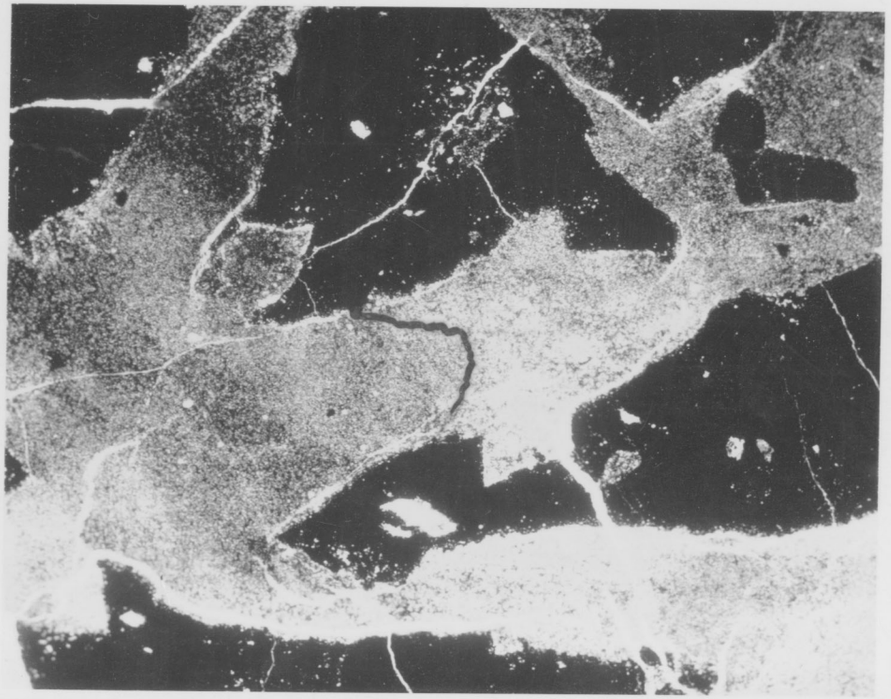
#5



068870



068871



9) NOPI-ECP-1 Uraninite & yellow minerals

10) NOPI-ECP-1 Altered rock near uraninite (uranophane present)

11) NOPI-ECP-1 Altered rock away from uraninite.

12) NOPI-ECP-2A-TS1

* 13) NOPI-ECP-2A-TS1 yellow + green minerals

* 14) NOPI-ECP-2A-TS2 yellow + green minerals

15) NOPI-ECP-3

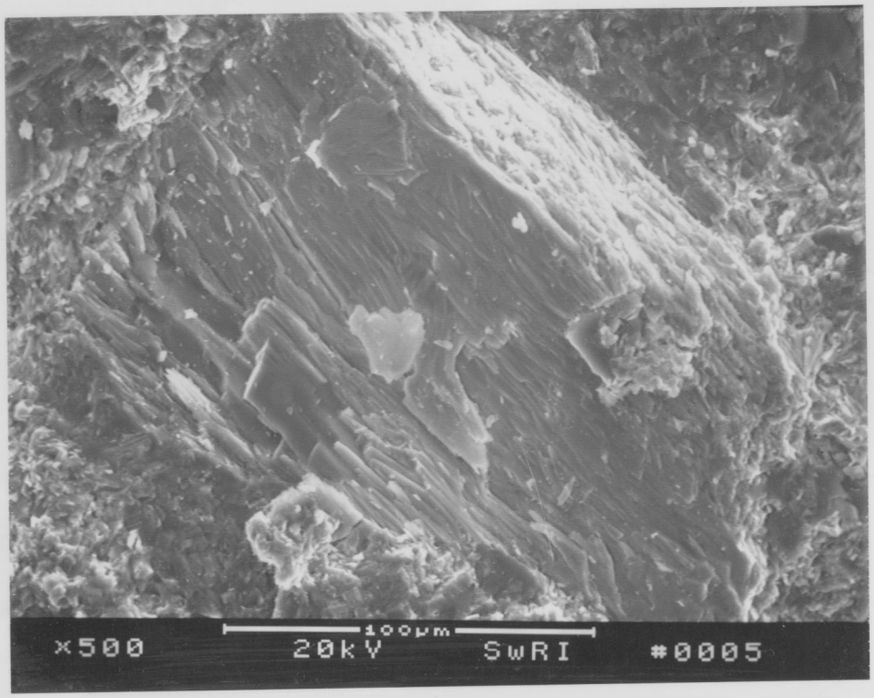
Pena Blanca SEM Analysis

Sample - NOPI-ECP-3

Photo 1 - Radiating crystals of weeksite. Acicular crystals growing into open space.

Photo 2 - Elongate weeksite crystals (needles) of weeksite growing in a vug in host rock.

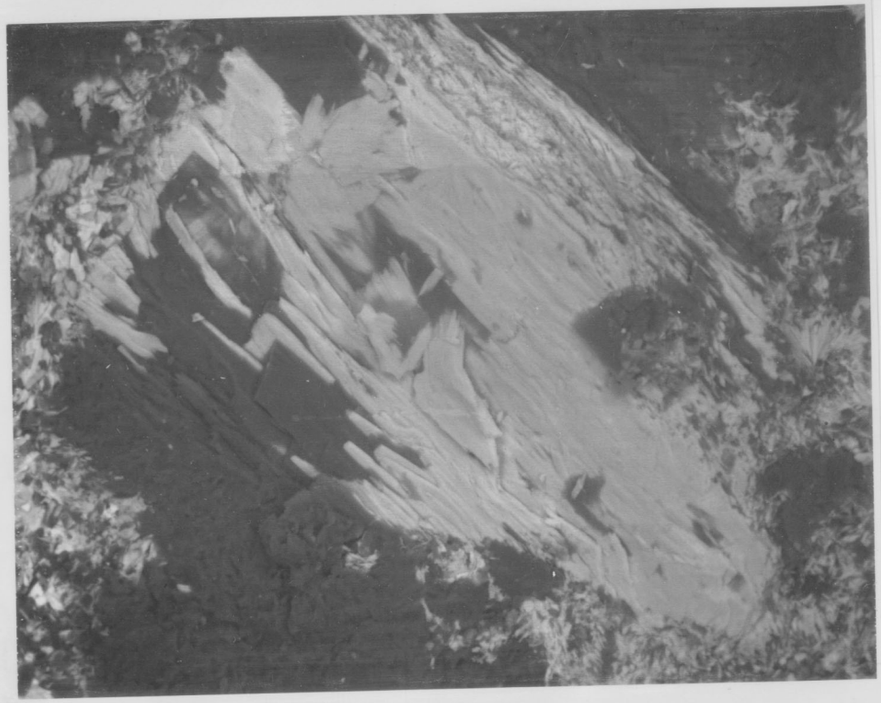
Photo 3 - Again weeksite needles growing in open space.



7

OS2123

#8

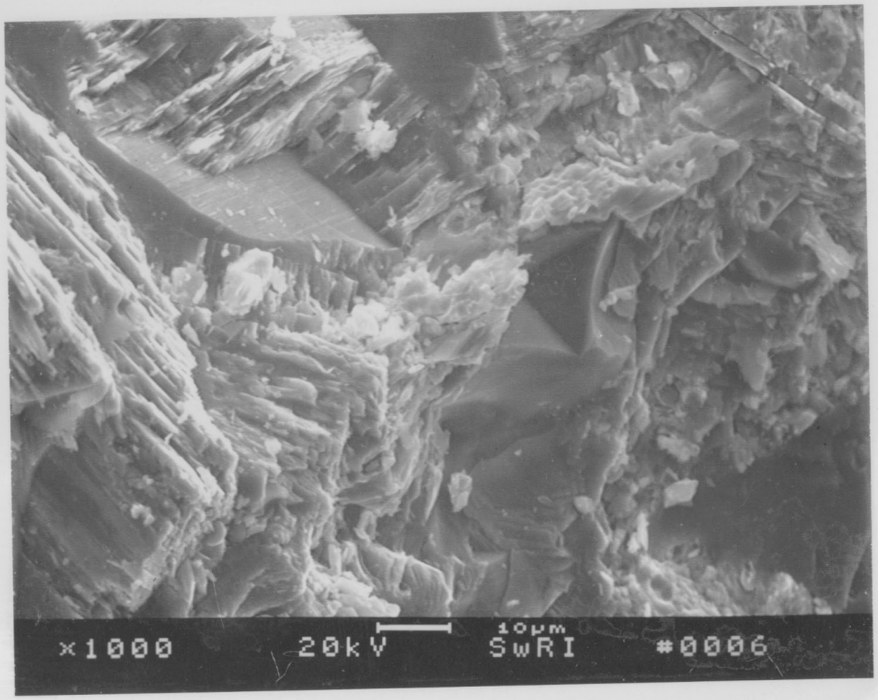


8

OS2124

BSE

#8 500X



9

OS2125

#8

10

OS2126

BSE

#8 1000X

Pena Blanca SEM Analysis

Sample - PUE1-ECP-2

Photo 1 - K-Na feldspar being replaced by elongate weeksite. Replacement can be seen better with backscattered image.

Photo 2 - Back scattered image of previous sample. Bright areas are weeksite. Dark areas are feldspar and quartz of host rock.

Photo 3 - Corroded feldspar being replaced by weeksite.

Photo 4 - Back scattered image of previous sample. Bright areas are weeksite, dark areas are feldspar. Gray areas are hematite.

Pena Blanca SEM Analyses

Bill Murphy Data

SEM/EDS analyses of NOPI
polished thin sections 10/11/91

work by William M. Murphy and
James Spencer

Thin section NOPI-ECP3-TS1

Yellow radiating sprays in fractures and vugs are rich in K ∴ probably weeksite.

Qualitative, standardless analysis by EDS gives

Si	21.53	6	per 6 Si
K	5.35	1.49	
U	8.90	2.48	
Ca	0.35	0.1	
O	63.87		
	100 atom percent		

Weeksite is nominally $K_2(UO_2)_2Si_6O_{15} \cdot 4H_2O$

NOPI - ECP3 - TS1

10/11/91
WMM

yellow radiating

SQ: SUBTRACT

SQ: SETUP DEFINITIONS

SQ: QUANTIFY

K,Si,U mineral - 20kV WD16
Standardless Analysis
20.0 KV 34.4 Degrees

Chi-sqd = 1.94

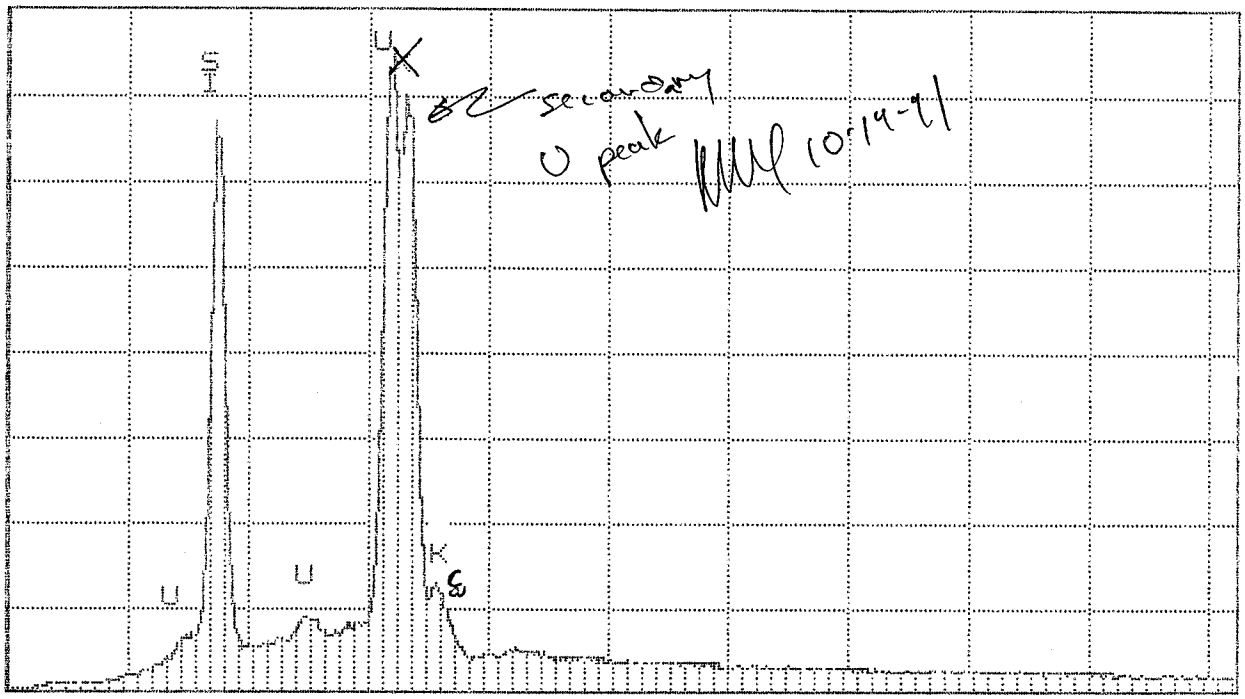
Element	Rel. K-ratio	Net Counts
Si-K	0.17943 +/- 0.00152	44637 +/- 377
K -K	0.08583 +/- 0.01008	19118 +/- 2245
U -M	0.73021 +/- 0.01866	96708 +/- 2471
Ca-K	0.00454 +/- 0.00184	942 +/- 382

ZAF Correction 20.00 kV 34.36 deg
No.of Iterations = 7

Element	K-ratio	Z	A	F	Atom%	Wt%	Formula	Compound%
Si-K	0.109	0.853	1.653	0.989	21.53	15.24	SiO2	32.60
K -K	0.052	0.877	1.150	1.000	5.35	5.27	K 2O	6.35
U -M	0.444	1.223	0.982	1.000	8.90	53.38	U O2	60.55
Ca-K	0.003	0.866	1.484	1.000	0.35	0.36	CaO	0.50
O -K	0.021	0.814	15.189	1.000	63.87	25.76 S	---	---
					Total=	100.00%	Total=	100.00%

SQ: SUBTRACT

Series II Southwest Research Institute FRI 11-OCT-91 09:34
Cursor: 0.000keV = 0 ROI (0) 0.000: 0.000



0.000 VFS = 4096 10.240
180 K,Si,U mineral - 20kV WD16

Series II Southwest Research Institute FRI 11-OCT-91 09:35
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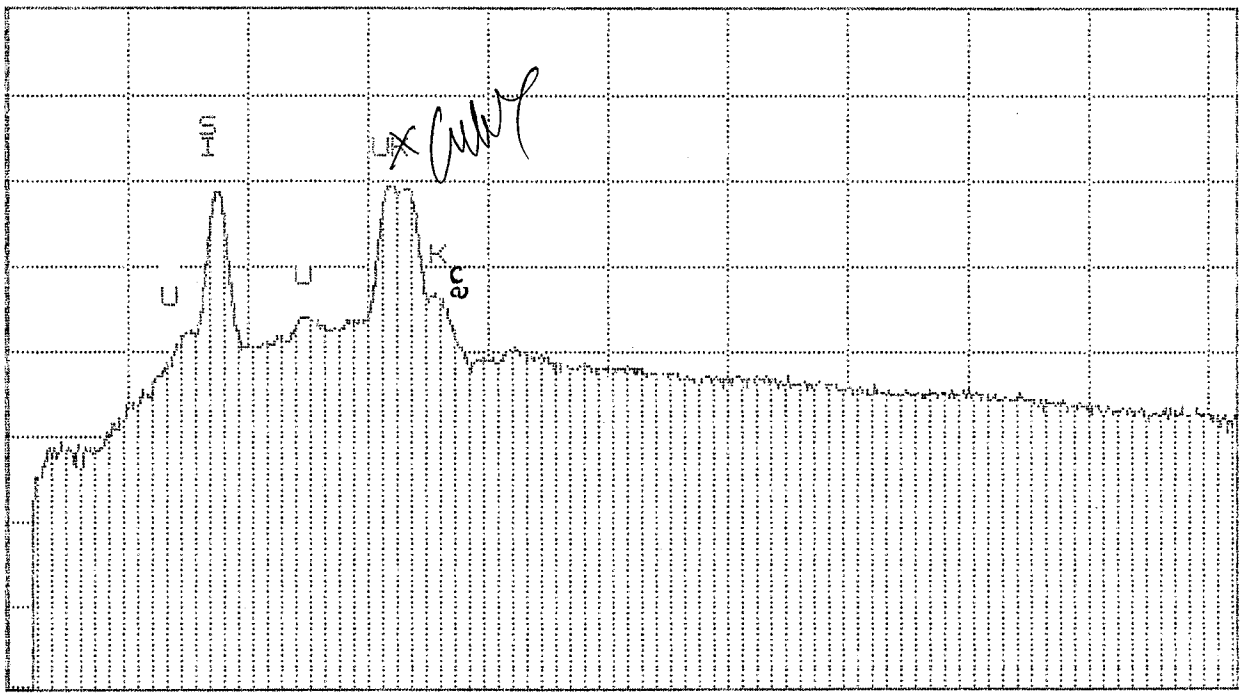
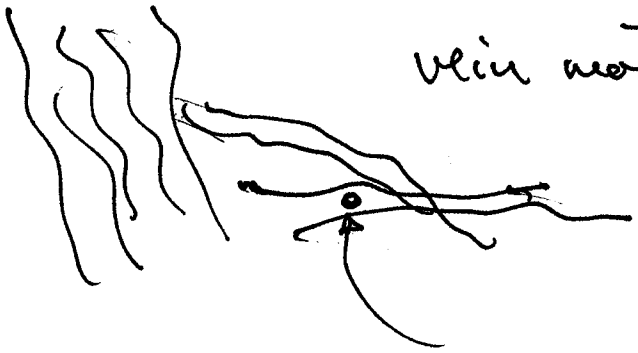


0.000 VFS = LOG 1 10.240
180 K,Si,U mineral - 20kV WD16

EDS NOPI-ECP2-TS-2 -1



Ca, U, K, Si, As

-2 bright vein in larger darker vein

-3 dark material in darker vein: kaolinite

-4 Black crystal - colform "uraninite" possible actinium or radium

5 Yellow material between black and vein: also w/ quartz

-6 Bright vein material in thin vein parallel to big one

Backscattered electron image taken of margin of large vein area

NOPI - ECPZA - TS2 Sample Analysis 1

Material in late yellow-green veins
Atom percent EDS analysis

Si	12.34	6
U	14.58	7.09
Ca	8.94	4.35
As	1.36	0.66
O	62.78	
	100 atom %	

Uranophane is nominally $Ca(UO_2)_2(SiO_3(OH))_2 \cdot 5H_2O$

Sample analysis 2
Similar material to Sample 1

Si	13.06
U	14.90
Ca	8.06

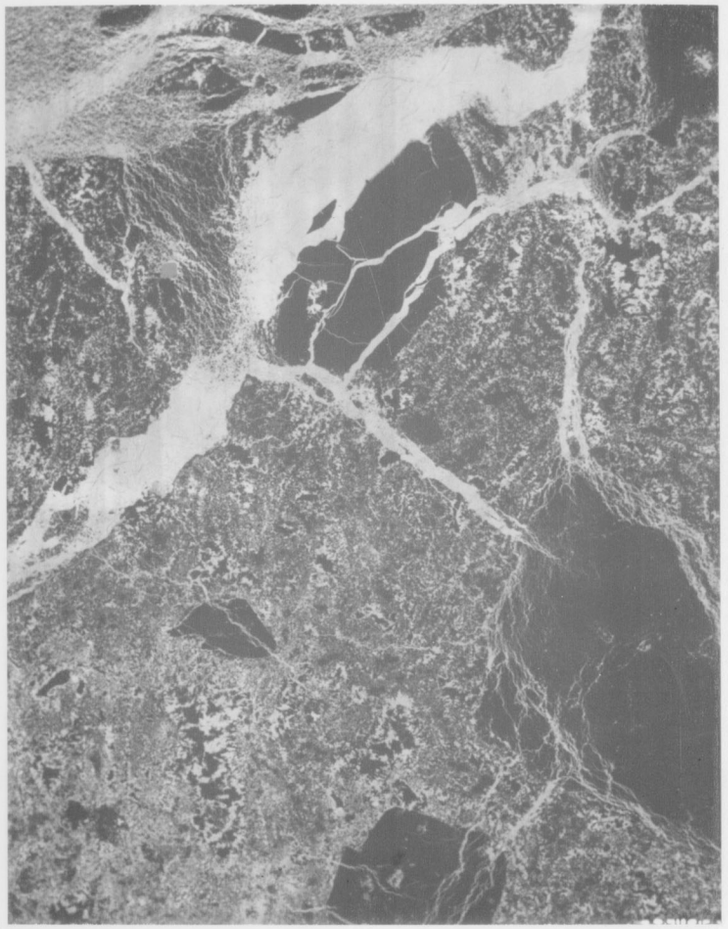
Sample analysis 3

Dark material in veins: pure Si + Al

Si	19.79
Al	16.26

} kaolinite ? $Al_2Si_2O_5(OH)_4$

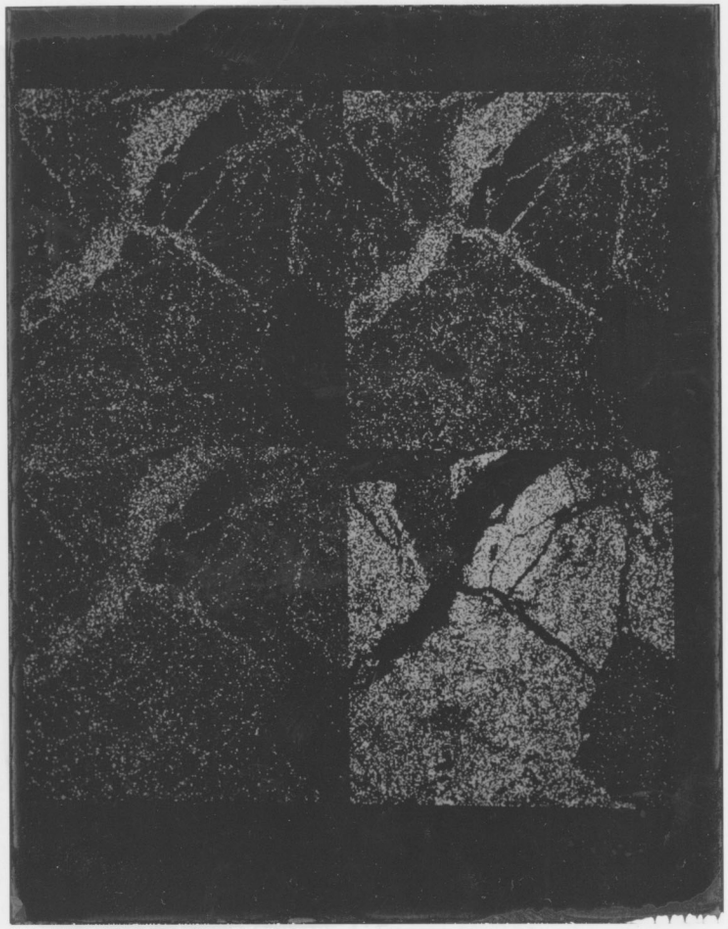
Backscattered SEM image



51895

10/11/91 NOPI-ECP 50X

1



10/11/91 50X

U	U
Ca	Si

2

SQ: SETUP DEFINITIONS

SQ: SETUP DEFINITIONS

SQ: QUANTIFY

Nopi-ecp2-ts-1 - 20kV WD16
Standardless Analysis
20.0 KV 34.4 Degrees

Chi-sqd = 1.07

Element	Rel. K-ratio	Net Counts
Si-K	0.06507 +/- 0.00152	8634 +/- 202
U -M	0.82770 +/- 0.01220	58469 +/- 862
Ca-K	0.07751 +/- 0.00294	8617 +/- 326
As-K	0.02942 +/- 0.01651	354 +/- 199

ZAF Correction 20.00 kV 34.36 deg
No.of Iterations = 8

Element	K-ratio	Z	A	F	Atom%	Wt%	Formula	Compound%
Si-K	0.046	0.812	1.797	0.989	12.34	6.56	SiO2	14.04
U -M	0.578	1.161	0.982	0.998	14.58	65.70	U O2	74.53
Ca-K	0.054	0.820	1.521	1.000	8.94	6.79	CaO	9.50
As-K	0.021	0.923	1.034	0.985	1.36	1.93	As	1.93
O -K	0.014	0.774	17.069	1.000	62.78	19.02 S	----	----
					Total=	100.00%	Total=	100.00%

NO K

Series II Southwest Research Institute FRI 11-OCT-91 14:40

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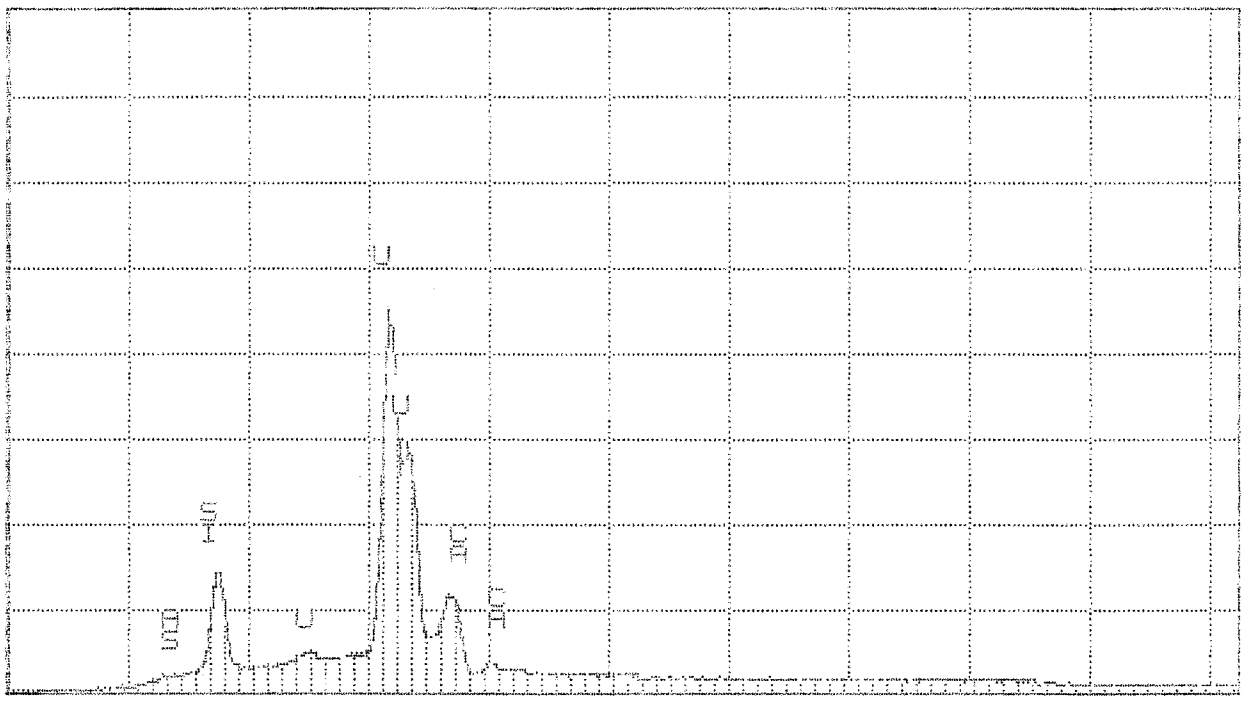

0.000 VFS = 4096 10.240

180 Nopi-ecp2-ts-1 - 20kV WD16

A 2

No K

SO: SETUP DEFINITIONS

SO: SETUP DEFINITIONS

SO: QUANTIFY

A 2

Nopi-ecp2-ts-2 - 20kV WD26
Standardless Analysis
20.0 KV 40.5 Degrees

Chi-sqd = 3.24

Element	Rel. K-ratio	Net Counts
Si-K	0.07455 +/- 0.00121	17653 +/- 286
U -M	0.85217 +/- 0.00918	108327 +/- 1167
Ca-K	0.07328 +/- 0.00220	14282 +/- 429

ZAF Correction 20.00 kV 40.48 deg
No.of Iterations = 9

Element	K-ratio	Z	A	F	Atom%	Wt%	Formula	Compound%
Si-K	0.052	0.810	1.670	0.988	13.06	6.97	SiO2	14.92
U -M	0.595	1.158	0.981	0.998	14.90	67.43	U O2	76.49
Ca-K	0.051	0.818	1.463	1.000	8.06	6.14	CaO	8.59
O -K	0.016	0.774	15.281	1.000	63.98	19.46 S	---	---
					Total=	100.00%	Total=	100.00%

NO K

SQ: SETUP DEFINITIONS

Q: QUANTIFY

A 2

Nopi-ecp2-ts-3 - 20kV WD26
Standardless Analysis
20.0 kV 40.5 Degrees

Chi-sqd = 0.95

Element	Rel. K-ratio	Net Counts
Si-K	0.51593 +/- 0.00449	64034 +/- 557
Al-K	0.48407 +/- 0.00485	52917 +/- 530

ZAF Correction 20.00 kV 40.48 deg
No.of Iterations = 9

Element	K-ratio	Z	A	F	Atom%	Wt%	Formula	Compound%
Si-K	0.173	1.017	1.564	1.000	19.79	27.55	SiO2	58.93
Al-K	0.163	1.046	1.290	0.990	16.26	21.74	Al2O3	41.07
O -K	0.331	0.973	2.258	1.000	63.96	50.72 S	----	----
					Total=	100.00%	Total=	100.00%

KAOLINITE

mom.
Al_2O_3 - 39.5
SiO_2 - 46.5
H_2O - 14.0

Series II Southwest Research Institute FRI 11-OCT-91 14:43

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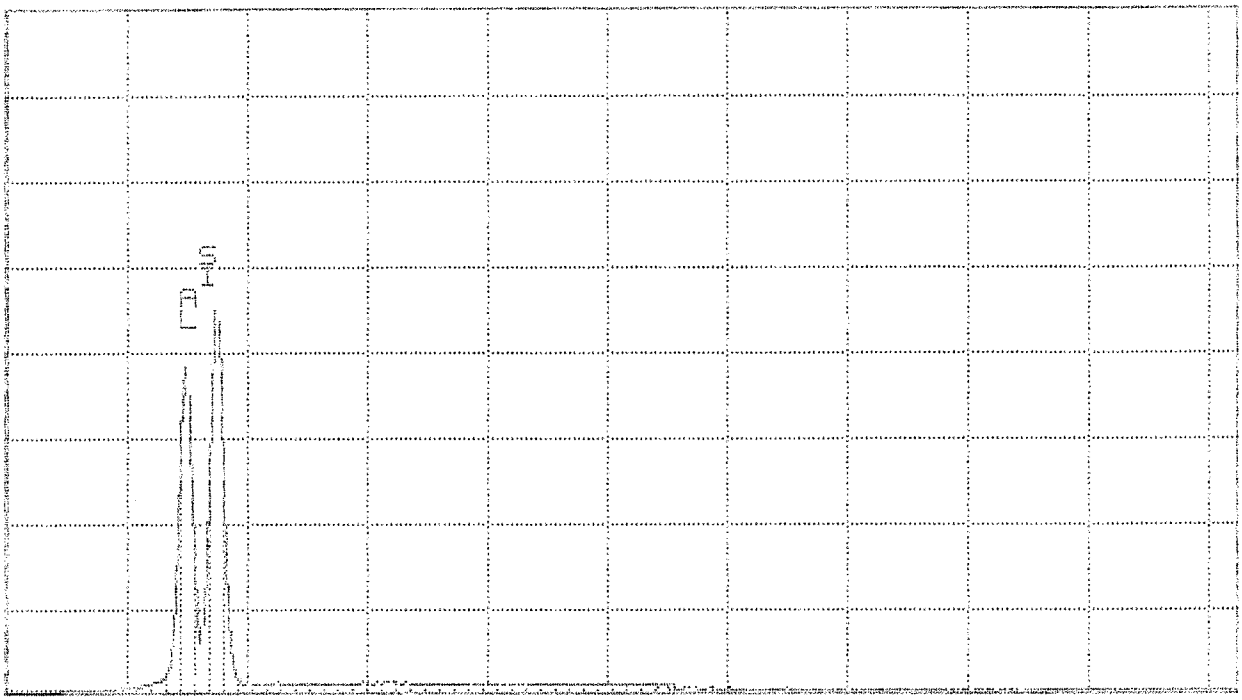


0.000 VFS = 8192 10 240

180 Nopi-ecp2-ts-3 - 20kV WD26

KAOLINITE

Sample analysis 4 NOPI-ECP2A-TS 2
Bright backscattered image in midst of large black opaque area

Si	2.04
U	28.03
Ca	3.30
K	2.12

This is largely uraninite. It may represent more than one phase, but the (Ca+K)/Si ratio is inconsistent with uranophane, weeksite, or quartz, absence of Al (?) rules out kaolinite. Perhaps the K, Ca, and Si are impurities in the uraninite.

S0: SETUP DEFINITIONS

Q0: QUANTIFY

A 2

Nopi-ecp2-ts-4 20kV WD26
Standardless Analysis
20.0 KV 40.5 Degrees

Chi-sqd = 1.75

Element	Rel. K-ratio	Net Counts
Si-K	0.00655 +/- 0.00086	1713 +/- 226
U -M	0.96272 +/- 0.01916	135230 +/- 2691
Ca-K	0.01676 +/- 0.00192	3609 +/- 413
K -K	0.01398 +/- 0.01049	3234 +/- 2428

ZAF Correction 20.00 kV 40.48 deg
No.of Iterations = 5

Element	K-ratio	Z	A	F	Atom%	Wt%	Formula	Compound%
Si-K	0.005	0.757	1.757	0.986	2.04	0.72	SiO2	1.54
U -M	0.786	1.081	0.985	0.999	28.03	83.64	U O2	94.89
Ca-K	0.014	0.761	1.553	1.000	3.30	1.66	CaO	2.32
K -K	0.012	0.782	1.137	0.999	2.12	1.04	K 2O	1.25
O -K	0.011	0.731	16.075	1.000	64.51	12.94 S	----	----
					Total=	100.00%	Total=	100.00%

some K
some Ca

Peña Blanca SEM analysis

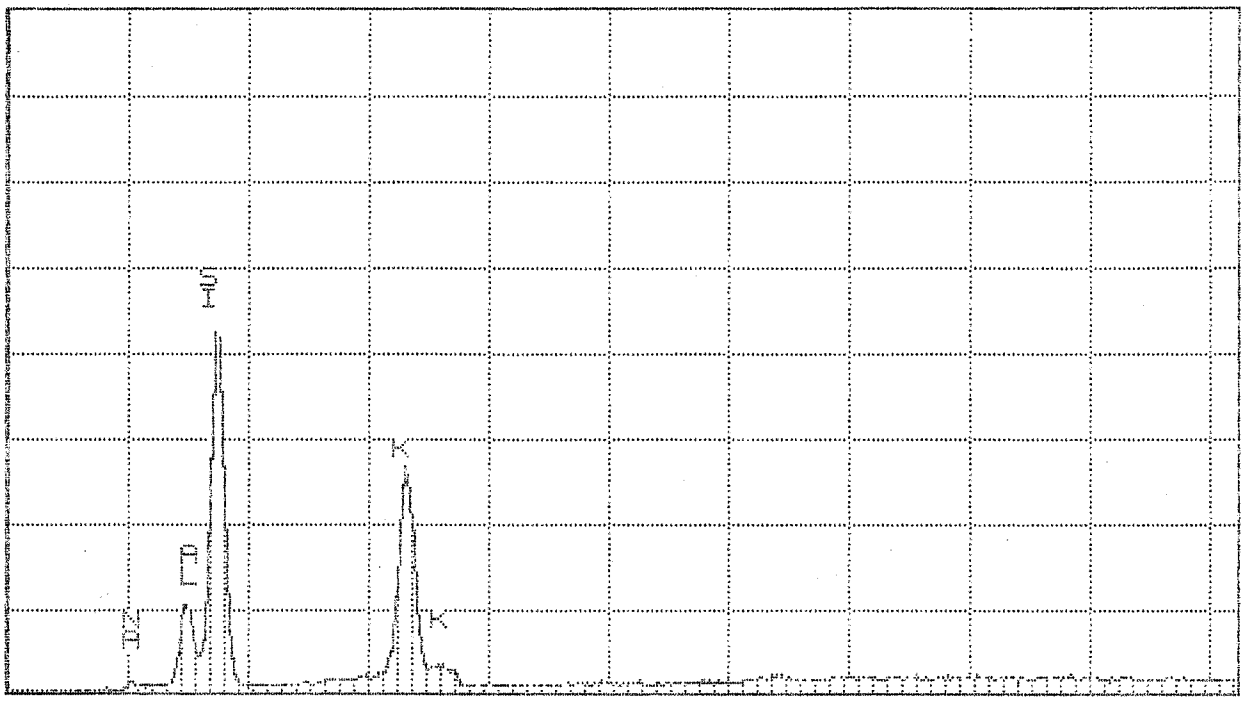
Sample NOPI-ECP-18.05/7.9

Photo # 56312 - botryoidal/reniform hematite Fe_2O_3 growing into open space.

Note that EDS pattern shows no U, but substantial Pb and possibly some Cu. The sample had been coated with Al. The clean surface and morphology of the Fe_2O_3 suggests that U that may be in the Fe_2O_3 would be in the crystalline structure and would have been affected by co-precipitation.

Series II Southwest Research Institute MON 21-OCT-91 14:19 Feldspar

Cursor: 0.000keV = 0 ROI (0) 0.000: 0.000



0.000 VFS = 2048 10.240

70 #8 EDS(1) 20KV WD=25

Series II Southwest Research Institute MON 21-OCT-91 14:22 weeksite

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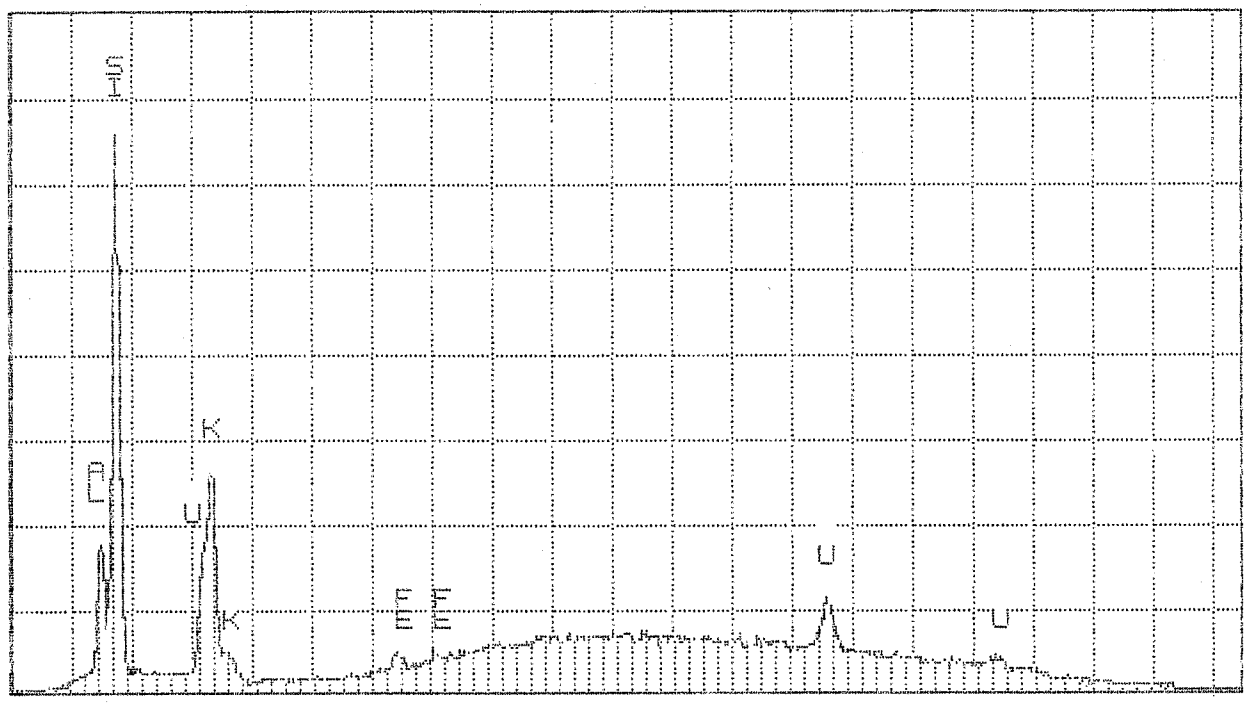

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95 #8 EDS(2) 20KV WD=25

Series II Southwest Research Institute MON 21-OCT-91 14:50 Hematite

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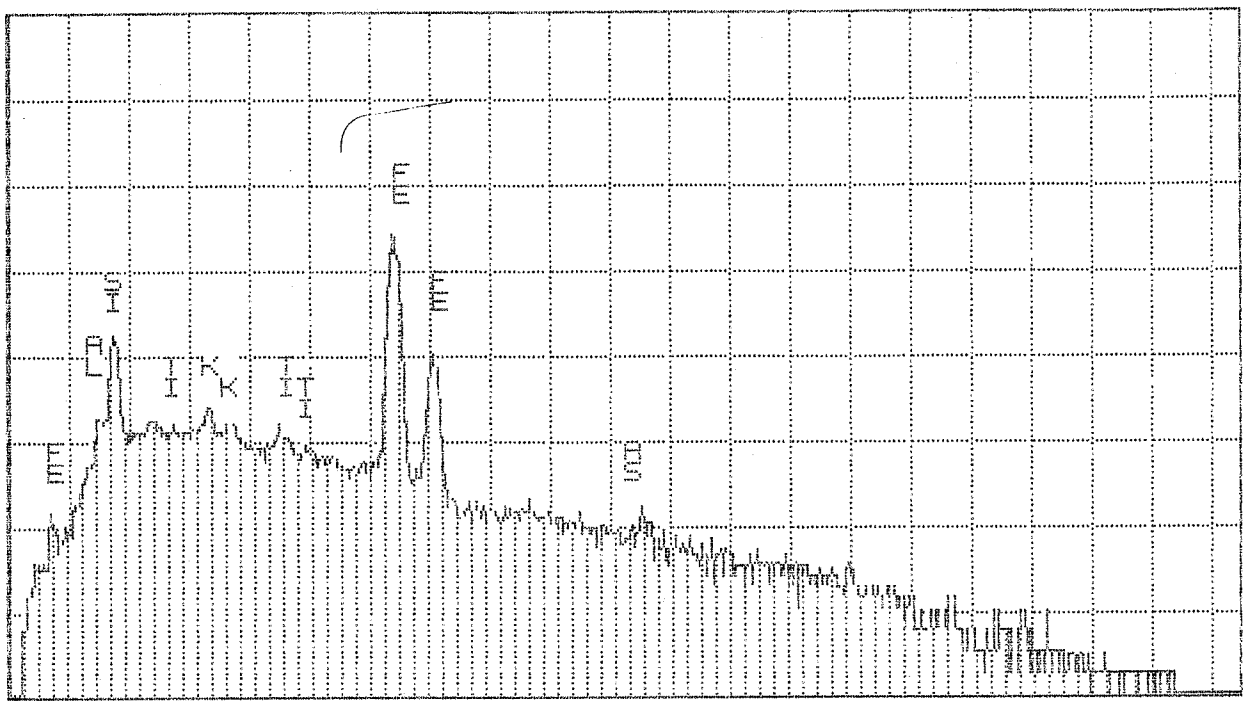

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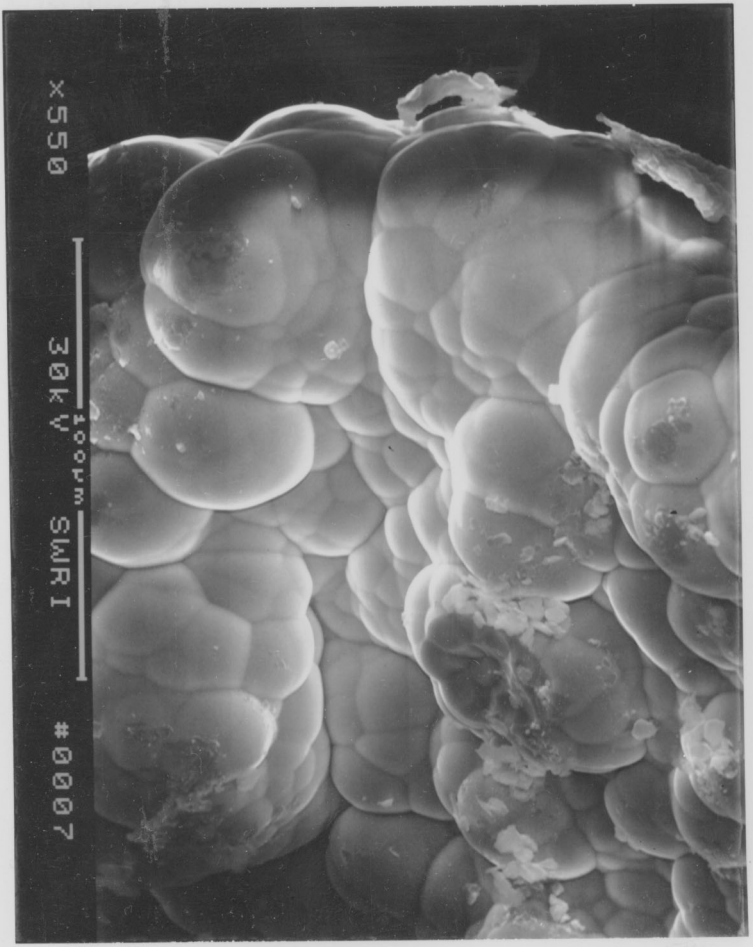

NOPI Fe_2O_3

56312

hematite

FX85 1A/80 MAIN

Series II Southwest Research Institute THU 18-JUN-92 14:58
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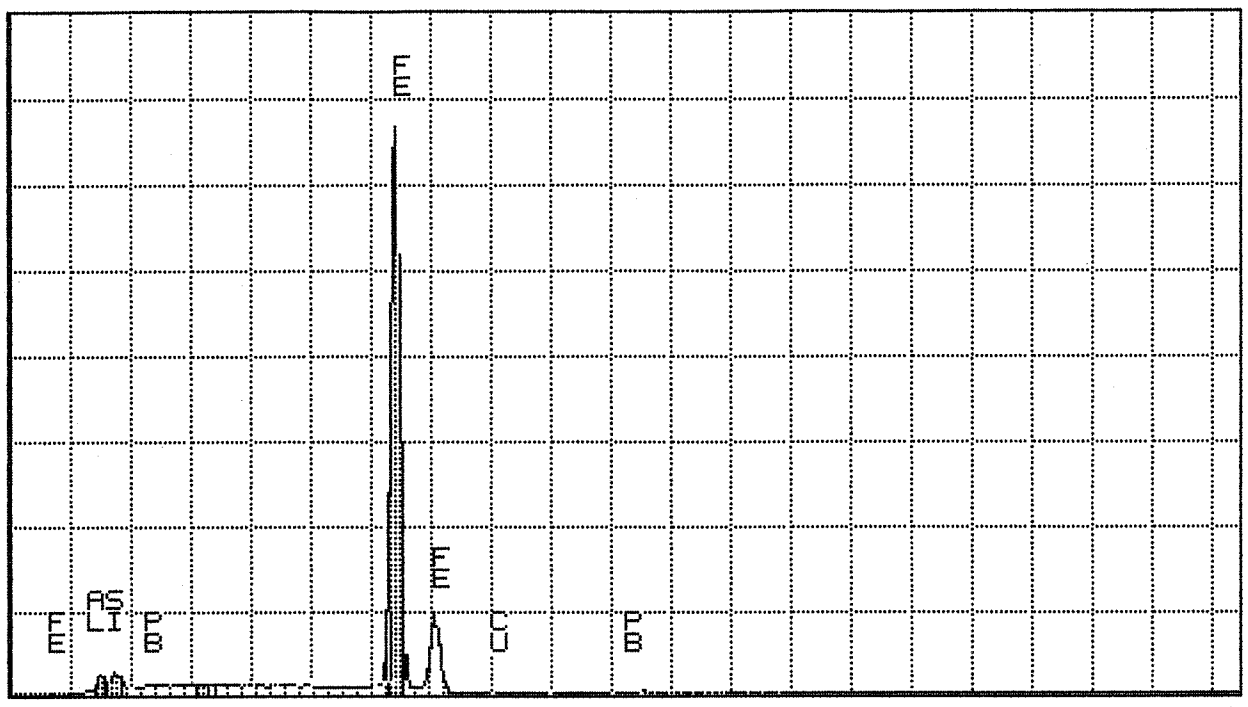

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208 NOPI Fe2O3 20KV, WD=20

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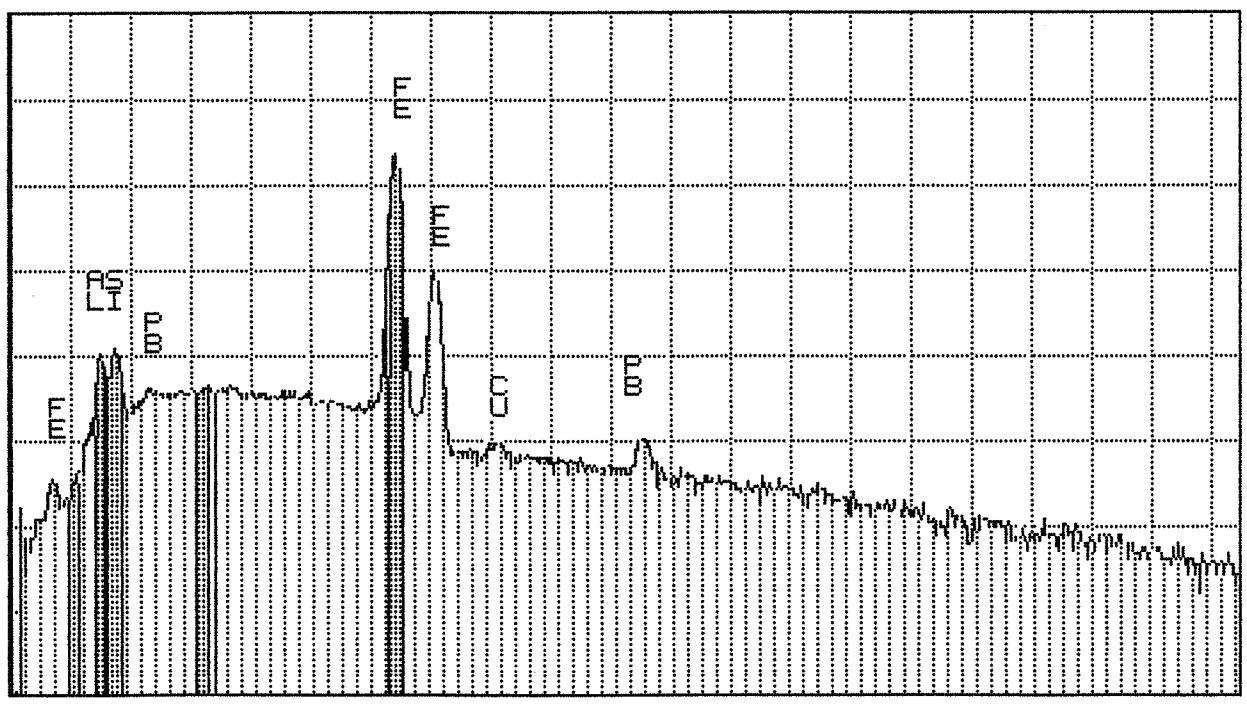

0.000 VFS = LOG 1 20.480
208 NOPI Fe2O3 20KV, WD=20

Peña Blanca SEM Analysis 10/1/92

The data and photos can be found in the binder title: **CNWRA SEM and EDS Analyses of Uranium Ore Samples, Peña Blanca, Chihuahua, Mexico.**

Sample-: NOPI-ECP-26.85/11.65-TS5

This hand sample is perhaps the best example of beta-uranophane crystals covered by some sort of black opaque coating. In an attempt to identify the composition and mineralogy of the coating, a 1cm by 2 cm fissure of black-coated beta-uranophane crystals were removed by gentle scraping. Additional material that appeared to be some sort of iron-mineral was removed from this sample for SEM analysis. A portion of the black-coated prismatic sword crystals were subjected to XRD analysis and were confirmed to be beta-uranophane (024/164).

Photo 2 - Beta-uranophane crystals covered by seemingly amorphous coating. The coating has variable thickness and preserves the underlying crystal faces of the beta-uranophane. Photo is at 200 X.

Photo 3 - A beta-uranophane crystal from photo #2 magnified to 500 X. It is covered by a seemingly amorphous coating. The coating has variable thickness and preserves the underlying crystal faces of the beta-uranophane. An EDS pattern (26.85/11.65-SEM1) indicates that the coating is **not opal**, but rather some sort of manganese coating. The coating contains subequal amounts of cobalt, lead, iron, and lesser amounts of zinc. The U, Ca, and Si peaks probably reflect the penetration into the underlying beta-uranophane ($Ca(UO_2)_2Si_2O_7 \bullet 6H_2O$).

Photo 4 - A beta-uranophane crystal from **NOPI-ECP-26.85/11.65-TS5** magnified to 1000 X. It is covered by a seemingly amorphous, but somewhat transparent, coating . The coating has variable thickness, <10 microns, and preserves the underlying crystal faces of the beta-uranophane. An EDS pattern (26.85/11.65-SEM1a) indicates that the coating is not opal, but rather, some sort of manganese coating, and that it is thinner than the previous crystals, as indicated by the much higher intensities of Ca, Si, and U (uranophane). The coating contains subequal amounts of manganese, cobalt, lead, iron, and lesser amounts of zinc.

Photo 6 - A piece of Fe-stained mineral (reflected light, binocular microscopy) that has been magnified by 150 X. The underlying material appears to be clay-like. An EDS pattern was obtained (26.85/11.65-SEM2) and indicated that the coating was Fe-rich. It also indicated that **Ce**, Zr, Ti Pb and Zn were high in the coating. The finding of high Ce is especially important, indicating the sorptive capacity of Fe coatings for rare-earth elements.

Photo 7 - A beta-uranophane crystal from **NOPI-ECP-26.85/11.65-TS5** magnified to 1000 X. It is covered by a seemingly amorphous, but somewhat transparent, coating . An EDS pattern (26.85/11.65-SEM 3) indicates that the coating is not opal, but rather, some sort of manganese

coating. The coating contains subequal amounts of manganese, cobalt, lead, iron, and lesser amounts of zinc.

Photo 8 - An optically clear piece of opal from **NOPI-ECP-37-SEP3** that has been magnified by 150X. An EDS pattern was obtained (NOPI-ECP-37-SEP3) indicated only minor amounts of U, and just Si.

Photo 9 - An optically clear piece of opal from **NOPI-ECP-37-SEP3** that has been magnified by 500X. An EDS pattern was obtained (NOPI-ECP-37-SEP3-1a) and indicated that the material to the left in the photo is a K-uranyl silicate. The opal coating is the conchoidally fractured material to the right. The long prismatic crystals underlying the opal are probably weeksite (see EDS pattern NOPI-ECP-37-SEP3-1B).

Photo 10 - A piece of black porous material that fills several vugs and depressions in **NOPI-ECP-37-SEP1** that has been magnified by 500X. An EDS pattern was obtained (NOPI-ECP-37-SEP1) and indicates that the material is an Fe bearing mineral or coating on an aluminosilicate (kaolinite). There is enough material to complete XRD analysis on this material to confirm its composition.

Photo 11 - A piece of branching beta-uranophane coated with the black material that has been magnified by 200X from sample **NOPI-ECP-26.85/ 11.65-TS5**. An EDS pattern (26.85/11.65-SEM 4) indicates that the coating is not opal, but rather, some sort of manganese coating. The coating contains subequal amounts of manganese, cobalt, lead, and lesser amounts of zinc. The underlying beta-uranophane is seen by the U,Ca, and Si peaks.

Photo 12 - A piece of iron-stained material that fills several vugs and depressions in **NOPI-ECP-19.0/7.8-SEP1** that has been magnified by 500X. An EDS pattern was obtained (NOPI-ECP-19.0/7.8-SEP1) indicated that the material is an Fe bearing mineral or coating on an aluminosilicate (kaolinite). There is enough material to complete XRD analysis on this material to confirm its composition. Note that Fe>> Al>Si.

Photo 13 - A piece of iron-stained material that fills several vugs and depressions in **NOPI-ECP-19.0/7.8-SEP1** that has been magnified by 500X. An EDS pattern was obtained (NOPI-ECP-19.0/7.8-SEP1-A) indicated that the material is an Fe bearing mineral or Fe coating on an aluminosilicate (kaolinite). There is enough material to complete XRD analysis on this material to confirm its composition. Note that Si>> Fe>Al.

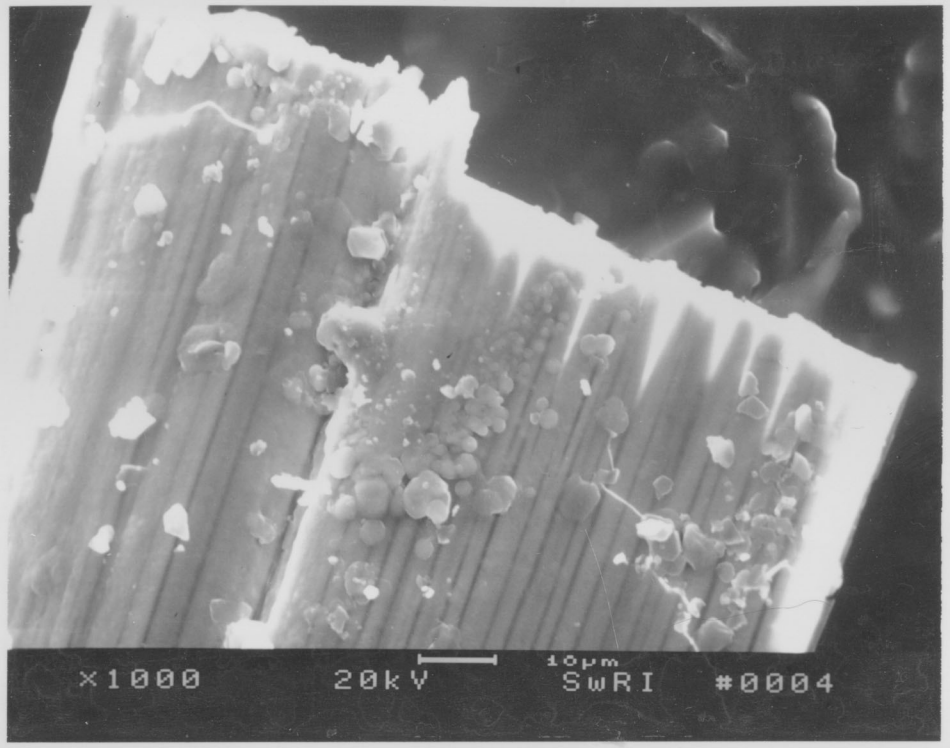

Photo 4 58392

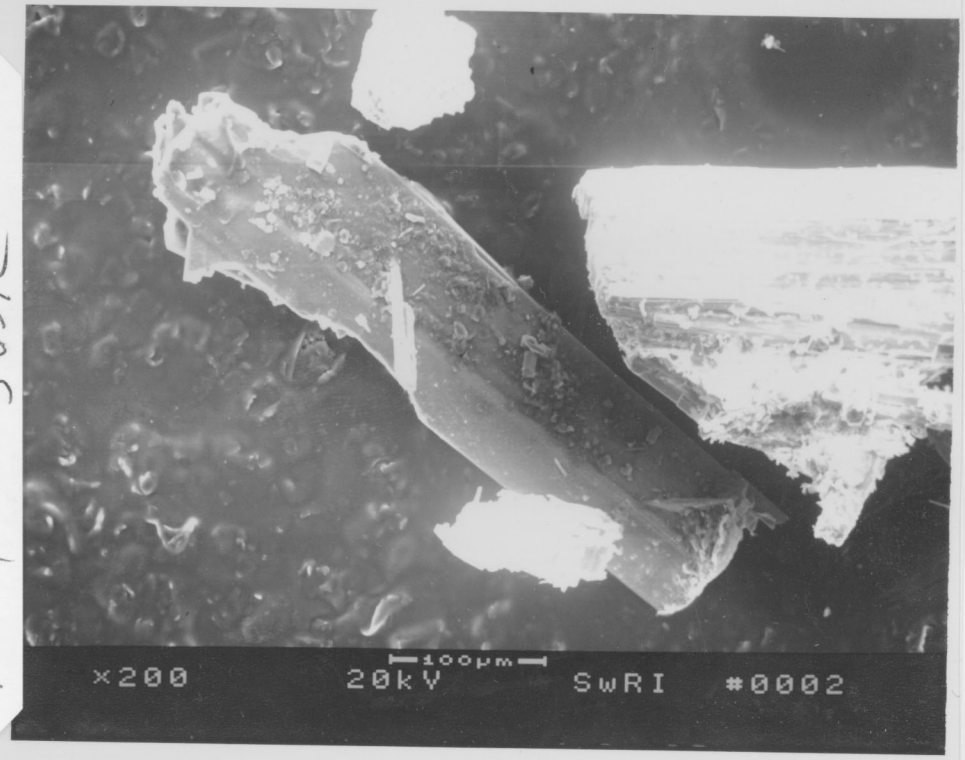

Photo 2 58390

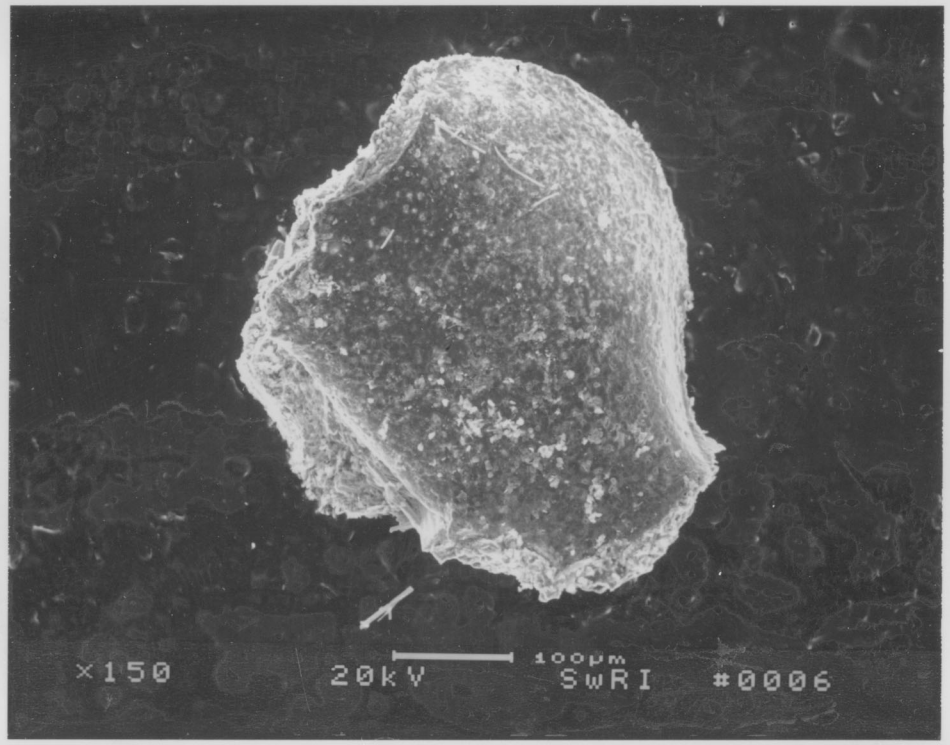

Photo 6 58393

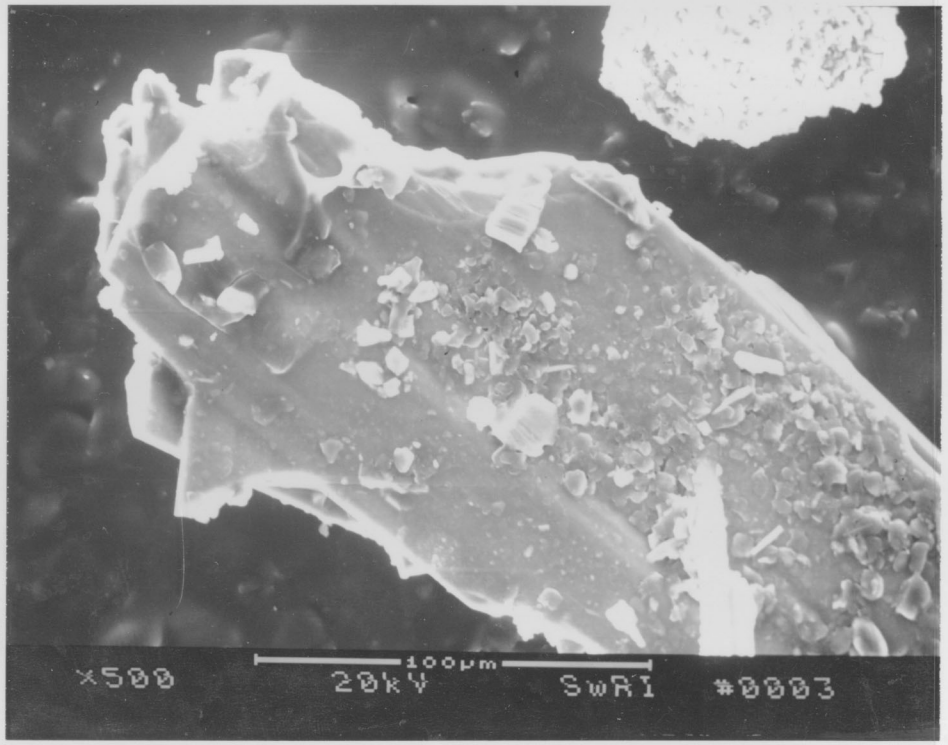

Photo 3 58391

Series II Southwest Research Institute THU 01-OCT-92 16:42
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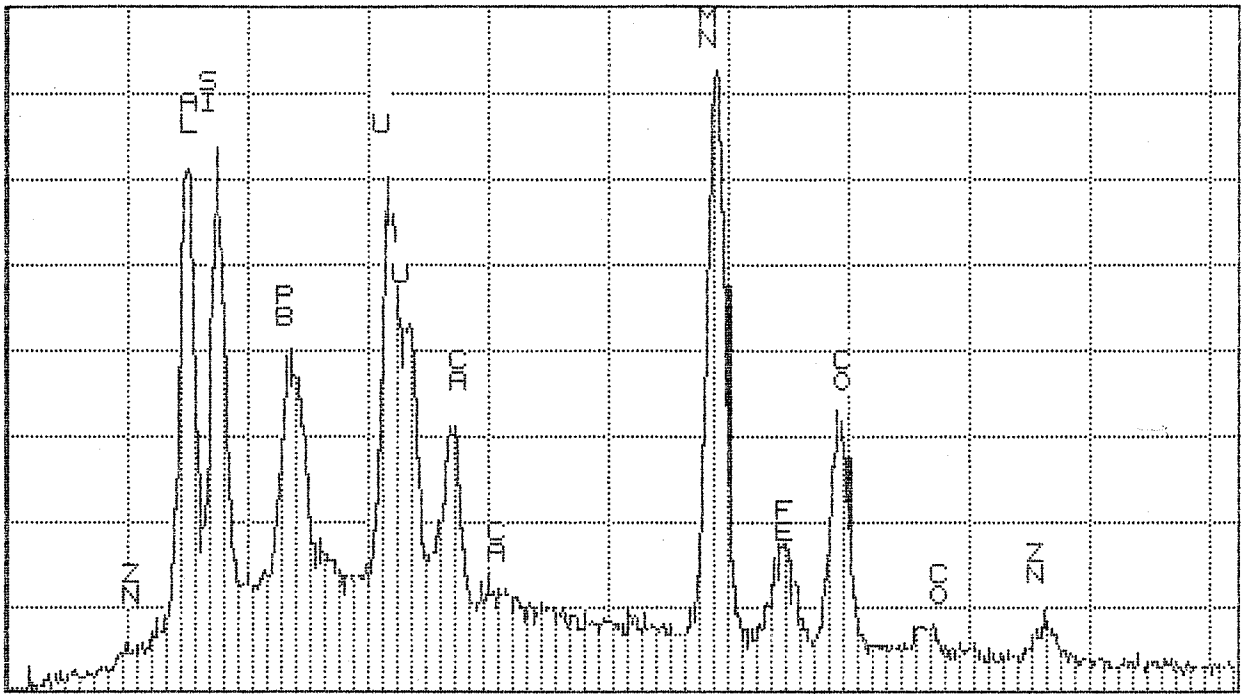

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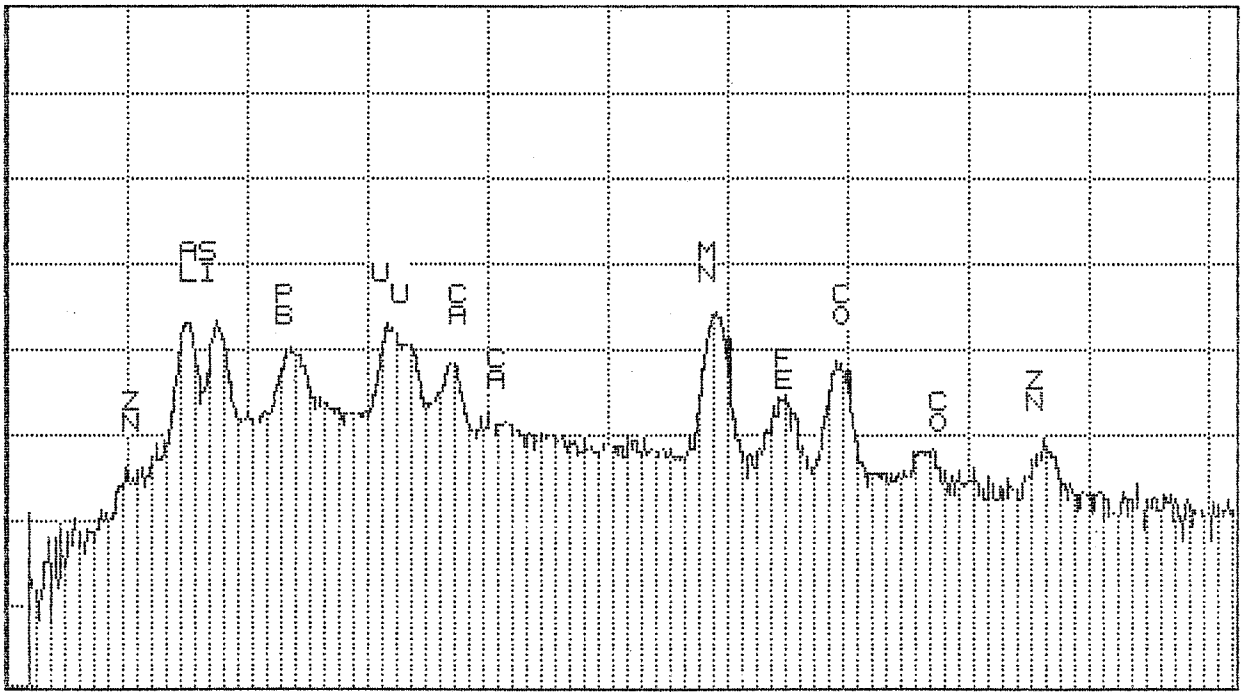

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225 26.85/11.65-SEM 1 20KV WD=31

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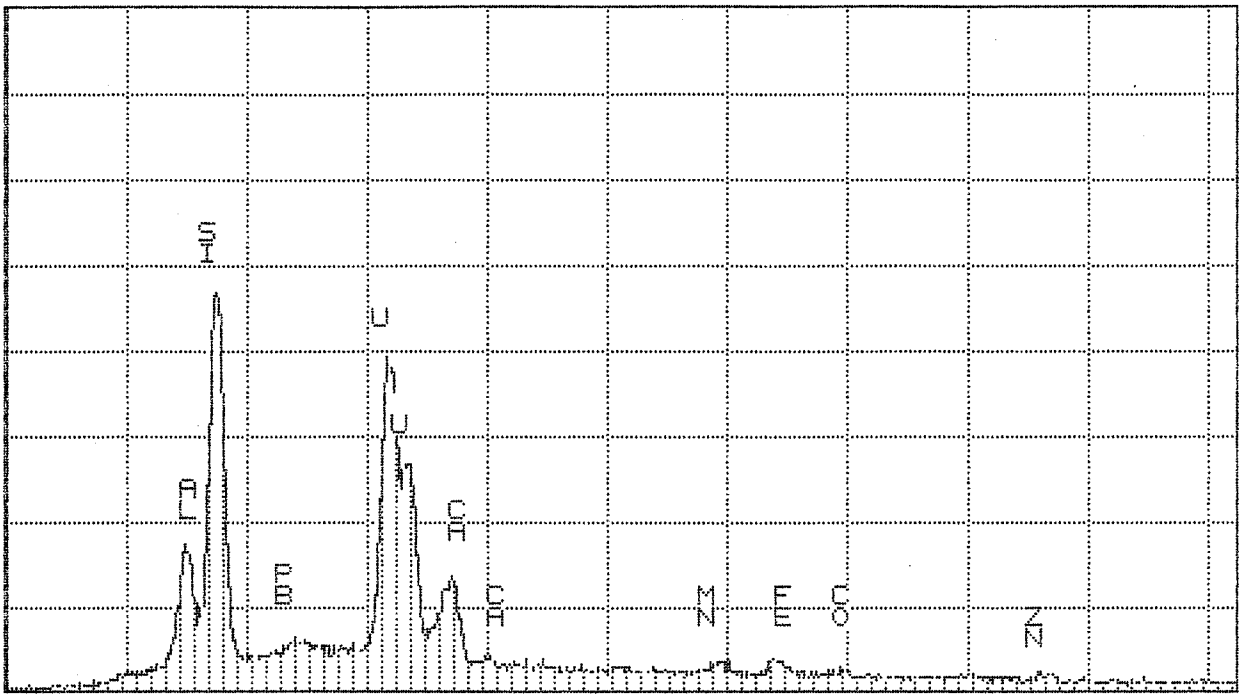

0.000 VFS = 1024 10.240
113 26.85/11.65-SEM 1a 20KV WD=31

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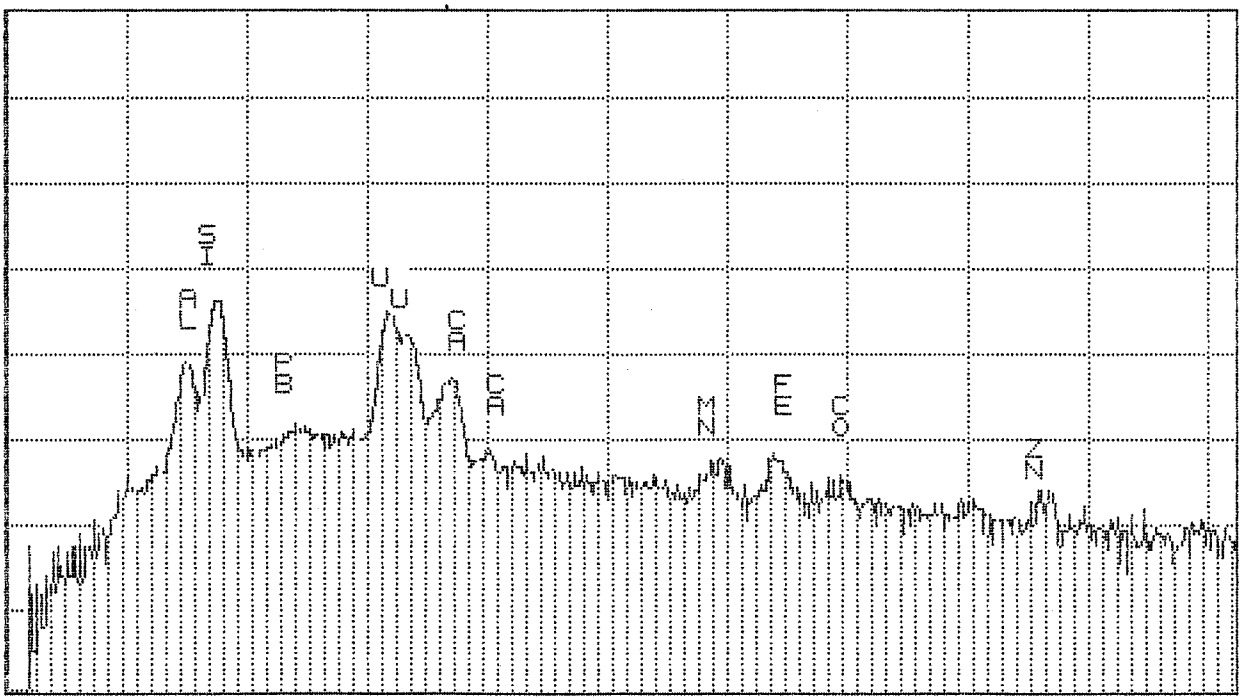

0.000 VFS = LOG 1 10.240
113 26.85/11.65-SEM 1a 20KV WD=31

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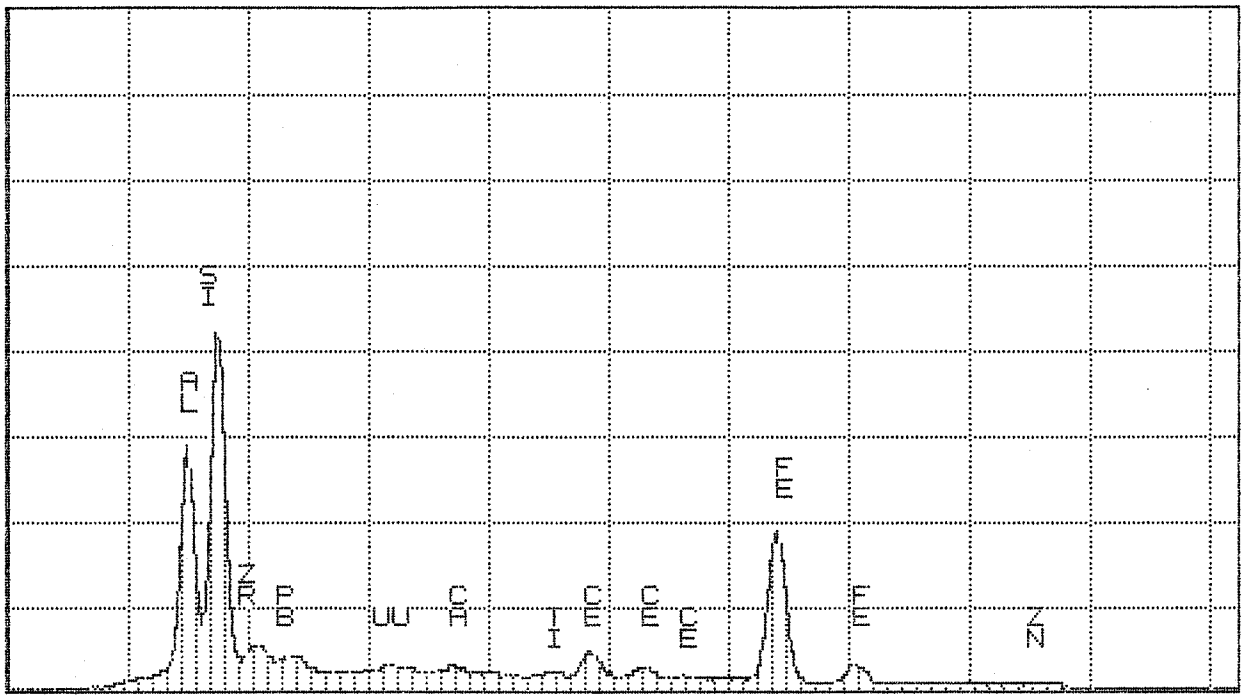

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474 26.85/11.65-SEM 2 20KV WD=27

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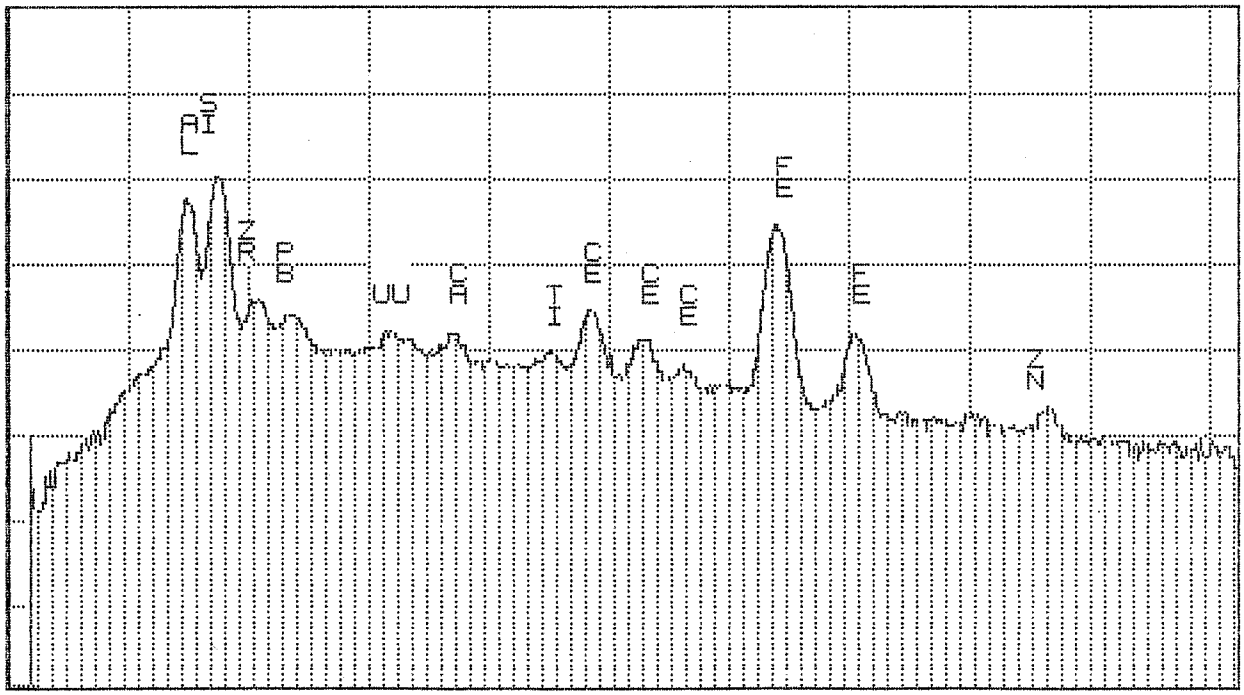

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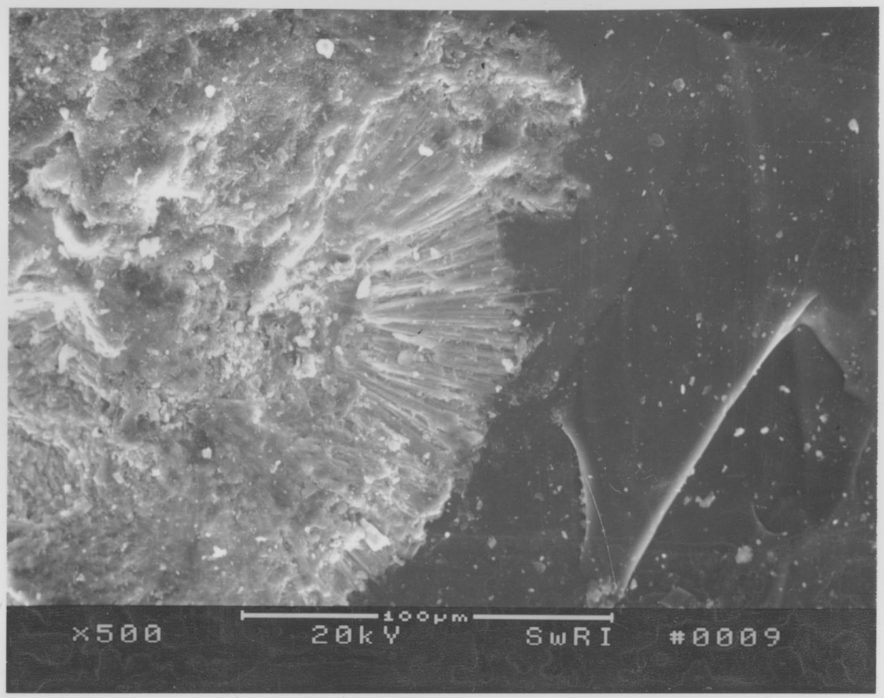

photo 9 58396

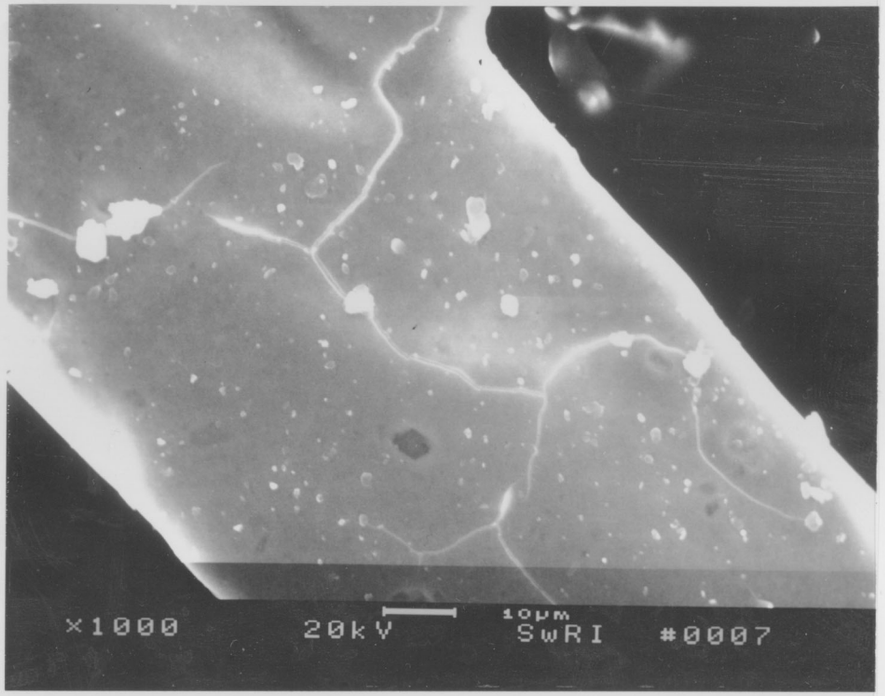

Photo 7 58394

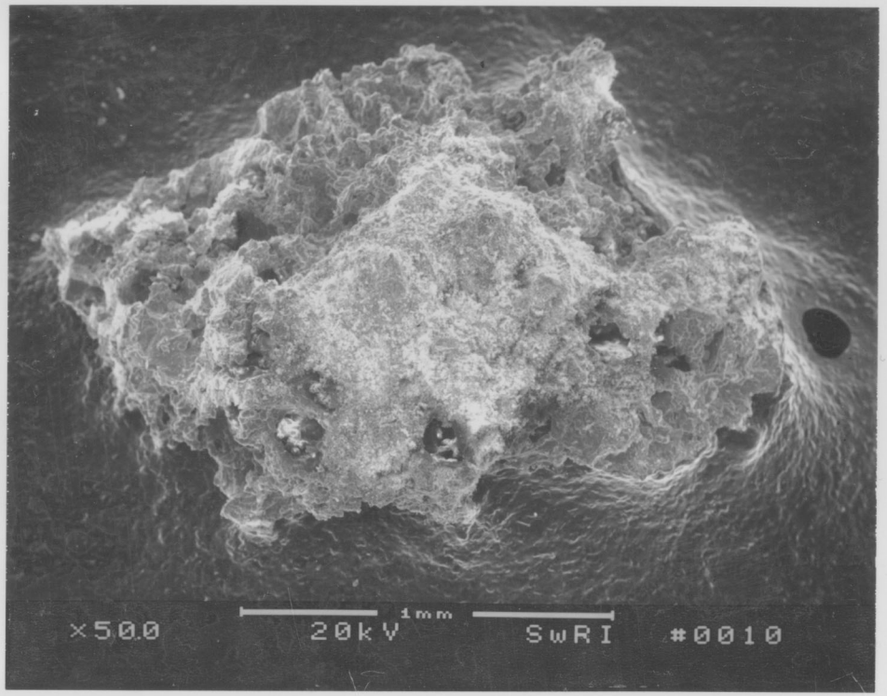

photo 10 58397

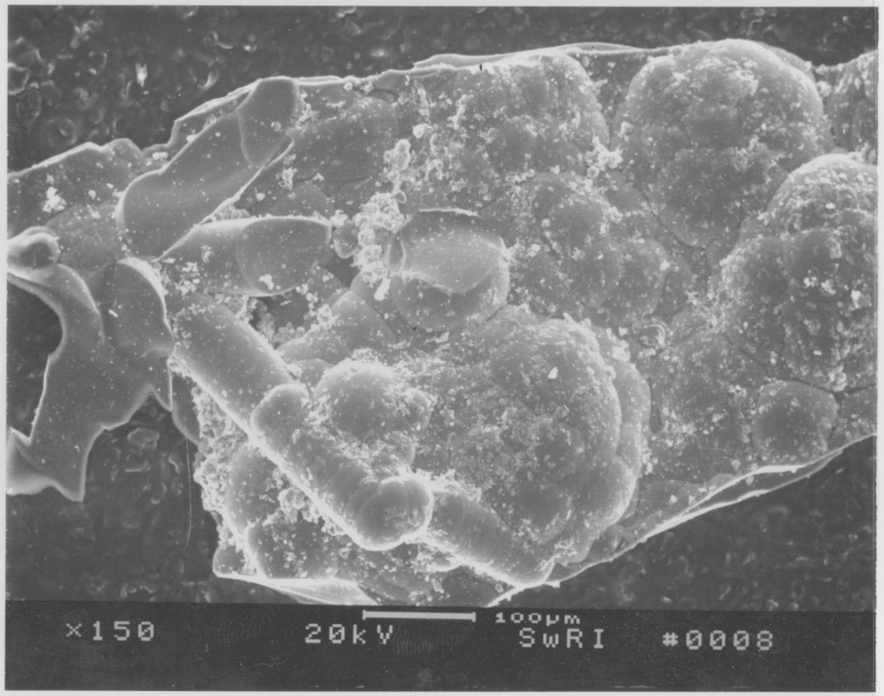

photo 8 58395

Series II Southwest Research Institute THU 01-OCT-92 16:52
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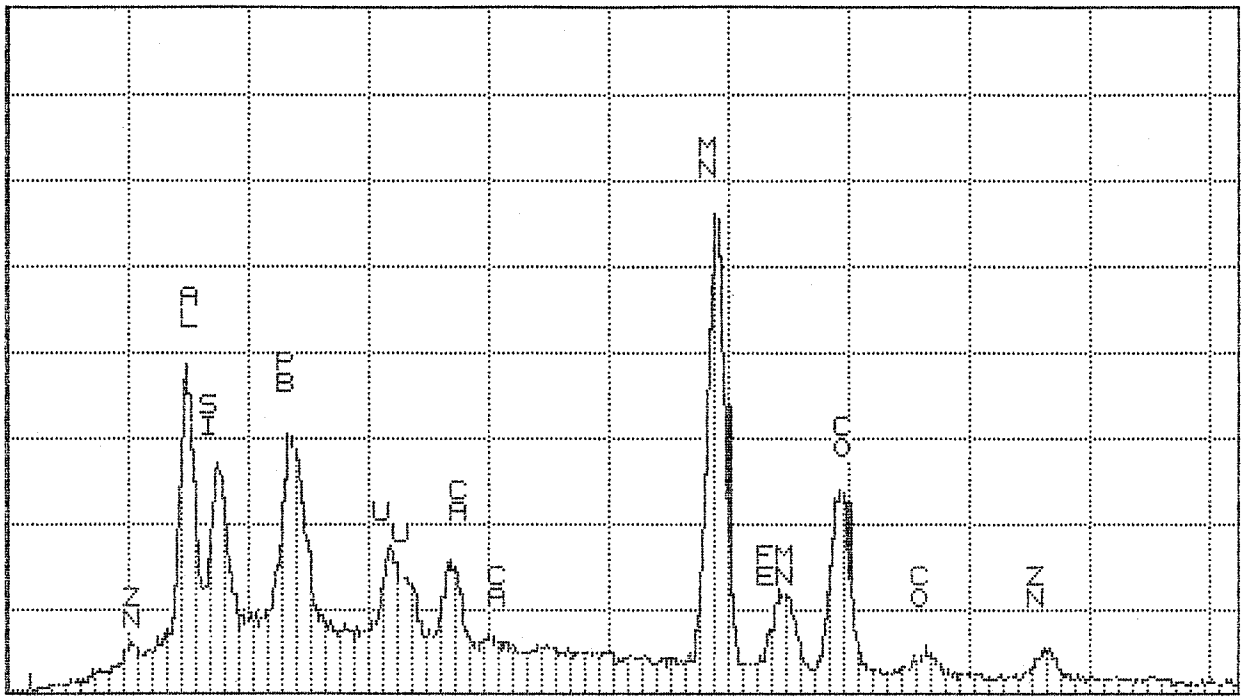
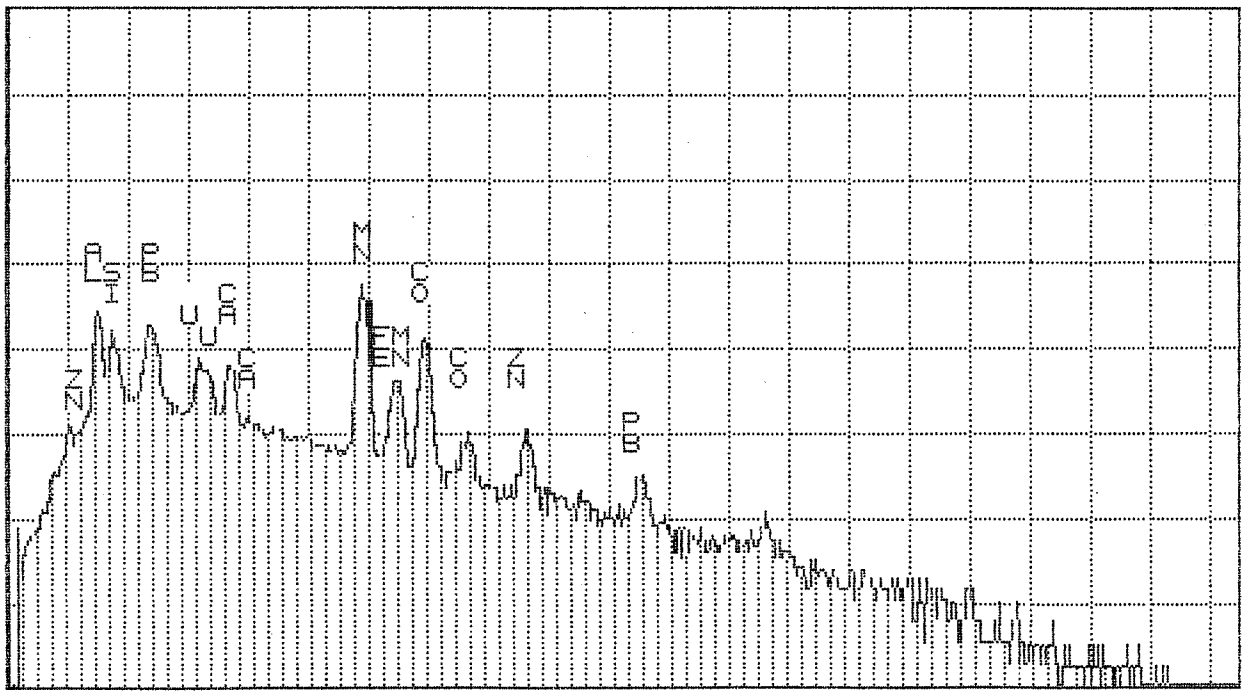


0.000 VFS = 2048 10.240
207 ~~26.85/11.65 SEM 3~~ 20KV WD=31

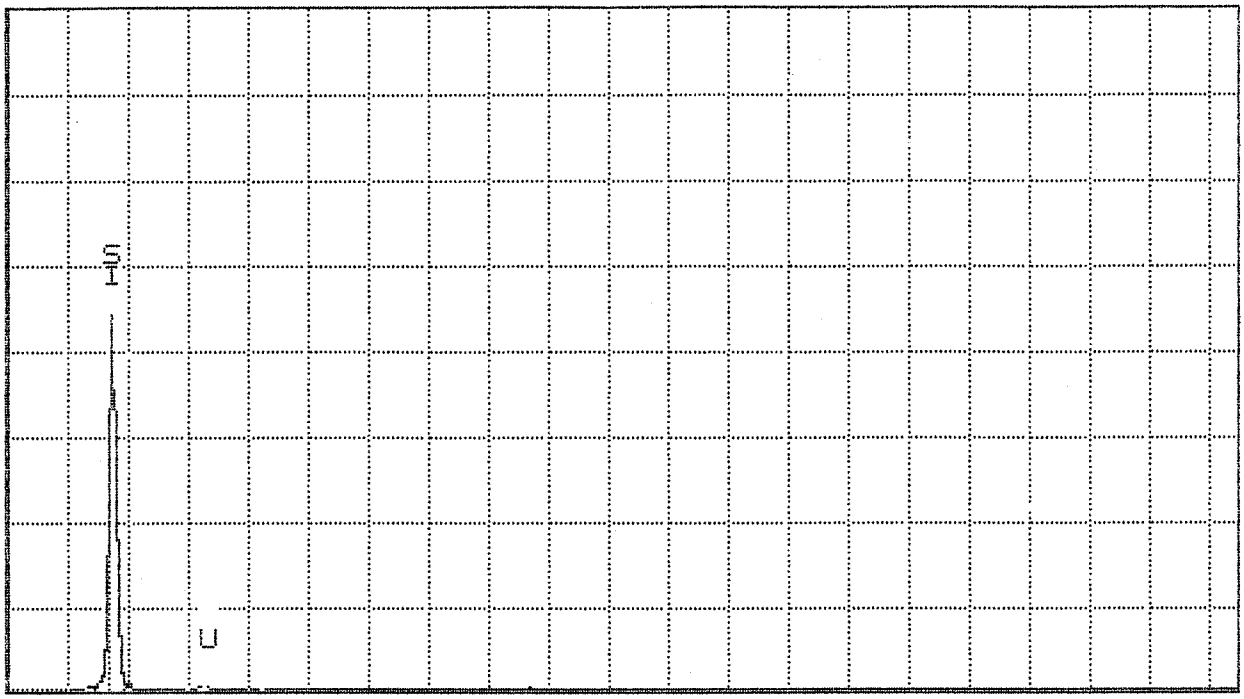
BWL 10/2/92 okas is!

Series II Southwest Research Institute THU 01-OCT-92 16:57
Cursor: 0.000keV = 0



0.000 VFS = LOG 1 20.480
207 26.85/11.65-SEM 3 20KV WD=31

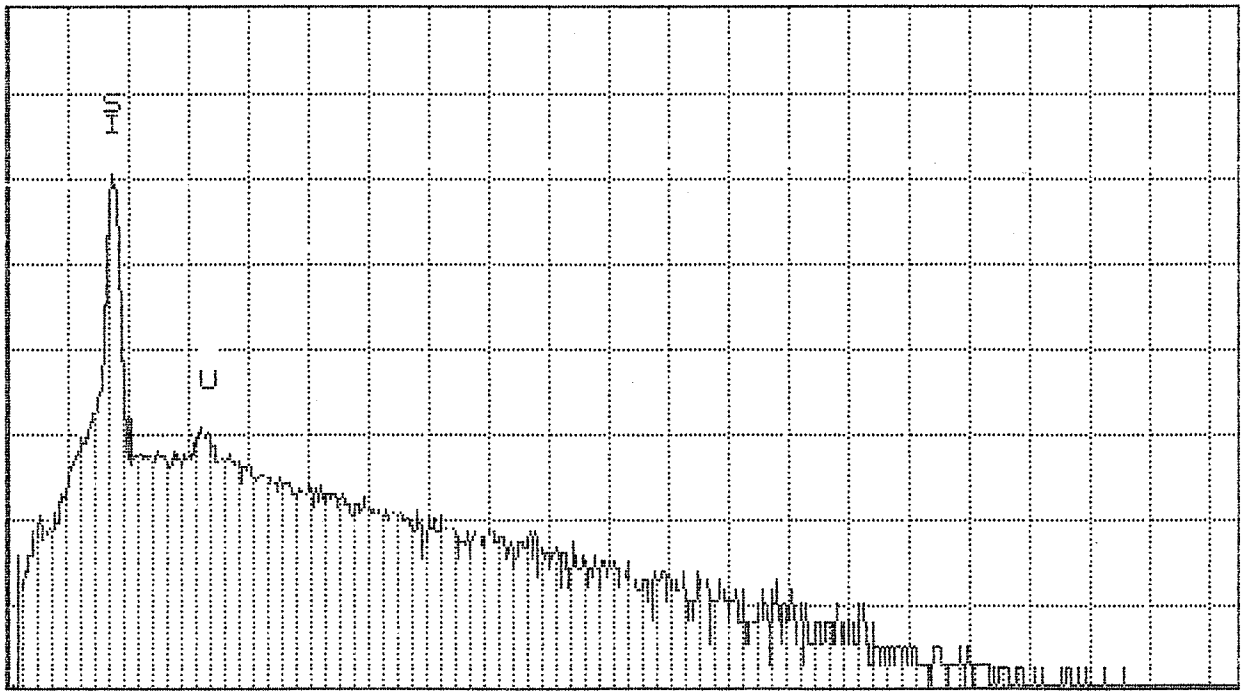
Series II Southwest Research Institute THU 01-OCT-92 16:58
Cursor: 0.000keV = 0



0.000 VFS = 8192 20.480

113 BWL 10/2/92 ~~26.85/11.65-SEM 6~~ 20KV WD=29
NOP1-ECP-37-SEP3

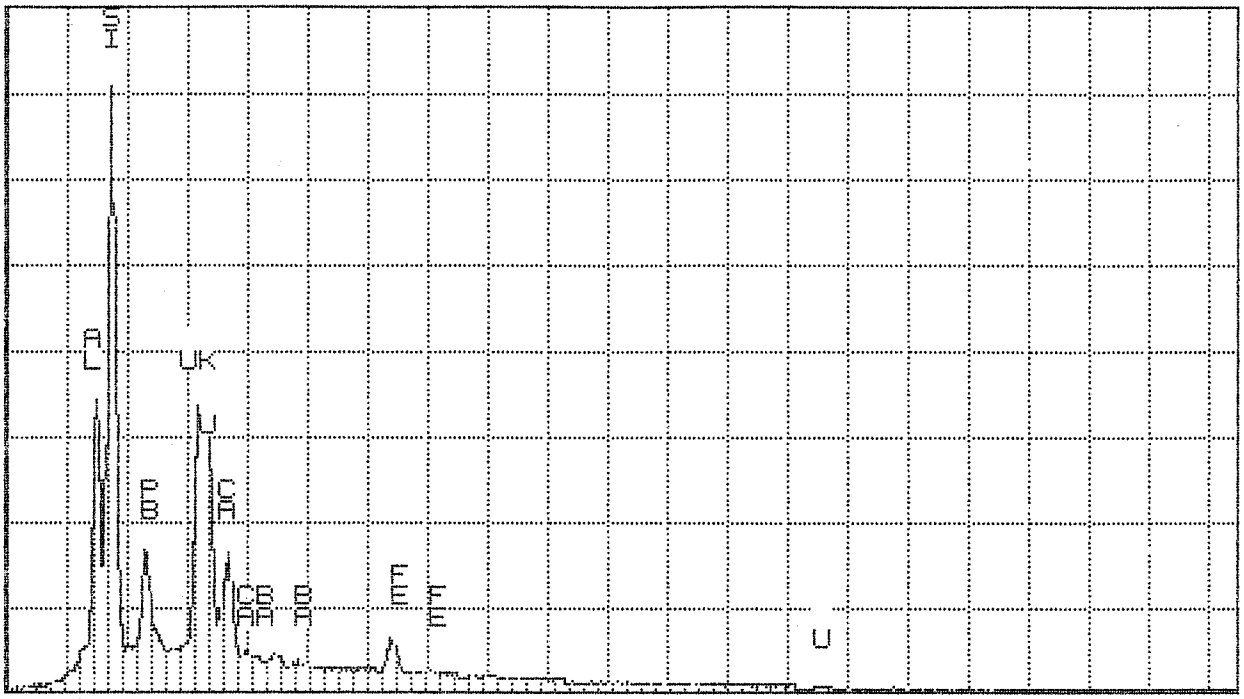
Series II Southwest Research Institute THU 01-OCT-92 16:59
Cursor: 0.000keV = 0



0.000 VFS = LOG 1 20.480

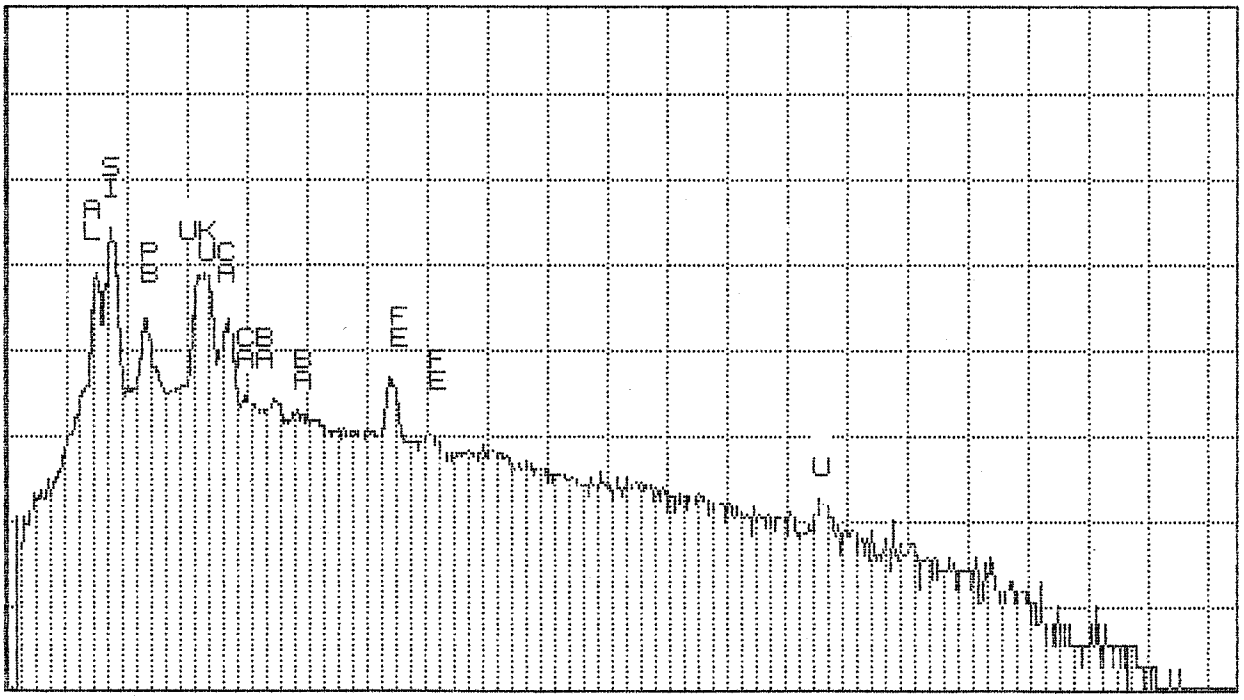
113 BWL 10/2/92 ~~26.85/11.65-SEM 6~~ 20KV WD=29
NOP1-ECP-37-SEP3

Series II Southwest Research Institute THU 01-OCT-92 17:00
Cursor: 0.000keV = 0



0.000 10/2/92 BWL VFS = 2048 20.480
184 ~~26.05/11.65 SEM 6a~~ 20KV WD=26
NOPI-ECP-37-SEP3-1a

Series II Southwest Research Institute THU 01-OCT-92 17:02
Cursor: 0.000keV = 0



0.000 10/2/92 BWL VFS = LOG 1 20.480
184 ~~26.05/11.65 SEM 6a~~ 20KV WD=26
NOPI-ECP-37-SEP3-1a

Series II Southwest Research Institute THU 01-OCT-92 17:03
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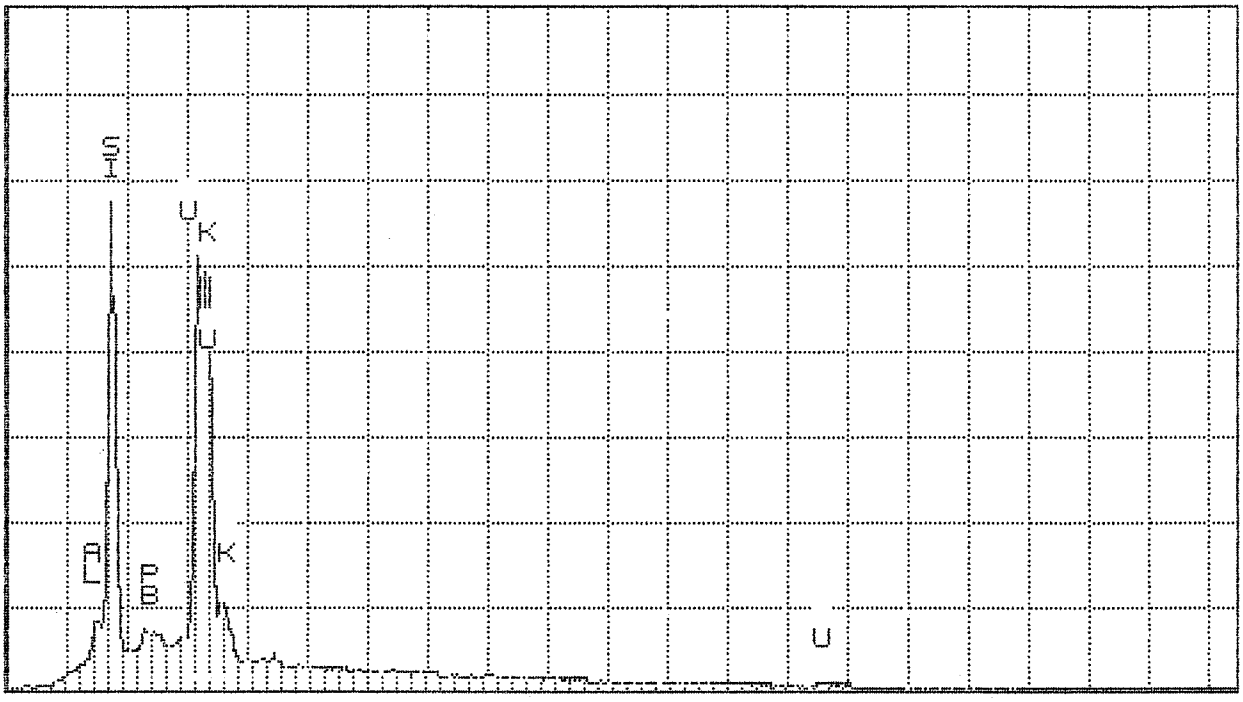

0.000 VFS = 2048 20.480
118 10/2/92 BWL ~~26.85/11.65-SEM Sb~~ 20KV WD=26
NOP1-ECP-37-SEP3-1B

Series II Southwest Research Institute THU 01-OCT-92 17:04
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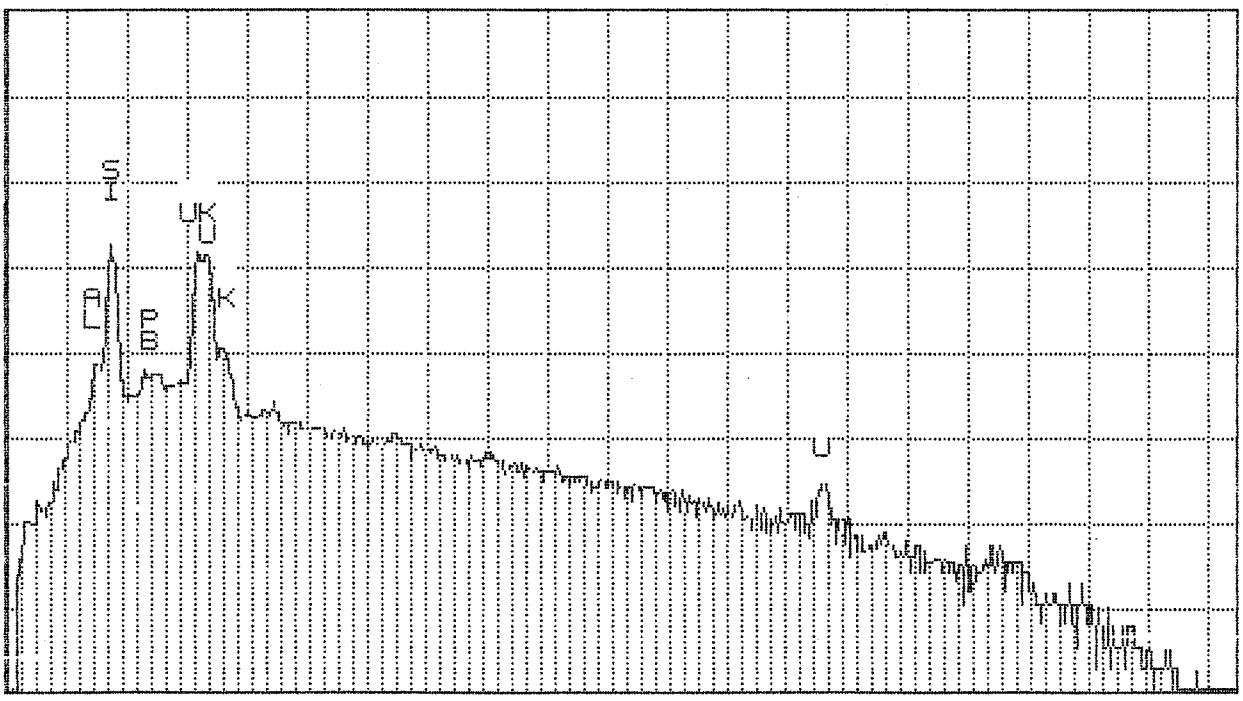
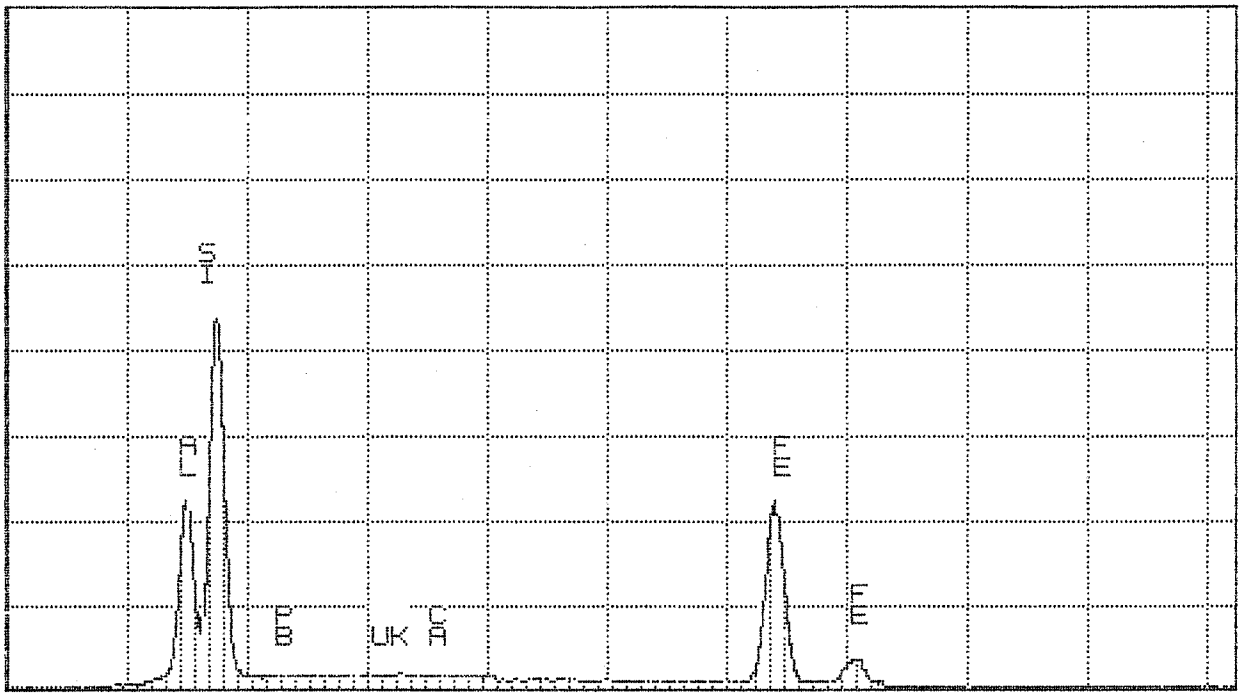


0.000 VFS = LOG 1 20.480
118 10/2/92 BWL ~~26.85/11.65-SEM Sb~~ 20KV WD=26
NOP1-ECP-37-SEP3-1B

Series II Southwest Research Institute FRI 02-OCT-92 08:44
Cursor: 0.000keV = 0



0.000 VFS = 8192 10.240
176 10/2/92 BWL ~~26 85/11 65-SEM 5~~ 20KV WD=19
NOP1-ECP-37-SEP1

Series II Southwest Research Institute FRI 02-OCT-92 08:45
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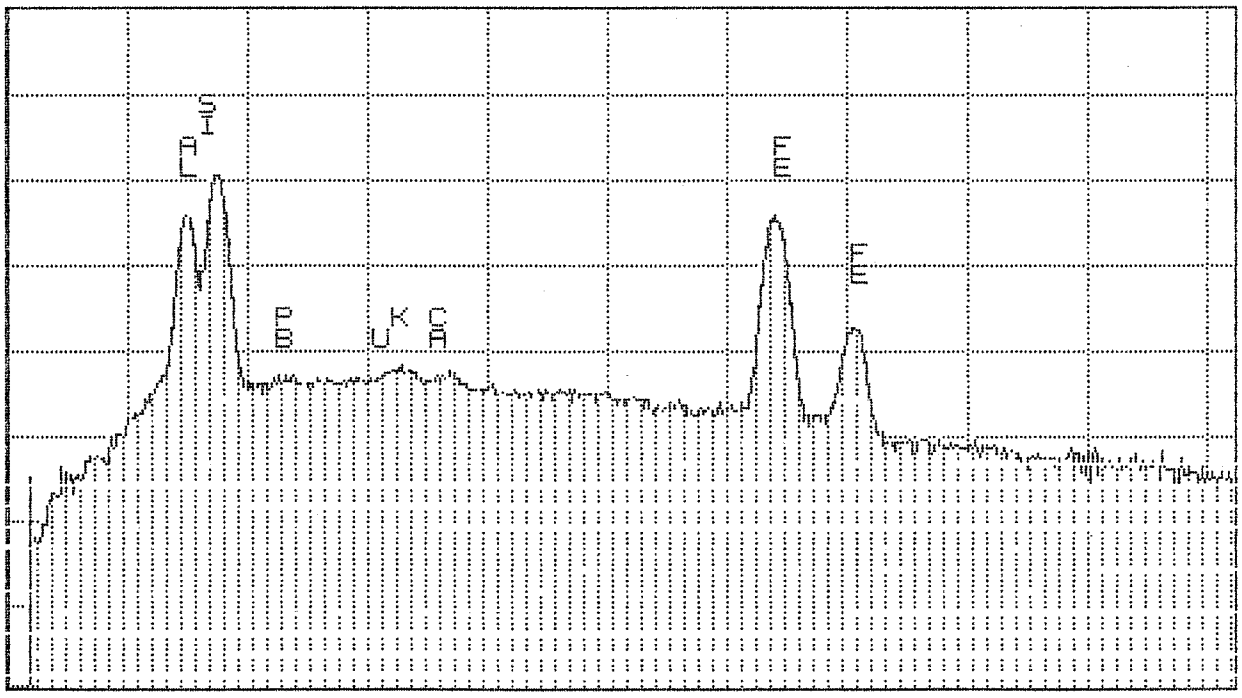

0.000 VFS = LOG 1 10.240
176 10/2/92 BWL ~~26 85/11 65-SEM 5~~ 20KV WD=19
NOP1-ECP-37-SEP1

NOPI-FCP-30 58403

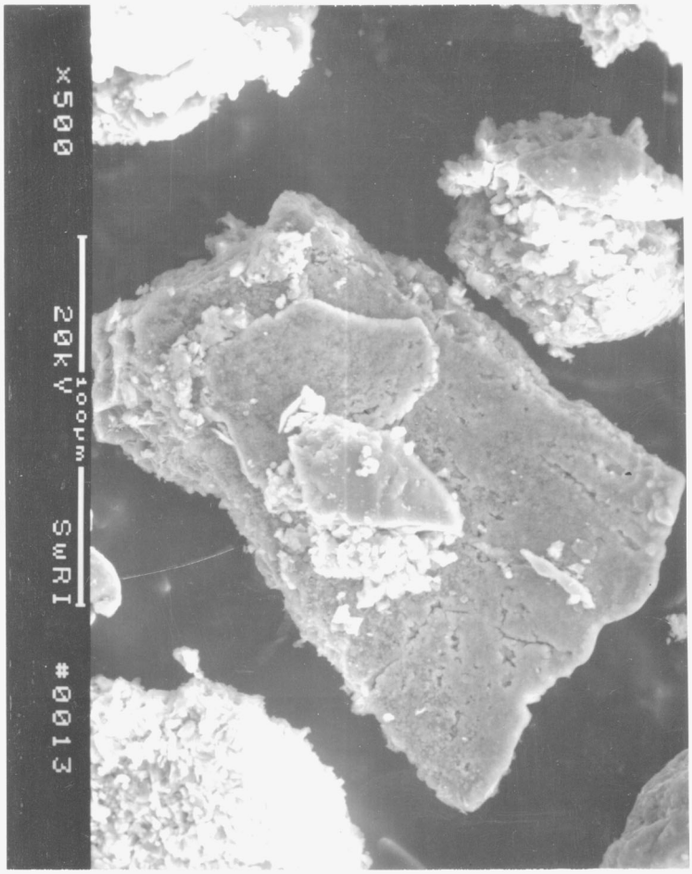

Photo 13 58400

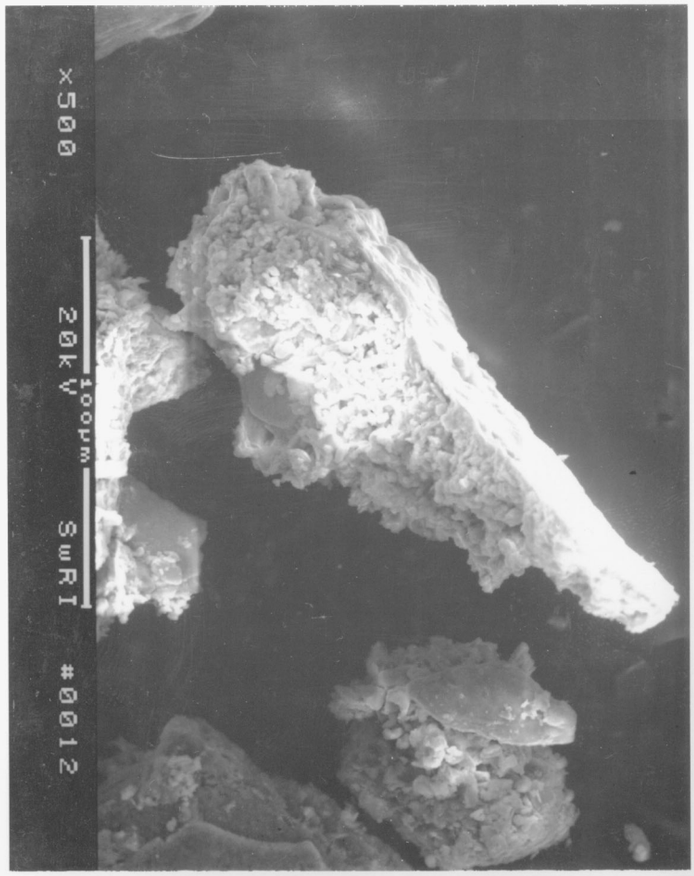

Photo 12 58399

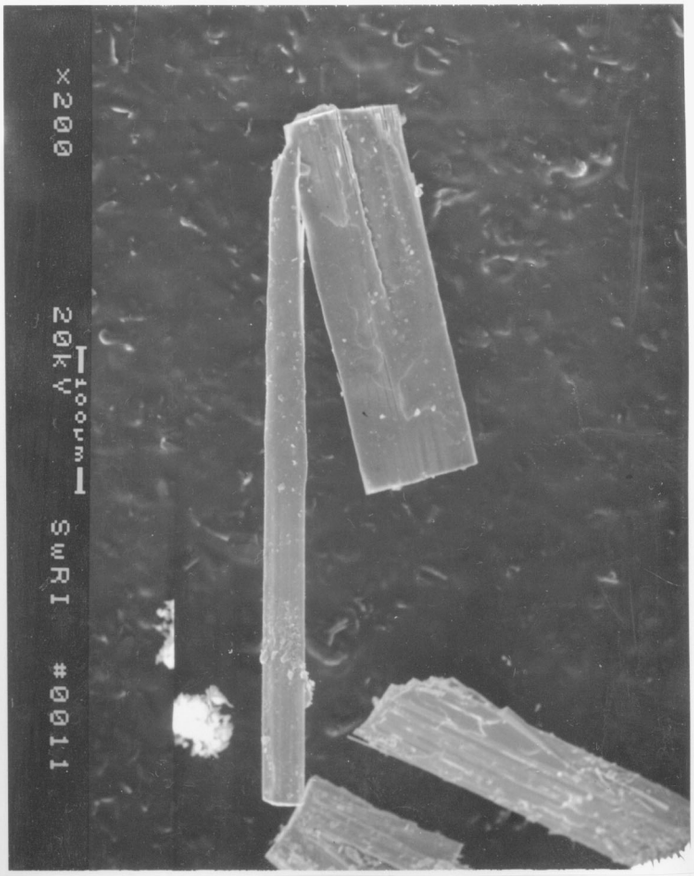

photo 11 58398

Series II Southwest Research Institute FRI 02-OCT-92 09:33
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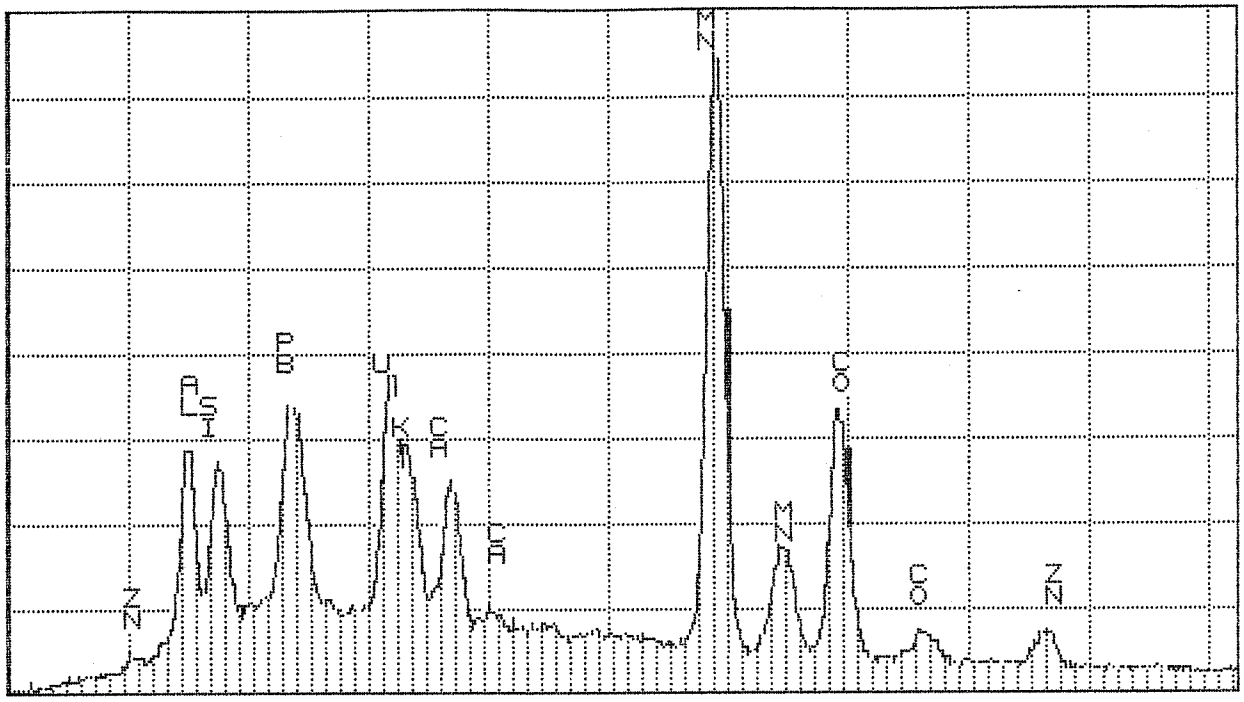
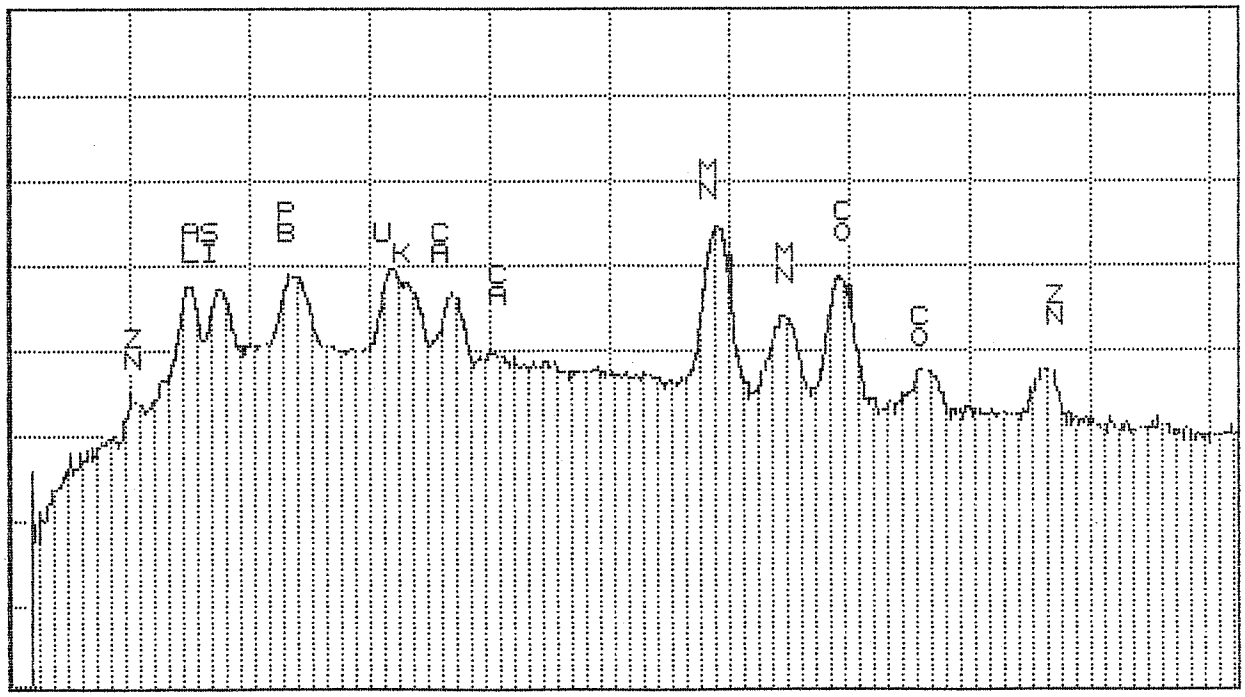


0.000 VFS = 2048 10.240
119 26.85/11.65-SEM 4 20KV WD=15

Series II Southwest Research Institute FRI 02-OCT-92 09:34
Cursor: 0.000keV = 0



0.000 VFS = LOG 1 10.240
119 26.85/11.65-SEM 4 20KV WD=15

Series II Southwest Research Institute FRI 02-OCT-92 09:05
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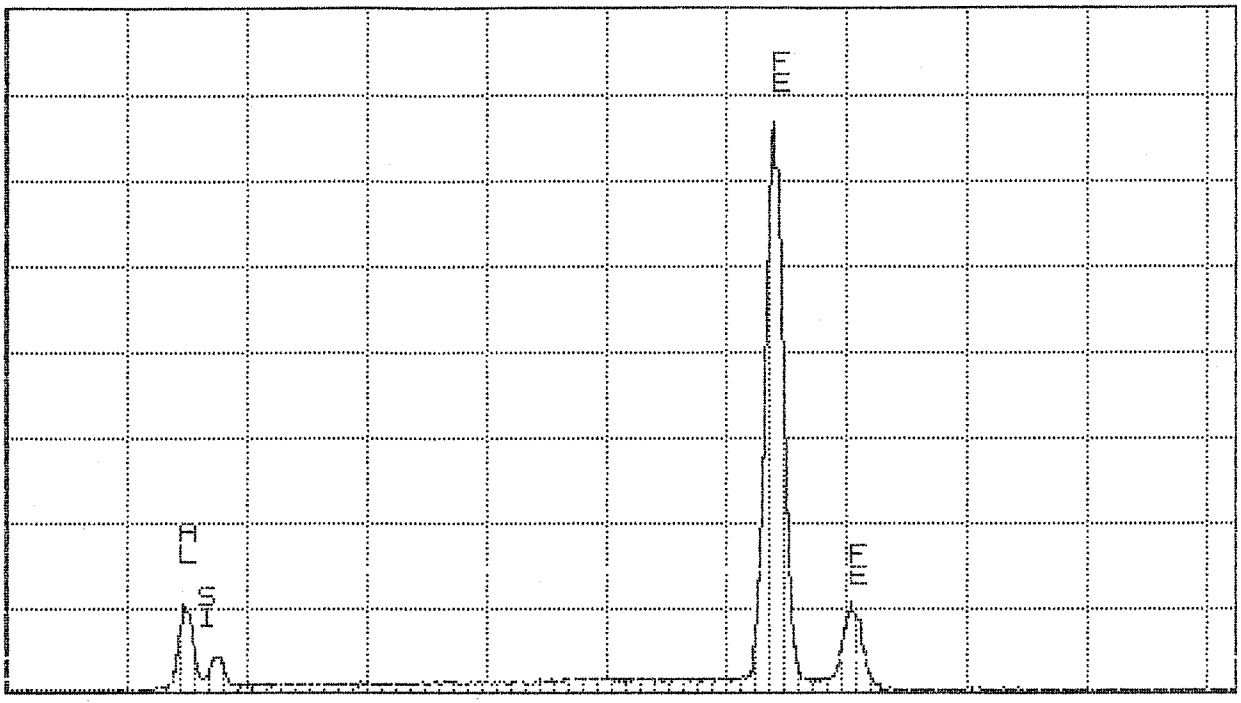
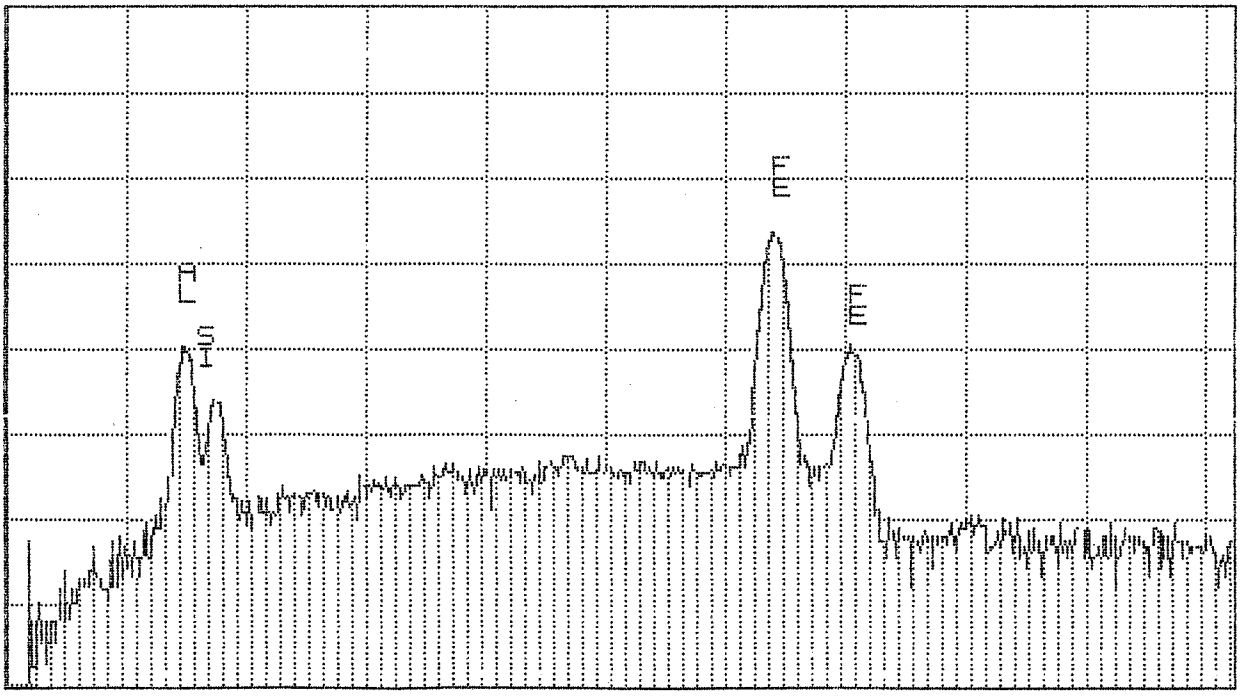


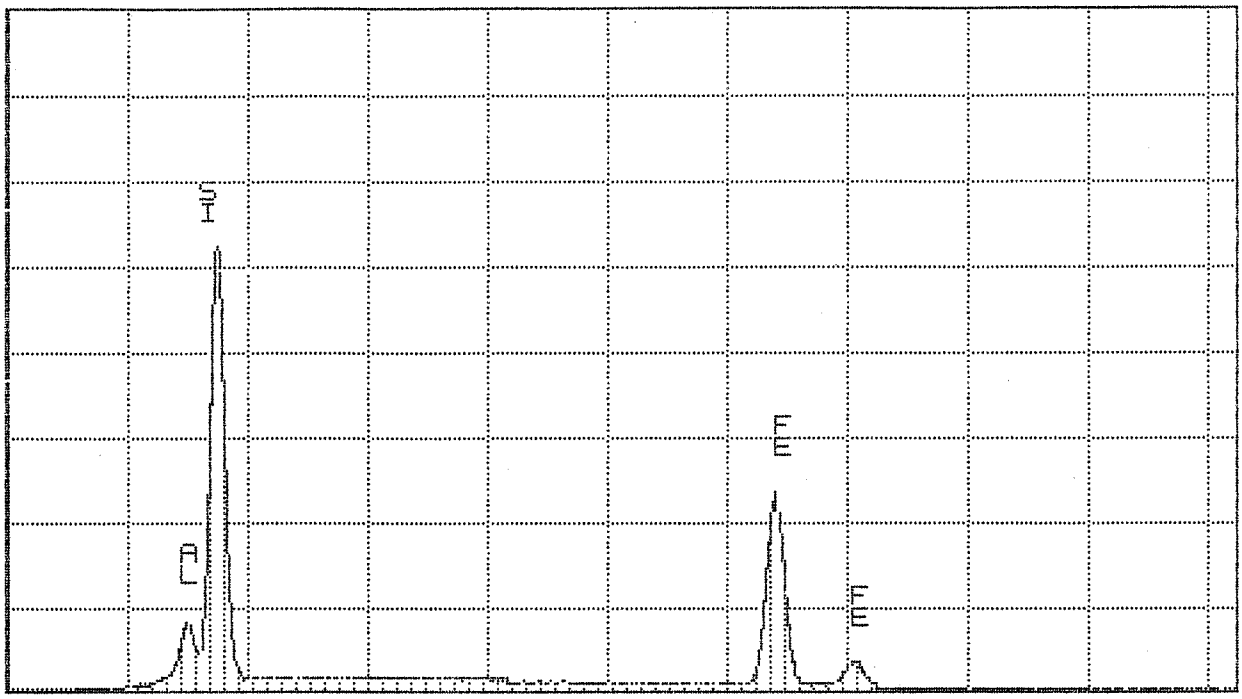
0.000 10/2/92 BWL VFS = 2048 10.240
92 ~~26.85/11.65-SEM 8~~ 20KV WD-24
NOP1-ECP-19.0/7.8-SEP1

Series II Southwest Research Institute FRI 02-OCT-92 09:07
Cursor: 0.000KeV = 0



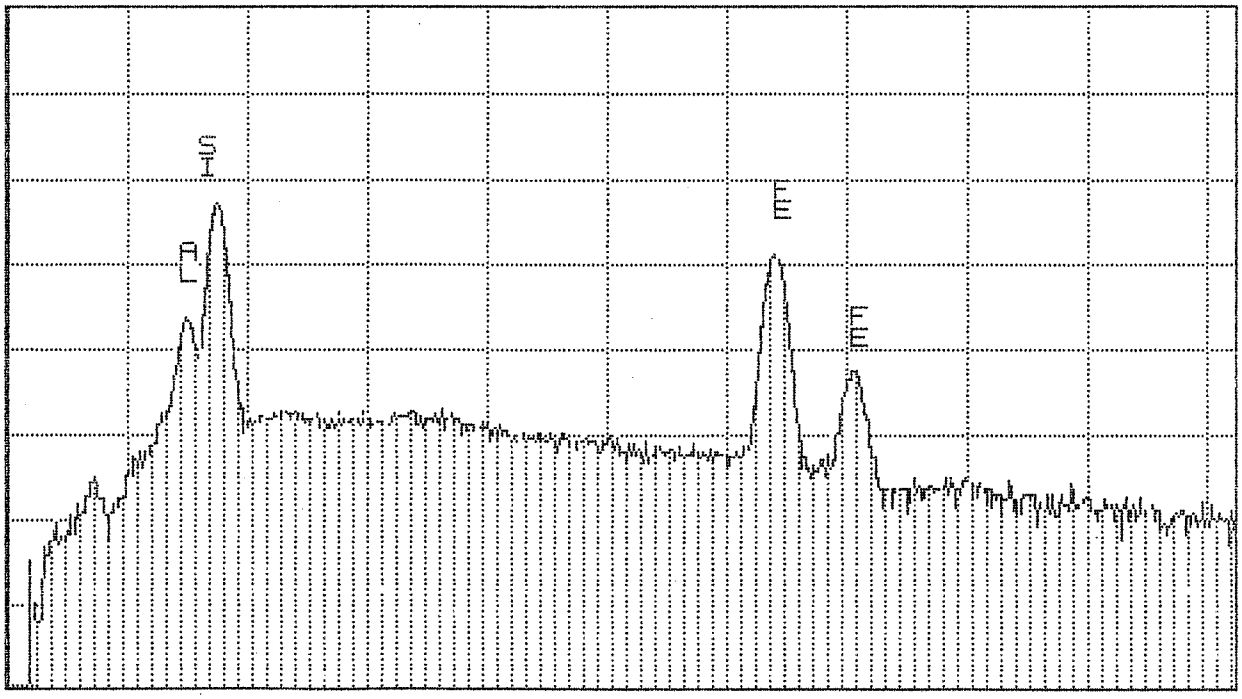
0.000 10/2/92 BWL VFS = LOG 1 10.240
92 ~~26.85/11.65-SEM 8~~ 20KV WD=24
NOP1-ECP-19.0/7.8-SEP1

Series II Southwest Research Institute FRI 02-OCT-92 09:20
Cursor: 0.000keV = 0



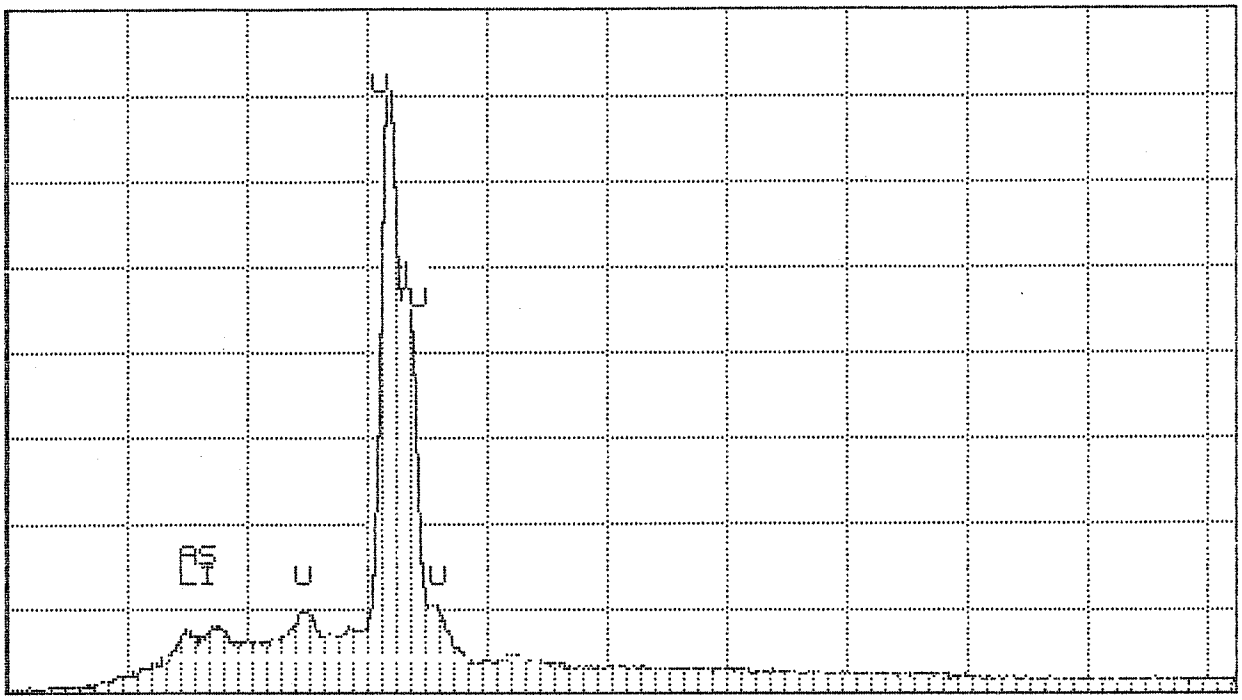
0.000 10/2/92 BWL VFS = 4096 10.240
104 ~~26.65/11.65-SEM 8a~~ 20KV WD=24
NOP1-ECP-19.0/7.8-SEP1-A

Series II Southwest Research Institute FRI 02-OCT-92 09:22
Cursor: 0.000keV = 0



0.000 10/2/92 BWL VFS = LOG 1 10.240
104 ~~26.65/11.65-SEM 8a~~ 20KV WD=24
NOP1-ECP-19.0/7.8-SEP1-A

Series II Southwest Research Institute FRI 02-OCT-92 09:26
Cursor: 0.000keV = 0



0.000 VFS = 4096 10.240
116 NOPI ECP 30 1 20KV WD=17

Series II Southwest Research Institute FRI 02-OCT-92 09:27
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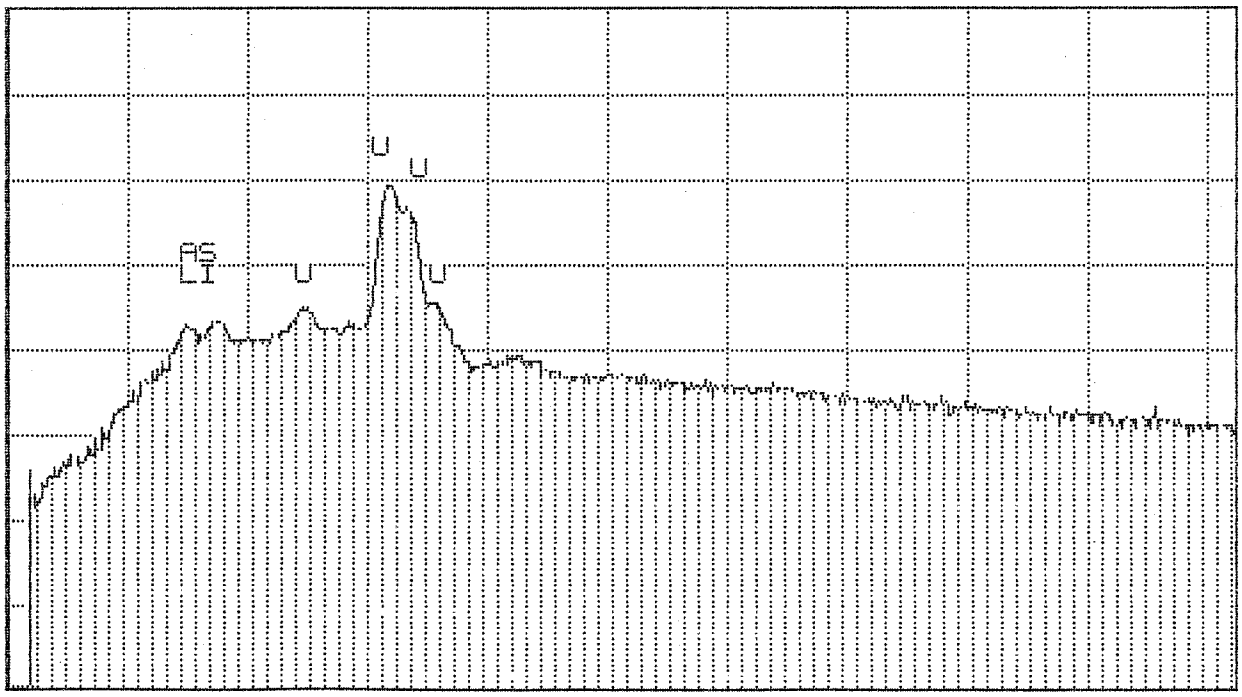

0.000 VFS = LOG 1 10.240
116 NOPI ECP 30 1 20KV WD=17

Series II Southwest Research Institute FRI 02-OCT-92 09:29
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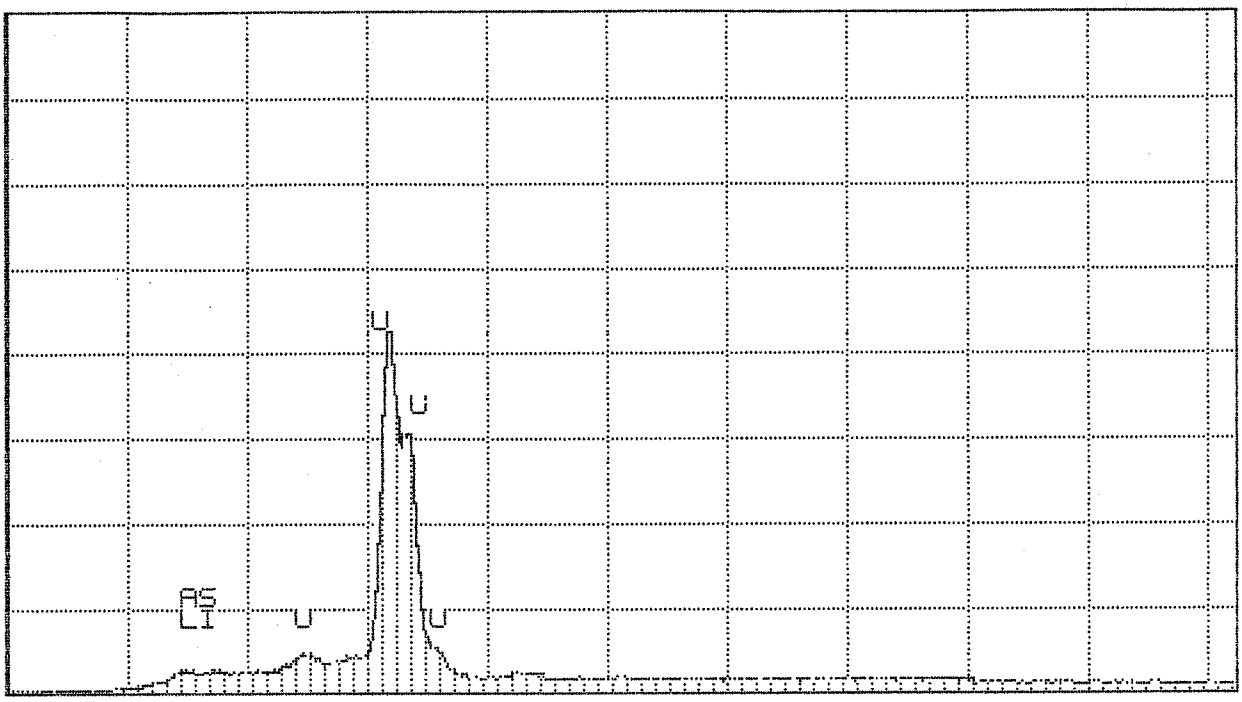

0.000 VFS = 4096 10.240
105 NOPI ECP 30 2 20KV WD=17

Series II Southwest Research Institute FRI 02-OCT-92 09:30
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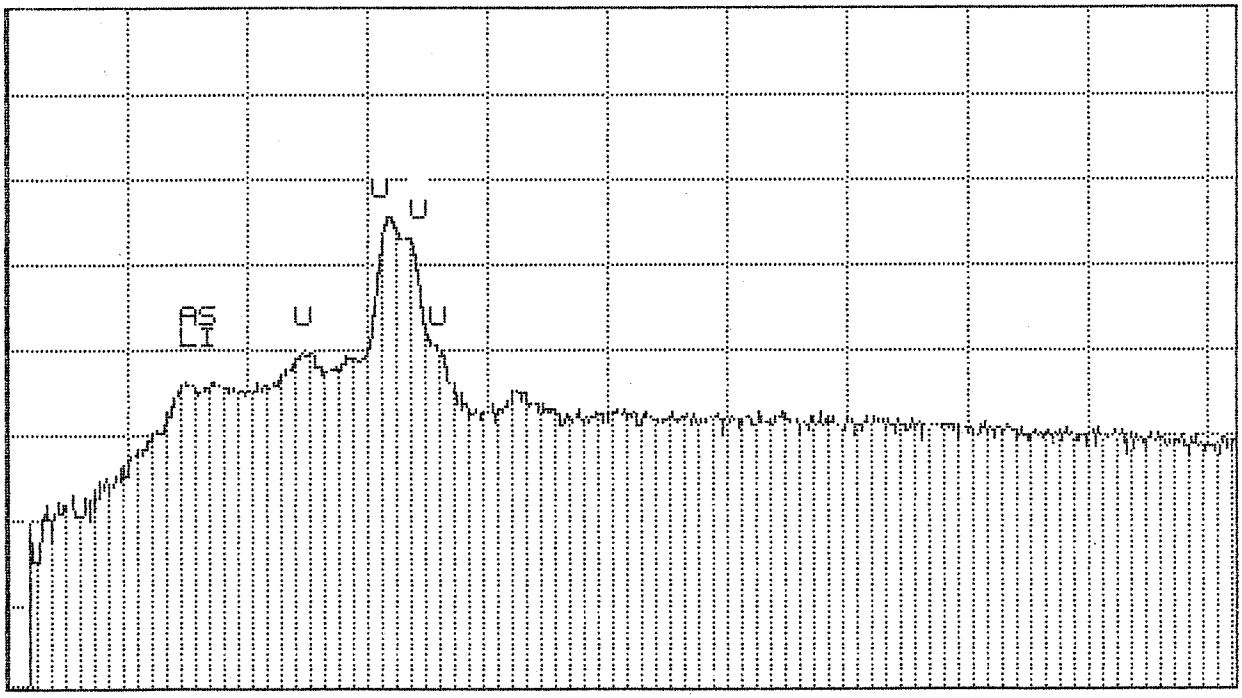

0.000 VFS = LOG 1 10.240
105 NOPI ECP 30 2 20KV WD=17