Electronic Supplementary Information

PPH dendrimers grafted on silica nanoparticles: surface chemistry, characterization, silver colloids hosting and antibacterial activity.

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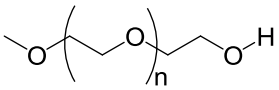
CONTENT:

Compounds



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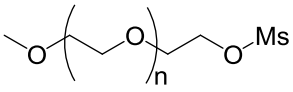

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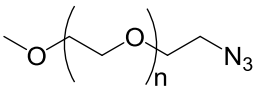

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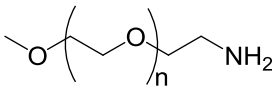

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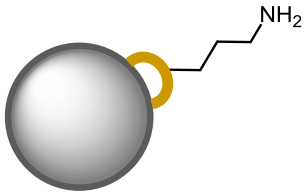
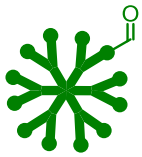


Si-2



1-G$_1$

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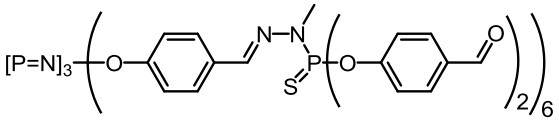
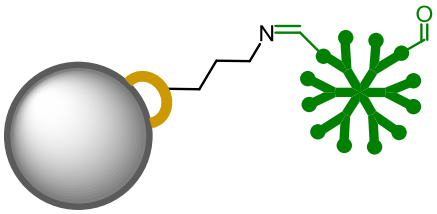
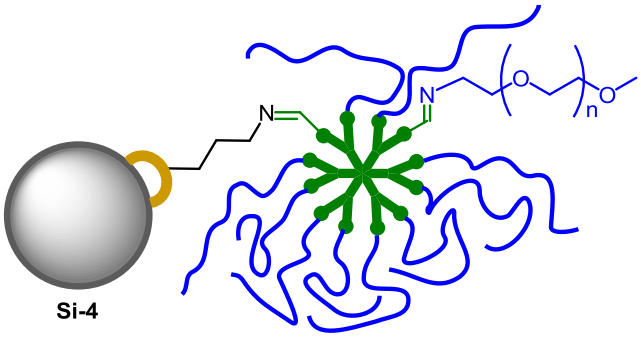
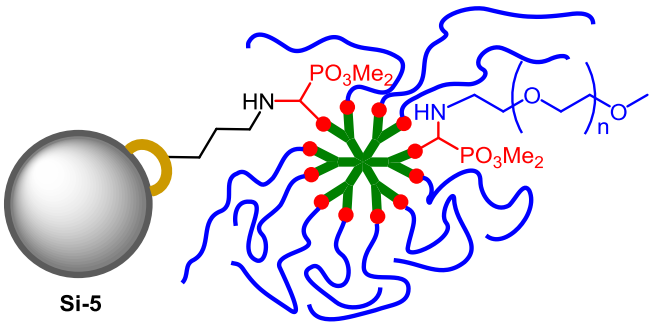




Si-3

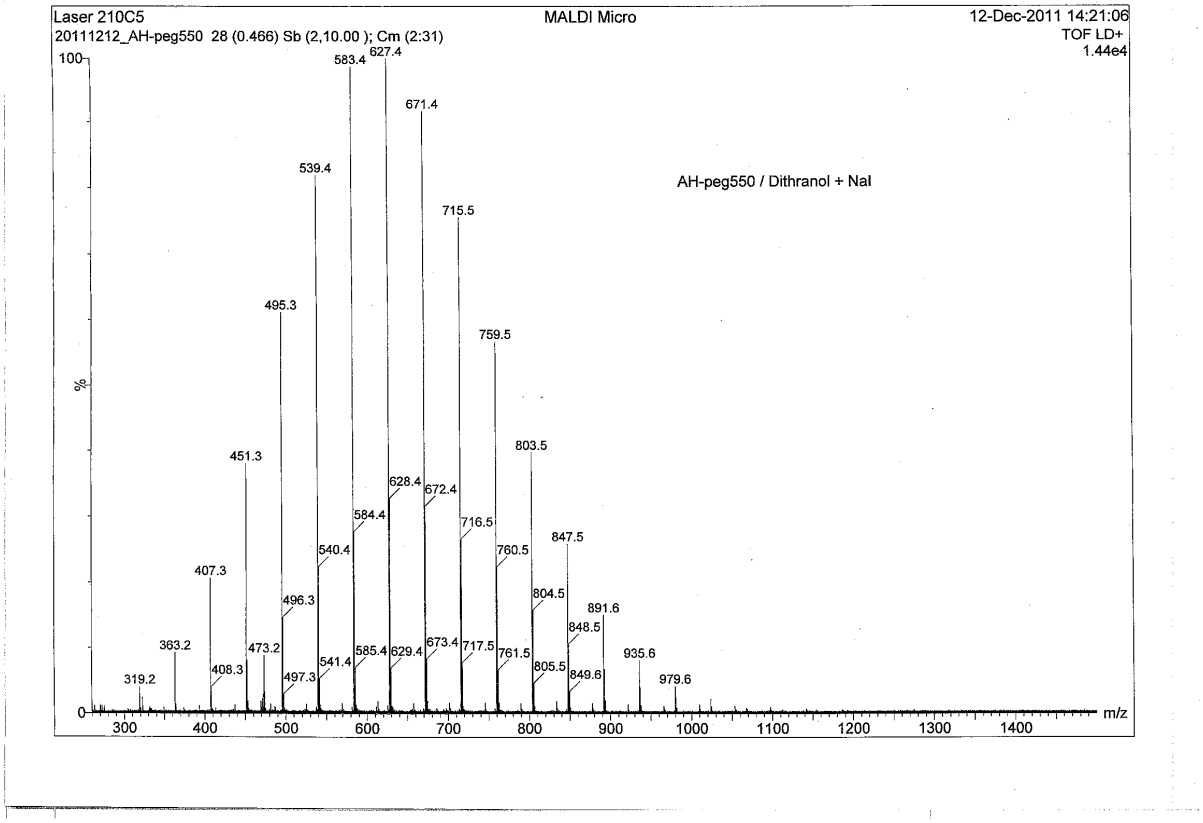


Si-4



Si-5

2a, Mass Spectrometry



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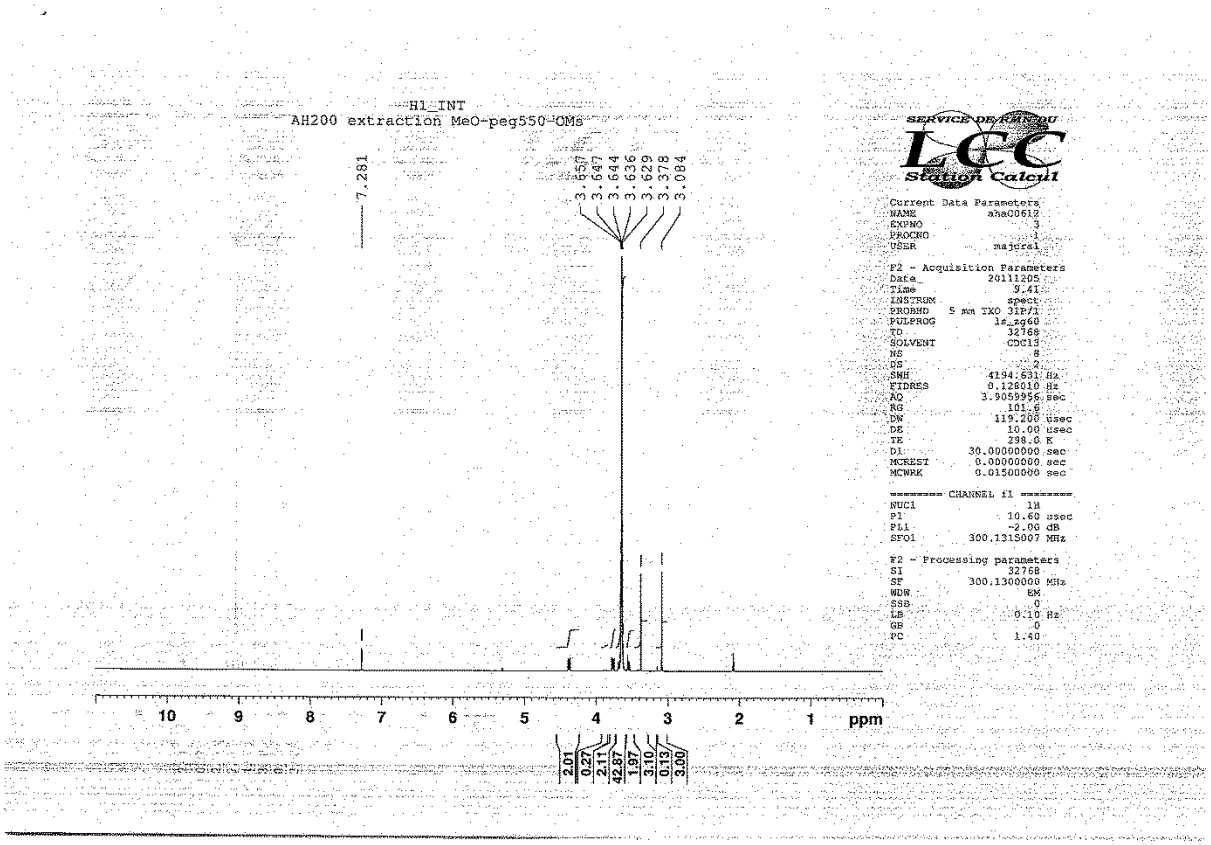

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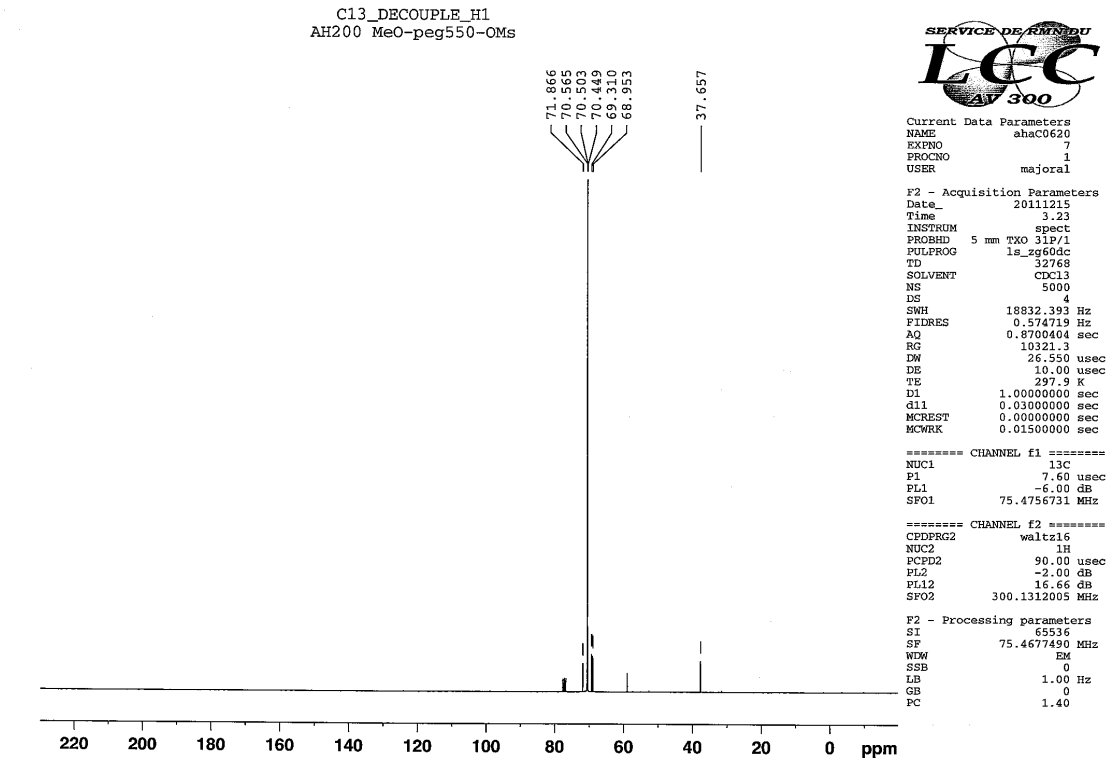
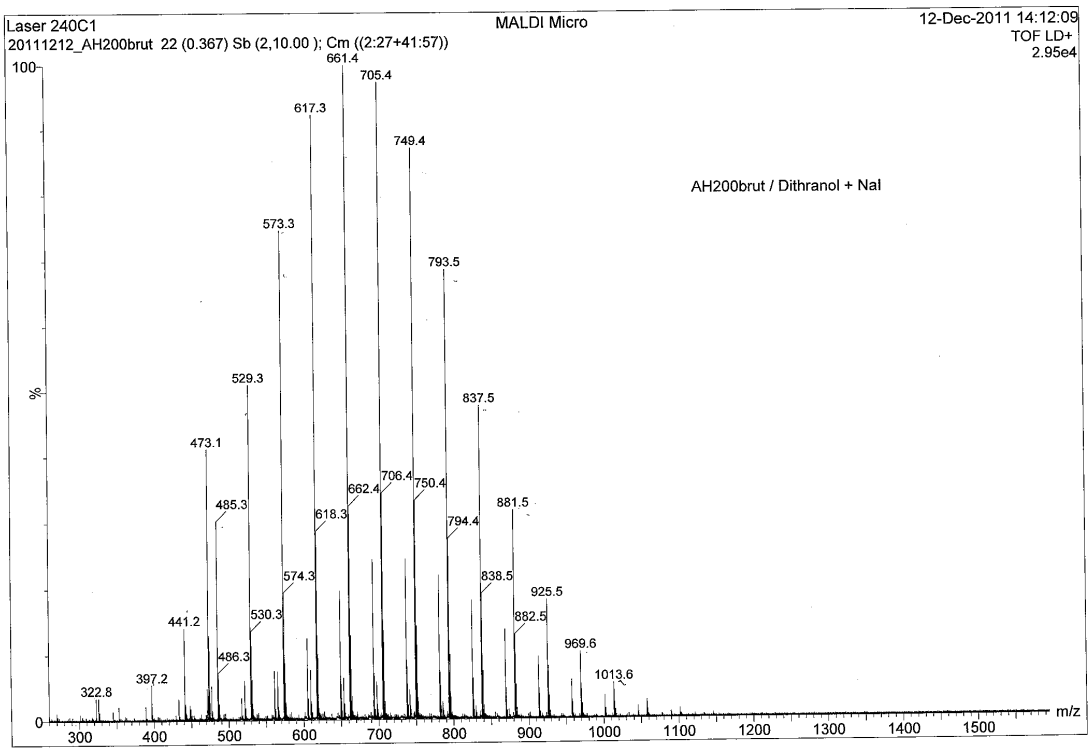
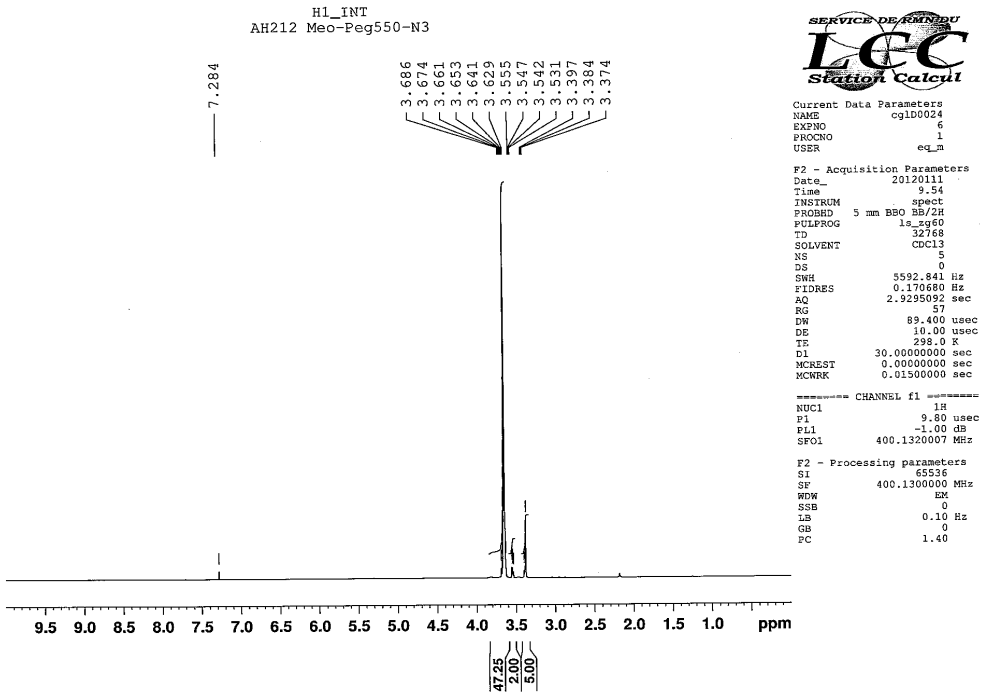


2b, Mass Spectrometry



2c, ^{1}H NMR



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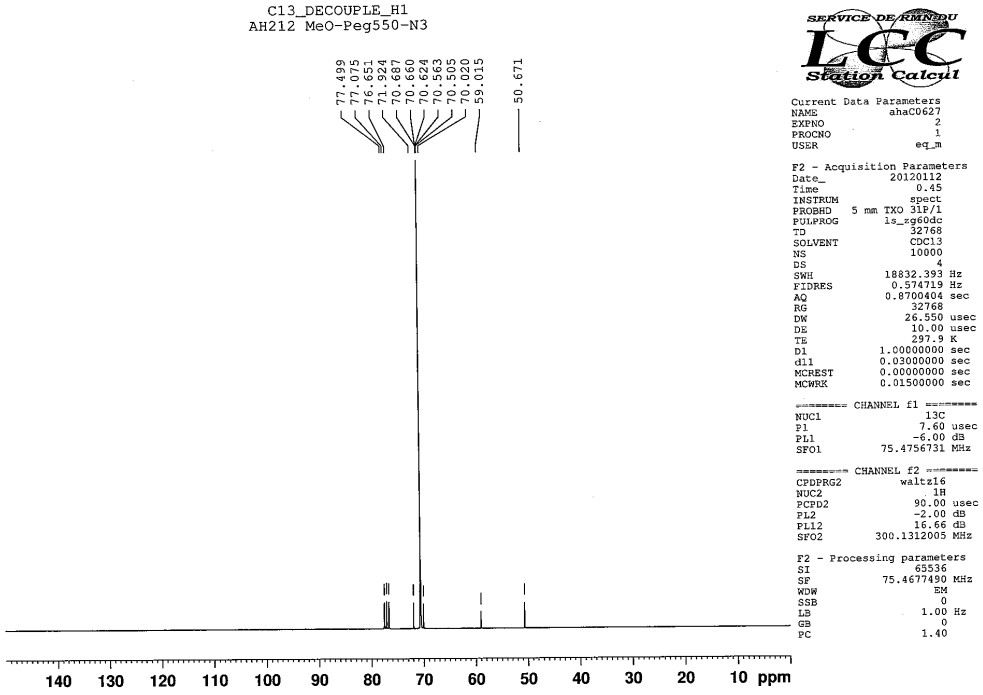

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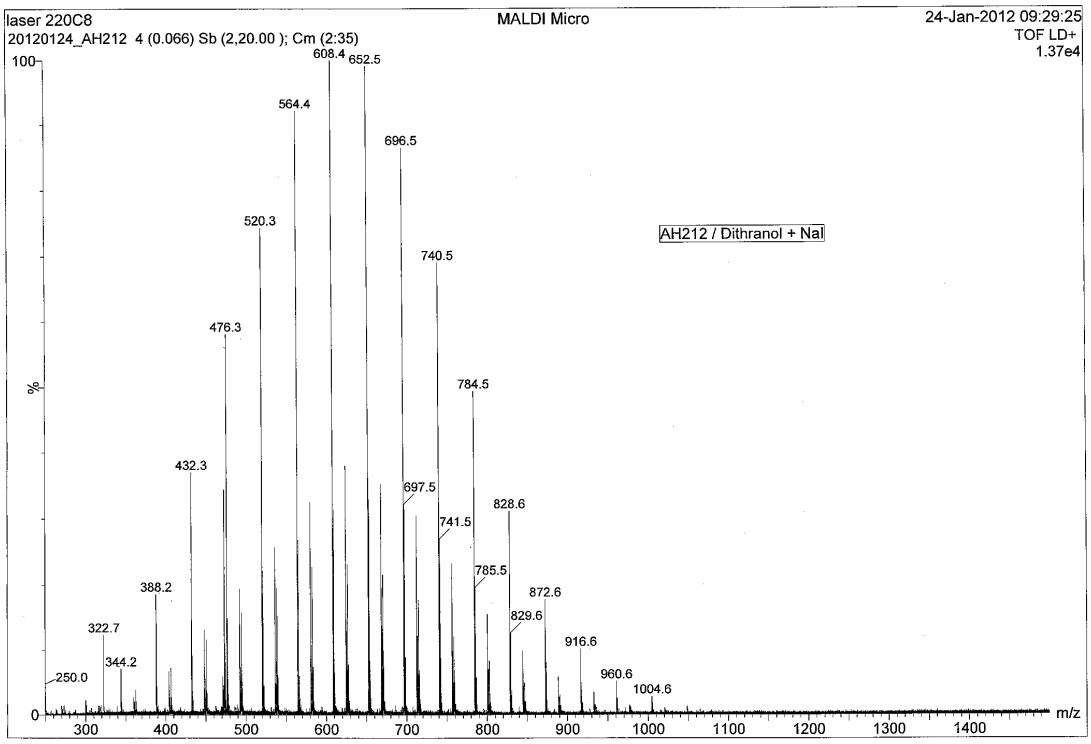
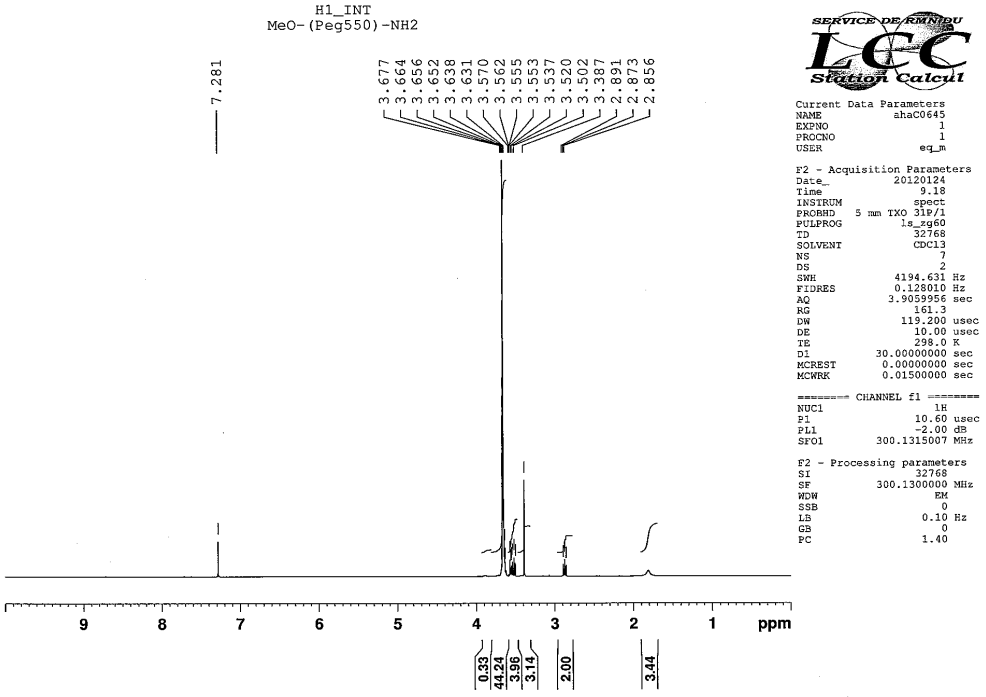
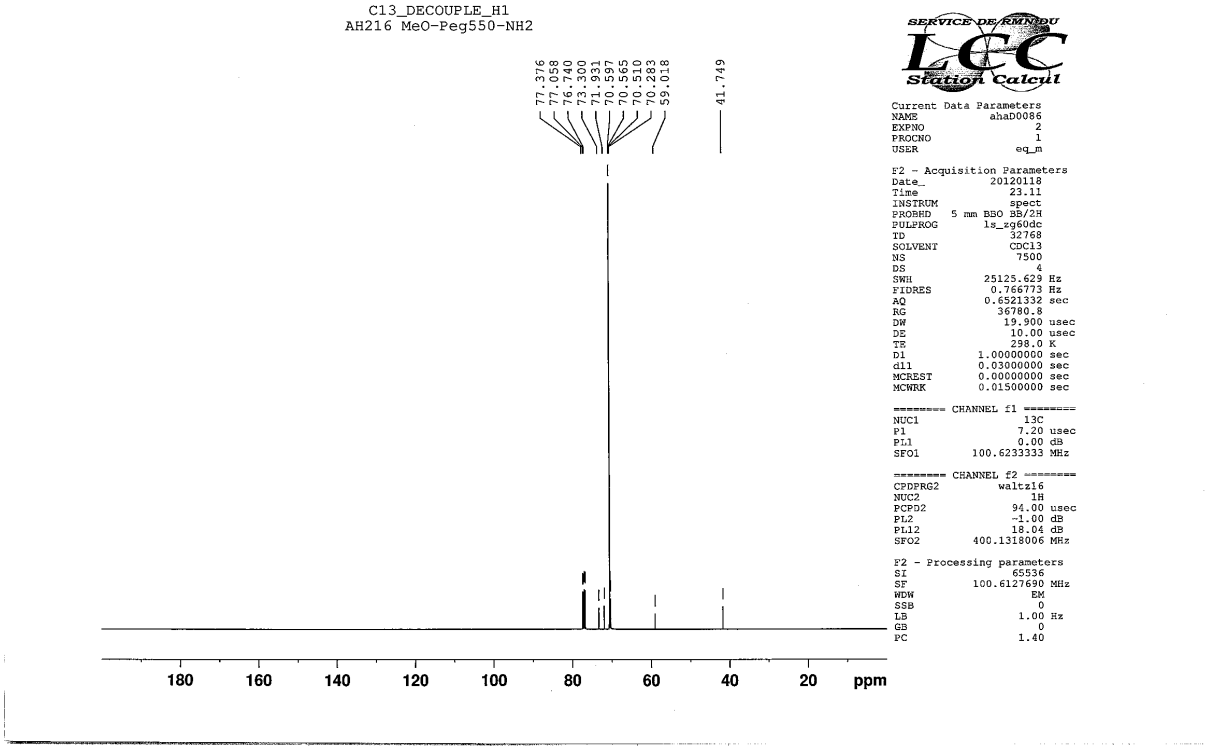


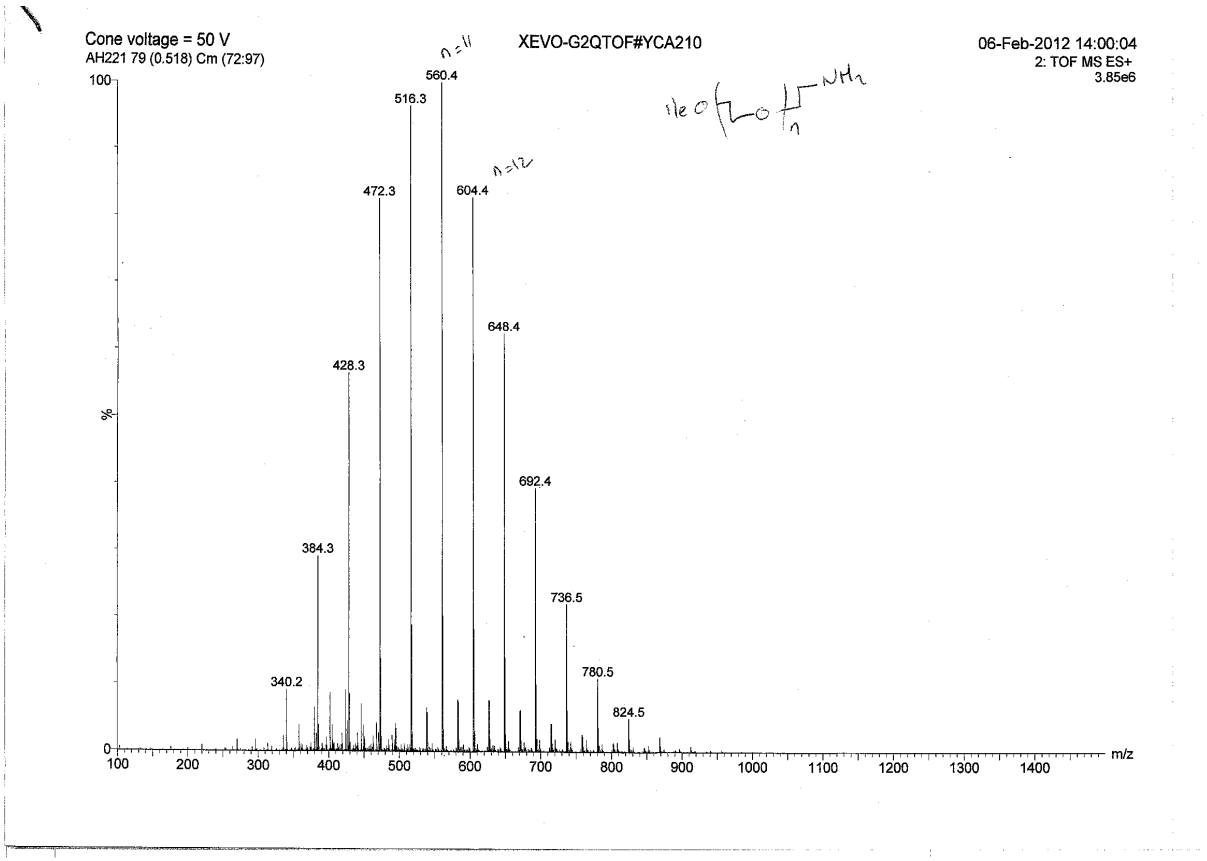
2d, ^{1}H NMR



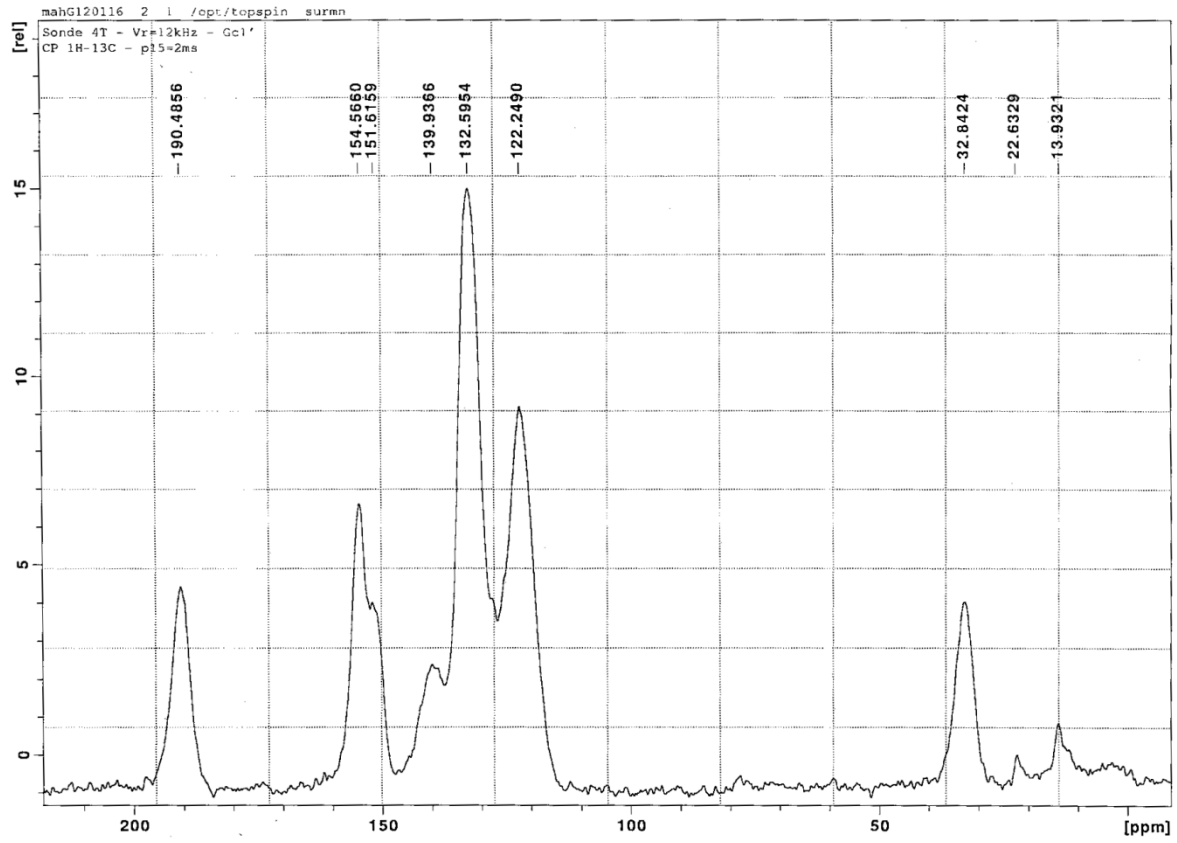
2d, ^{13}C NMR



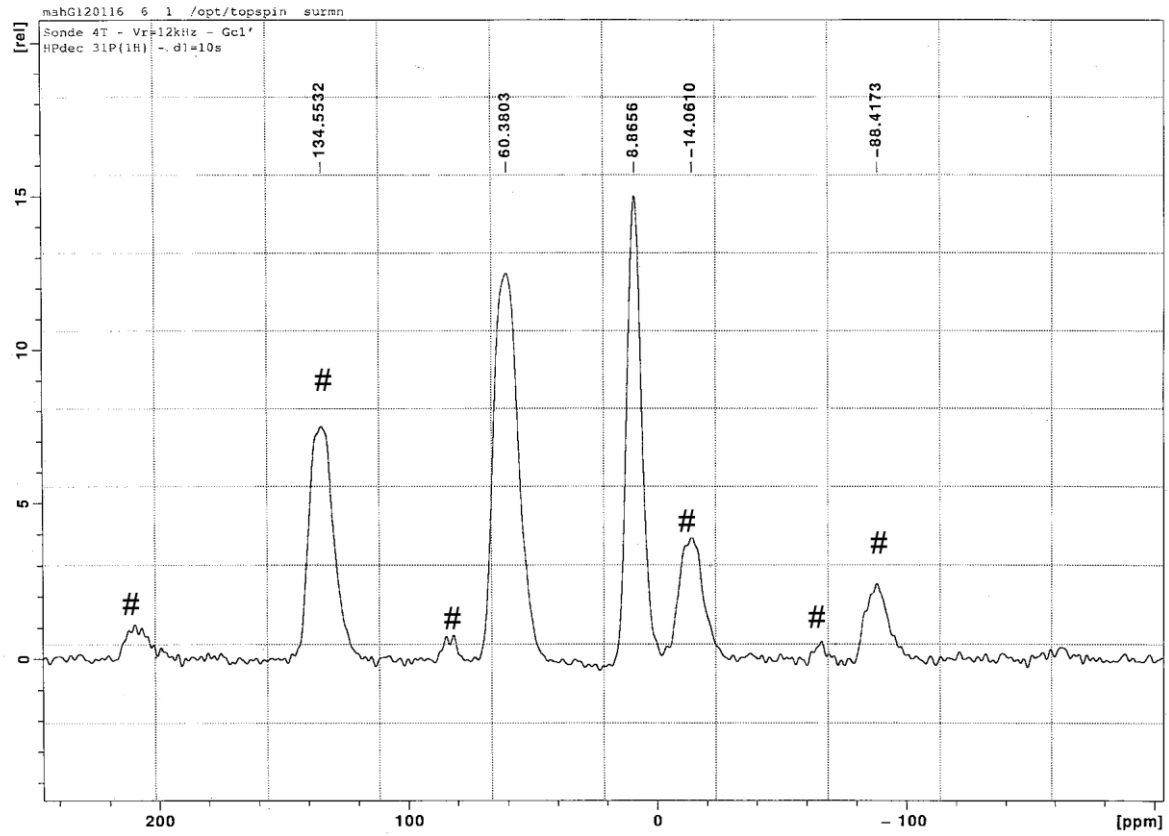
2d, Mass Spectrometry



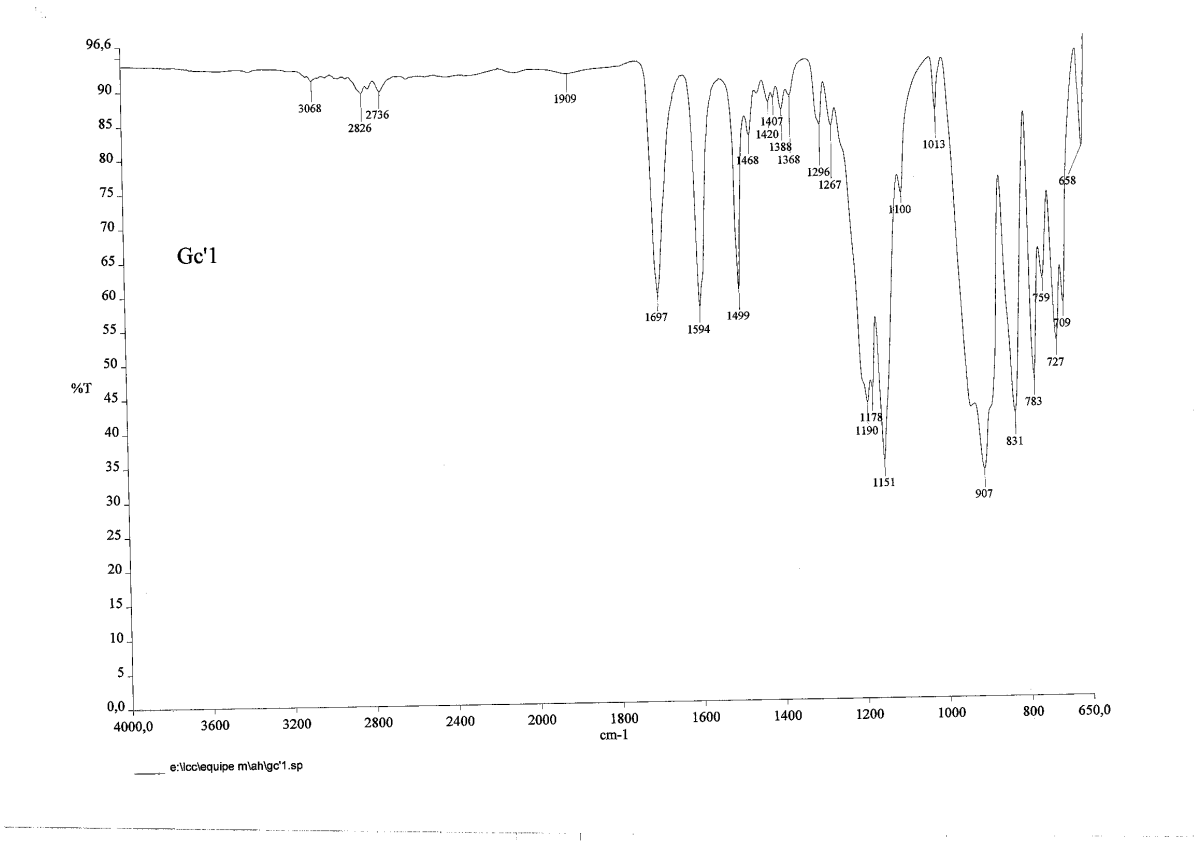
Dendrimer 1-G1: ^{13}C- {^{1}H} CP-MAS NMR



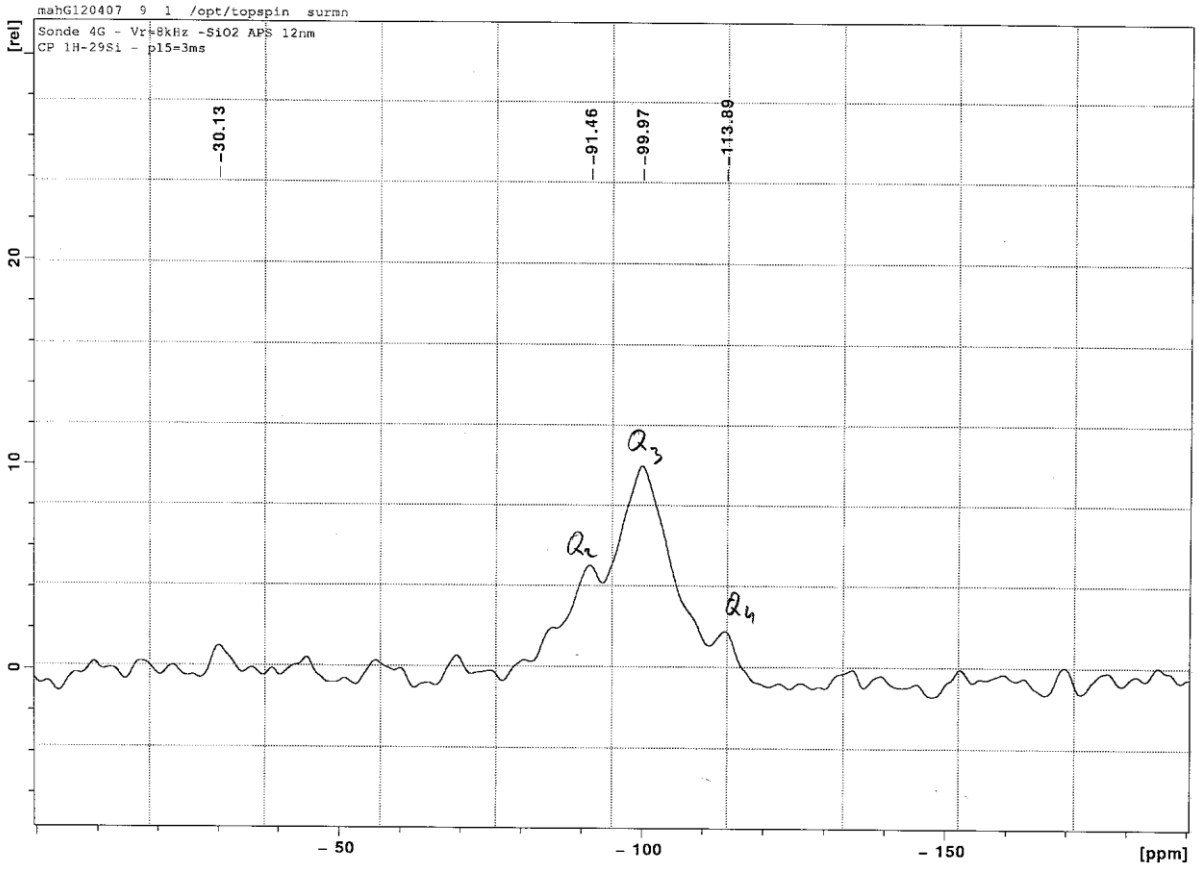
Dendrimer 1-G1: ^{31}P- {^{1}H} CP-MAS NMR



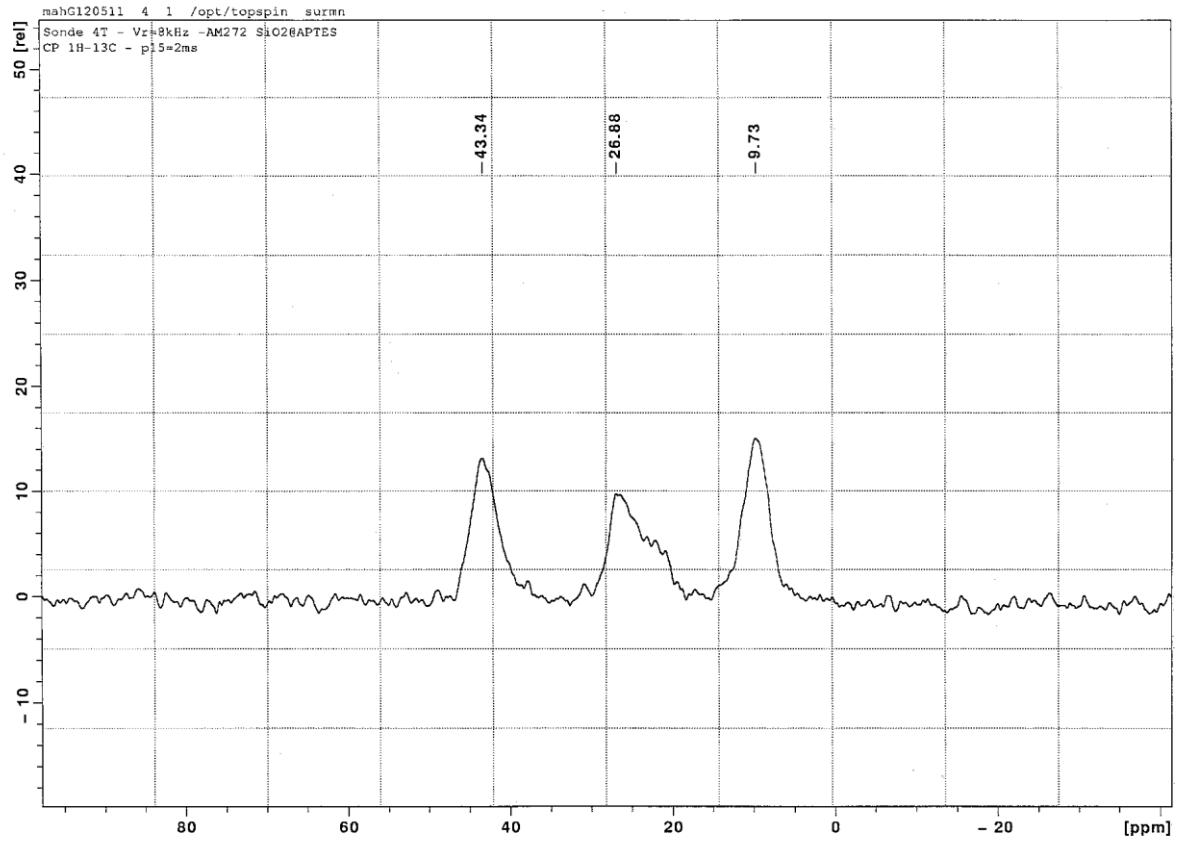
Dendrimer 1-G1: FT-IR



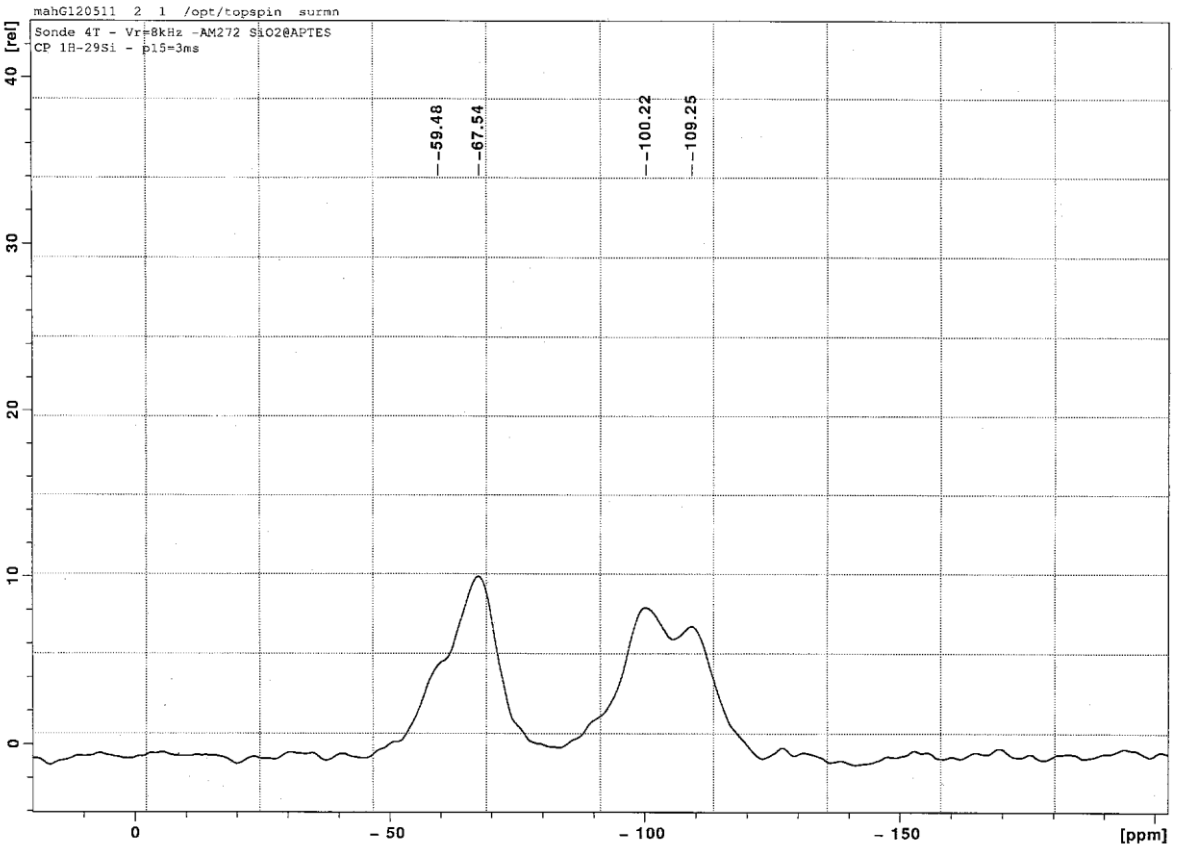
Si-1, ^{29}Si CP-MAS NMR



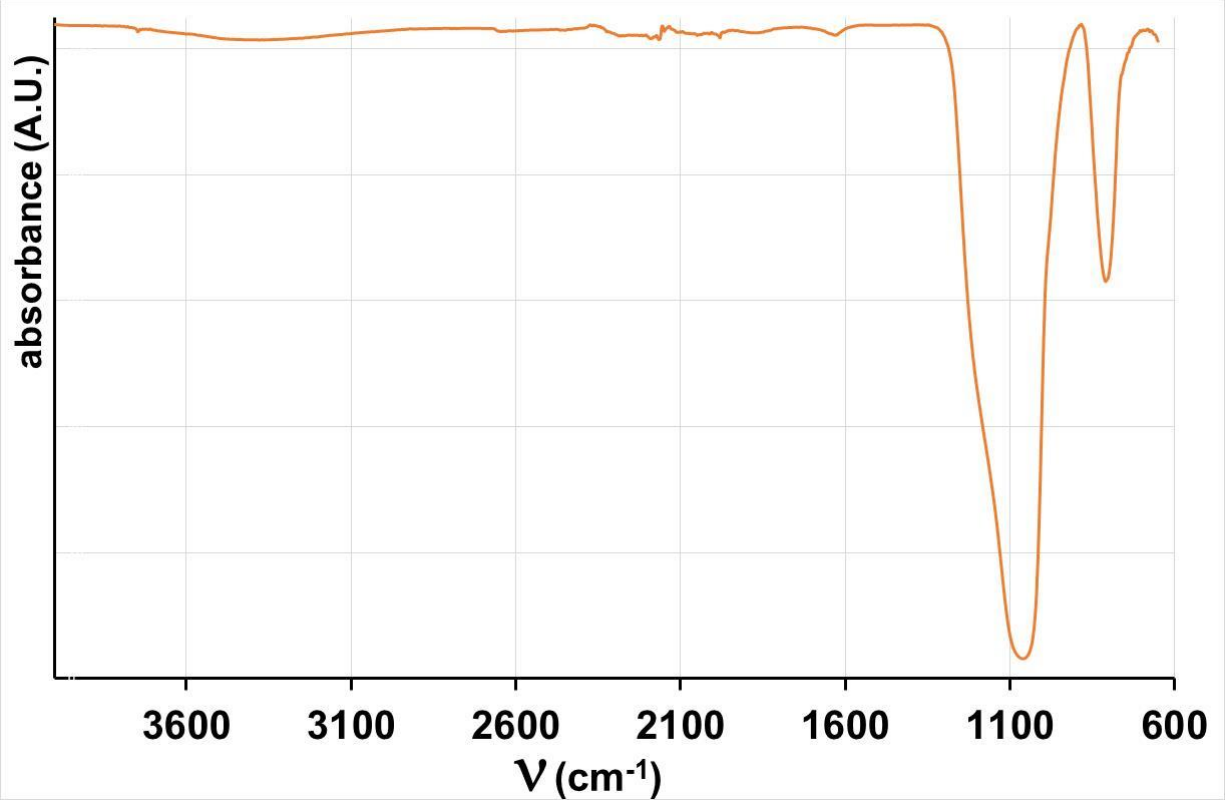
Si-2, ^{13}C CP-MAS NMR



Si-2, ^{29}Si CP-MAS NMR

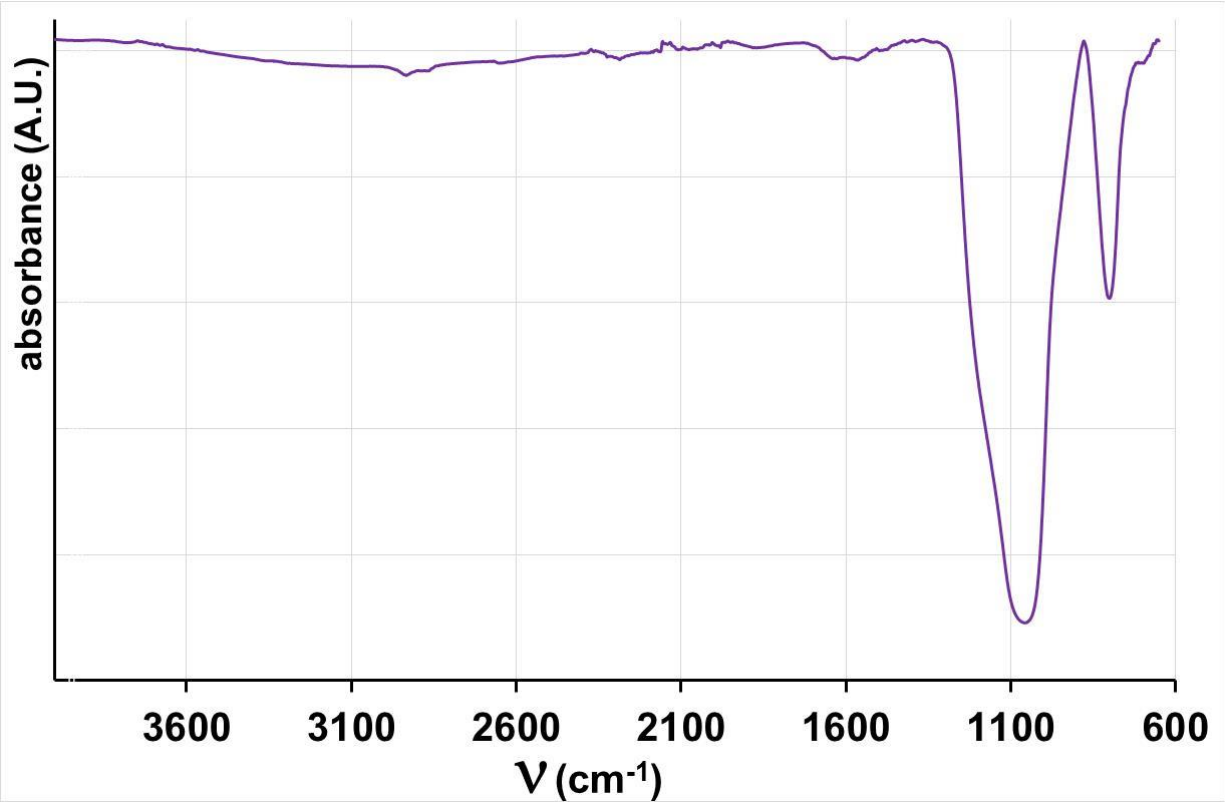


Si-1, FT-IR



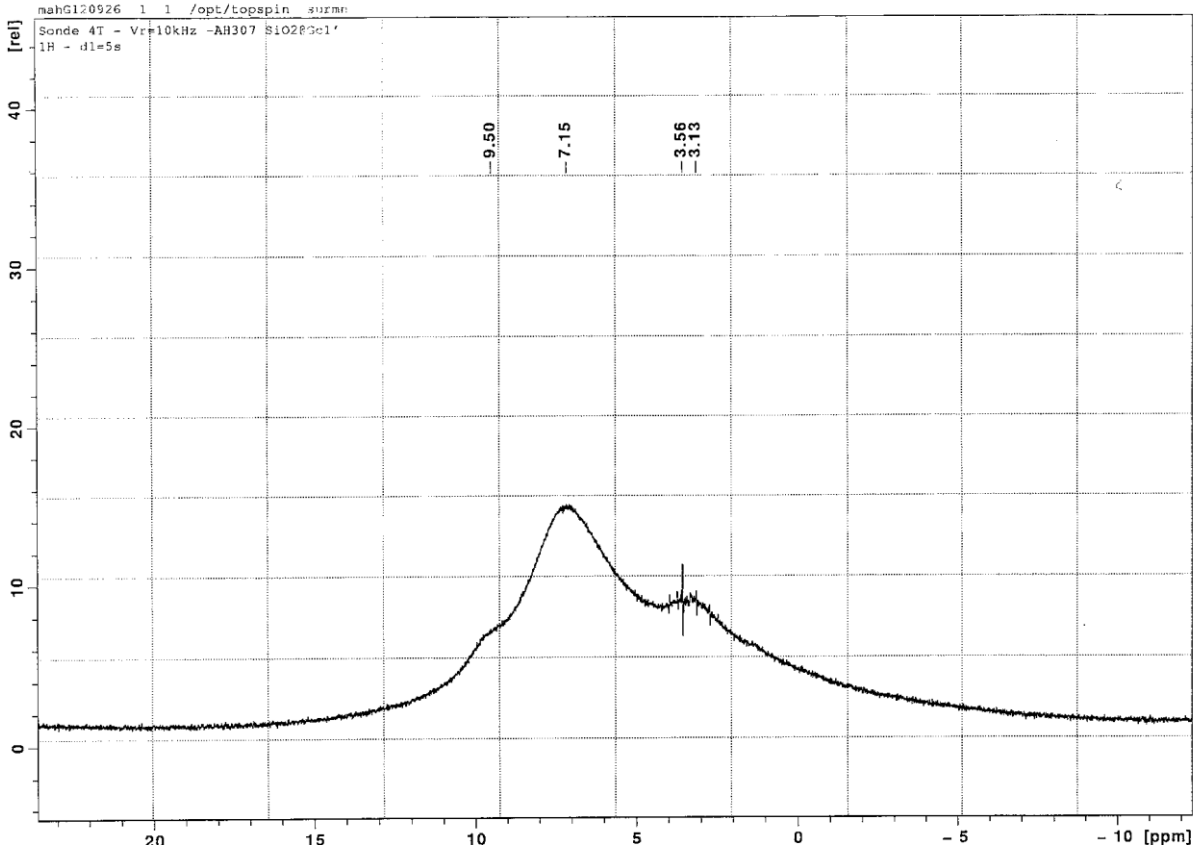
Normalized (reference at 1046 cm^{-1})

Si-2, FT-IR

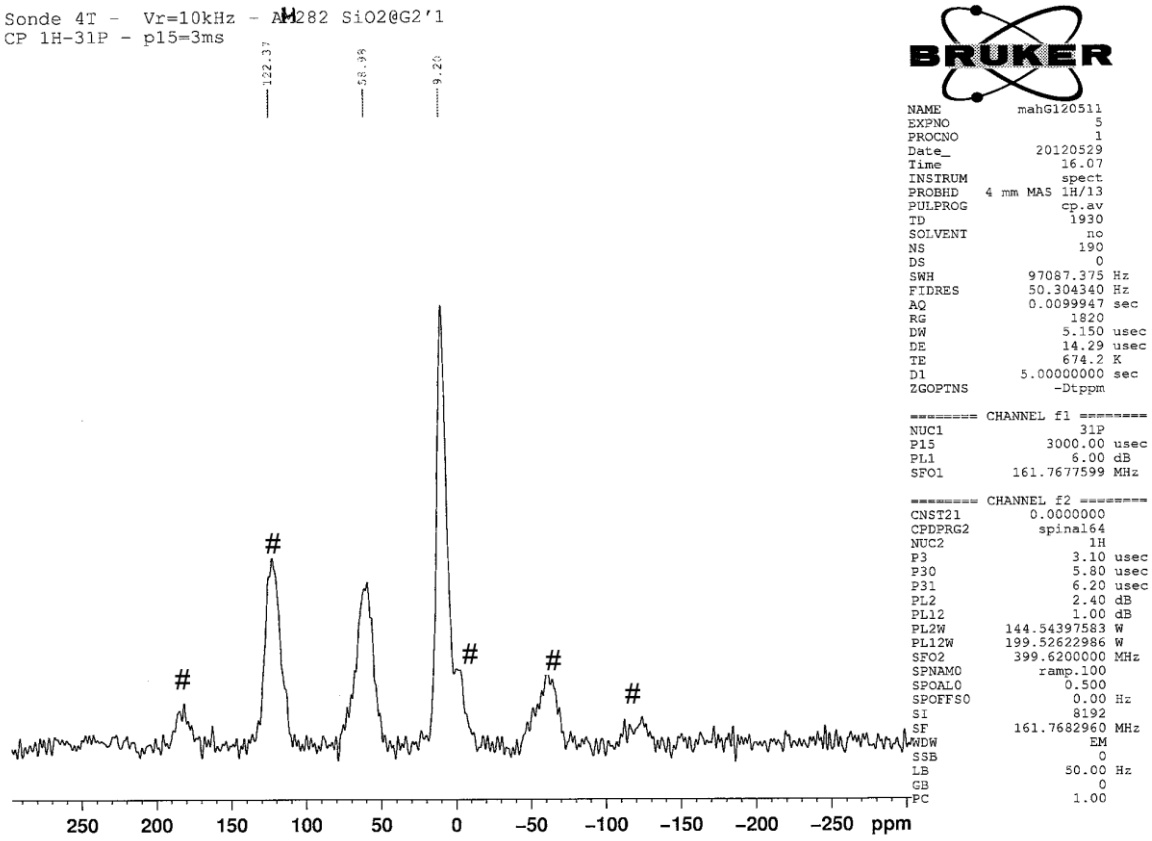


Normalized (reference at 1046 cm^{-1})

Si-3, ^{1}H CP-MAS NMR



Si-3, ^{31}P CP-MAS NMR



BRUKER

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SOLVENT	no
NS	190
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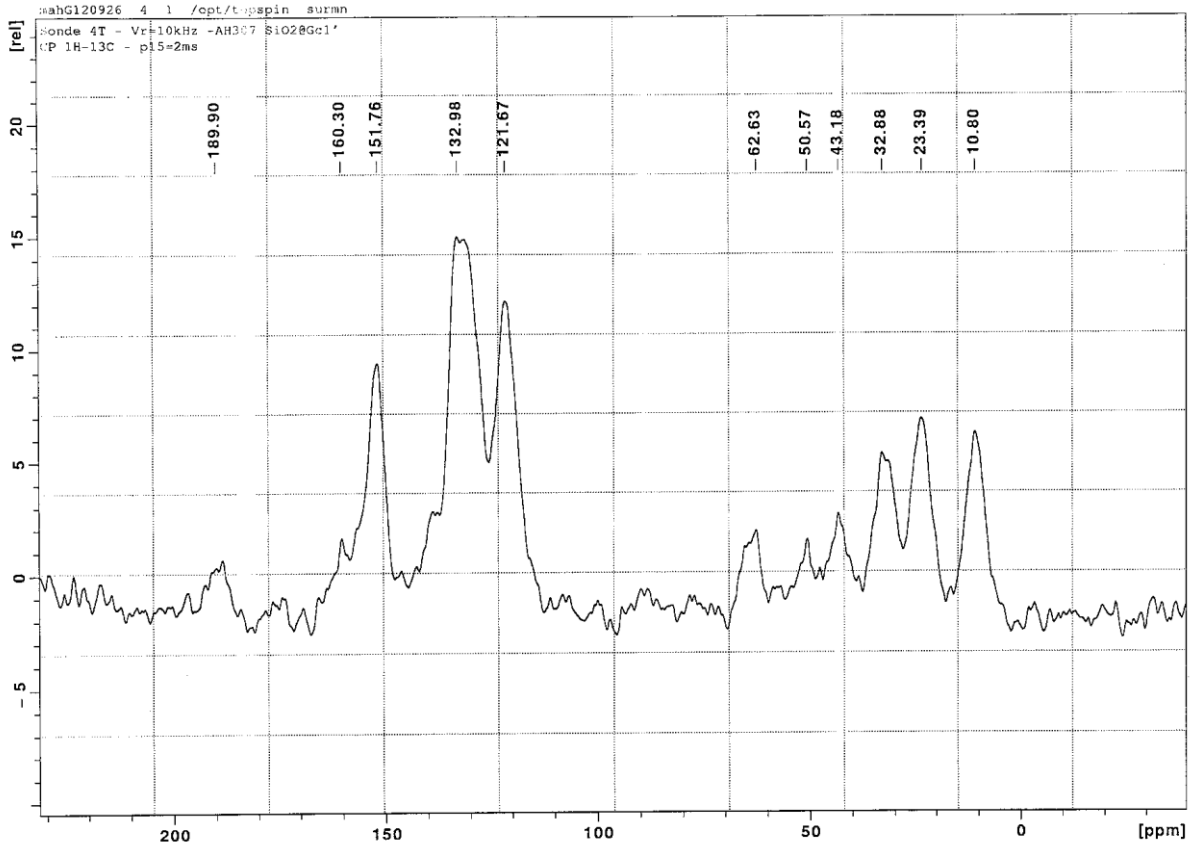
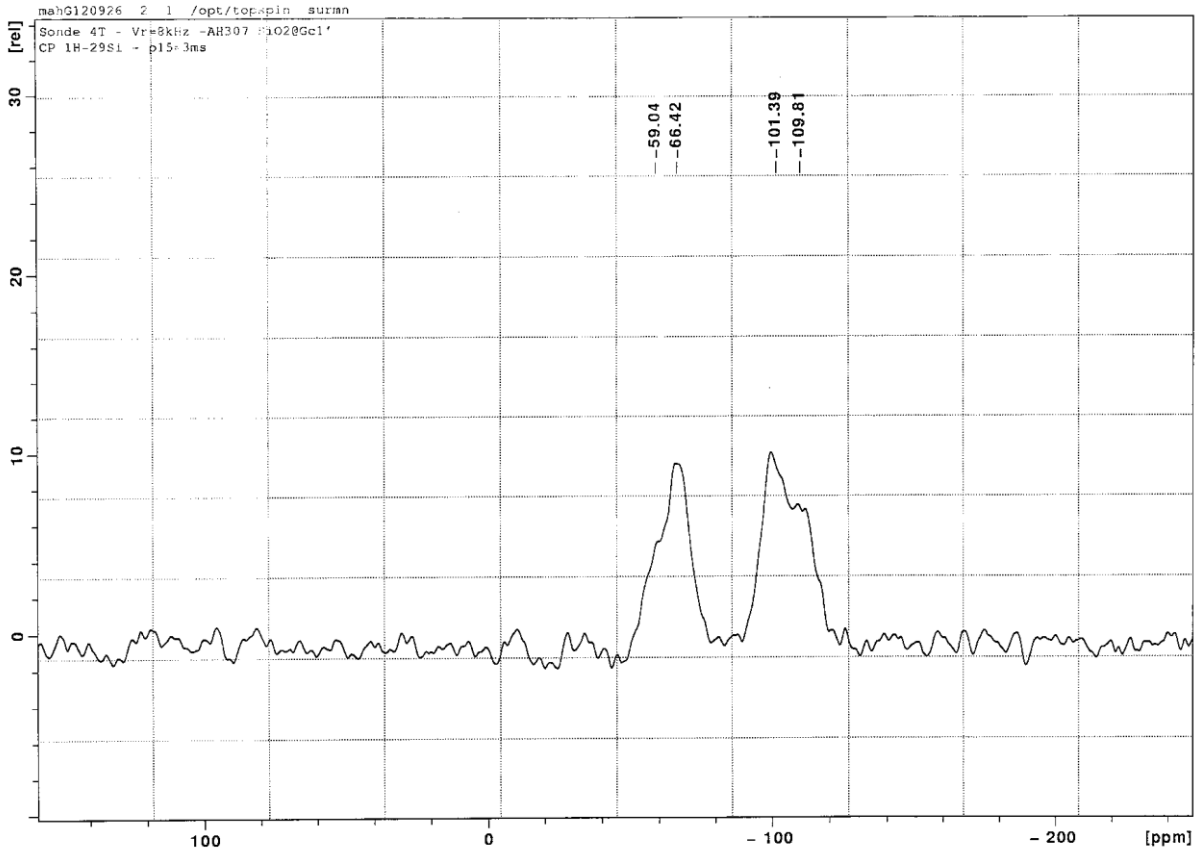
SWH	97087.375 Hz
FIDRES	50.304340 Hz
AQ	0.0099947 sec
RG	1820
DW	5.150 usec
DE	14.29 usec
TE	674.2 K
D1	5.00000000 sec
ZGOPTNS	-Dtppm
======== CHANNEL f1 ========	
NUC1	31P
P15	3000.00 usec
PL1	6.00 dB
SFO1	161.7677599 MHz
======== CHANNEL f2 ========	
CNST21	0.0000000
CPDPRG2	spinal64
NUC2	1H
P3	3.10 usec
P30	5.80 usec
P31	6.20 usec
PL2	2.40 dB
PL12	1.00 dB
PL2W	144.54397583 W
PL12W	199.52622986 W
SFO2	399.6200000 MHz
SPNAM0	ramp.100
SPOAL0	0.500
SPOFFS0	0.00 Hz
SI	8192
SF	161.7682960 MHz
WDW	EM
SSB	0
LB	50.00 Hz
GB	0
PC	1.00

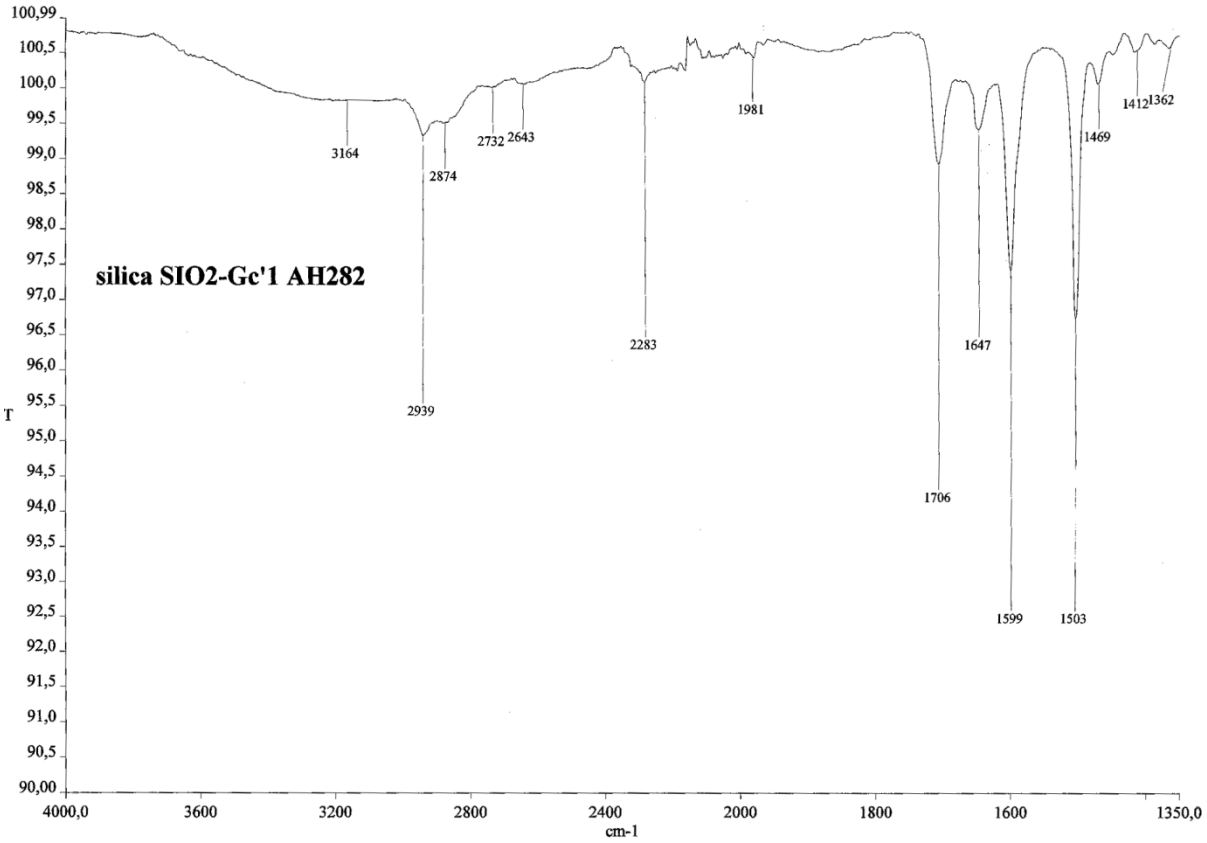
Si-3, ^{13}C CP-MAS NMR



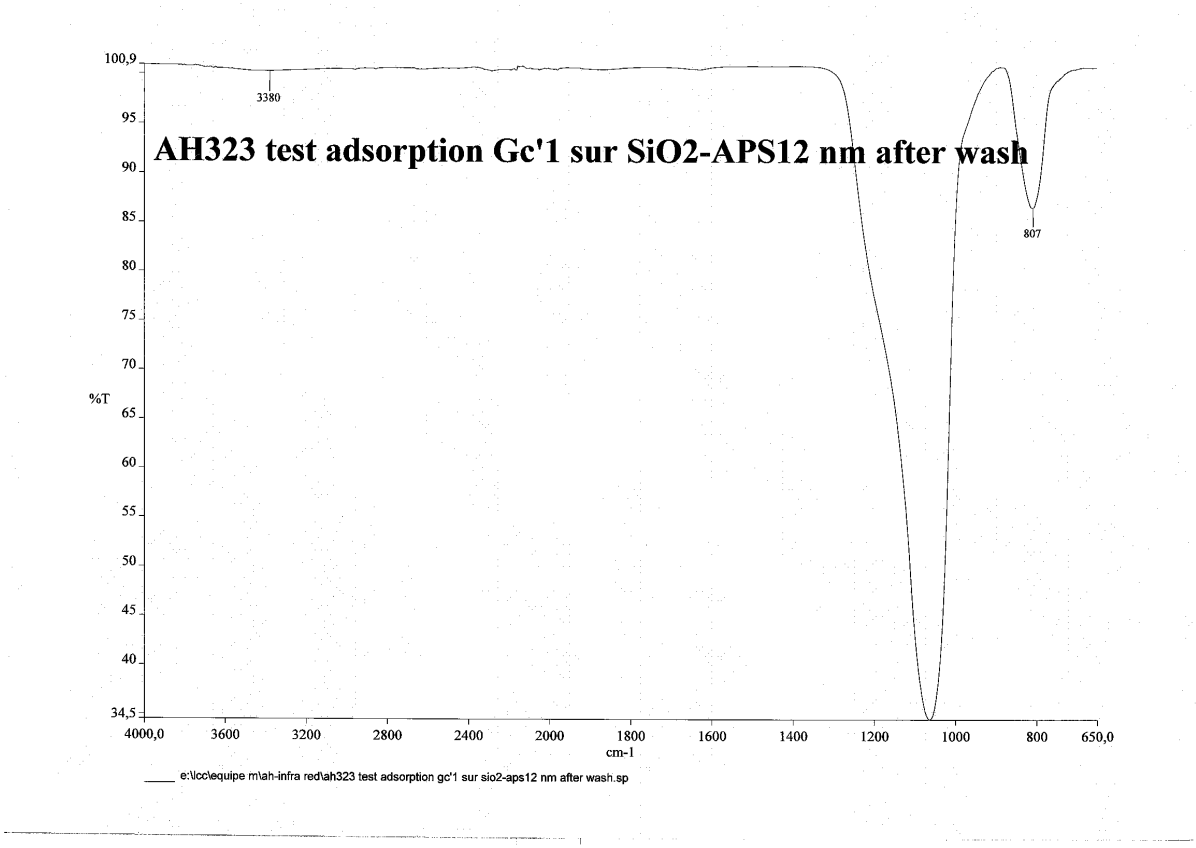
Si-3, ^{29}Si CP-MAS NMR



Si-3, FT-IR

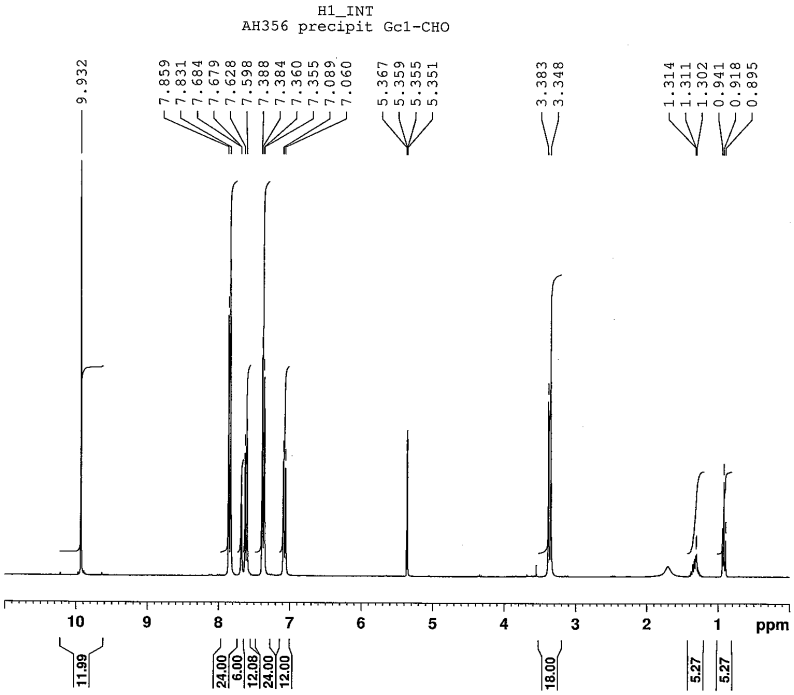

silica SIO2-Gc'1 AH282
T
cm-1
3164
2939
2874
2732
2643
2283
1981
1706
1647
1599
1503
1469
1412
1362

Adsorption of 1-G_1 on Si-1



AH323: Dendrimer Gc'1 (**1-G_1**) is solubilized in a suspension of Si-1 in a mixture MeOH/THF (7:3, V/V). The suspension is heated at 55°C overnight. After cooling, the silica is separated by filtration on a sintered glass filter, washed with THF (4x50 mL) and dichloromethane (4x25 mL) and dried under vacuum at 100°C. The resulting powder is AH323 (no trace of adsorbed dendrimer on the FTIR spectrum).

The washings are gathered, concentrated under reduced pressure and analyzed by proton and phosphorus NMR (see hereunder). The dendrimer **1-G_1** is recovered without any trace of degradation.



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EXPNO 1
PROCNO 1
USER eq_m

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DS 2
SWH 4194.631 Hz
FIDRES 0.128010 Hz
AQ 3.9059956 sec
RG 256
DW 119.200 usec
DE 10.00 usec
TE 298.0 K
D1 30.00000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
NUC1 1H
P1 10.70 usec
PL1 -2.00 dB
SFO1 300.1315007 MHz

F2 - Processing parameters
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SF 300.1300000 MHz
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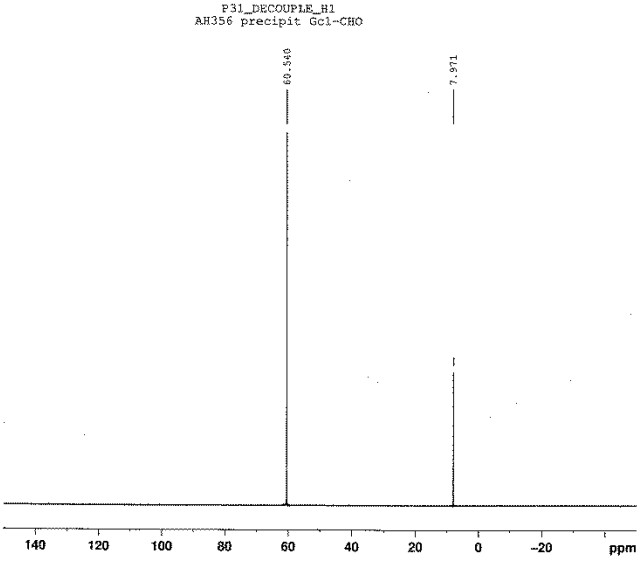
SSB 0
LB 0.10 Hz
GB 0
PC 1.40



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USER eq_m

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SWH 42462.844 Hz
FIDRES 1.295863 Hz
AQ 0.3858832 sec
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DW 11.775 usec
DE 10.00 usec
TE 297.9 K
D1 0.10000000 sec
d11 0.03000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

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NUC1 31P
P1 8.90 usec
PL1 0.00 dB
SFO1 121.5039742 MHz

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NUC2 1H
PCPD2 90.00 usec
PL2 -2.00 dB
PL12 16.66 dB
SFO2 300.1312005 MHz

F2 - Processing parameters
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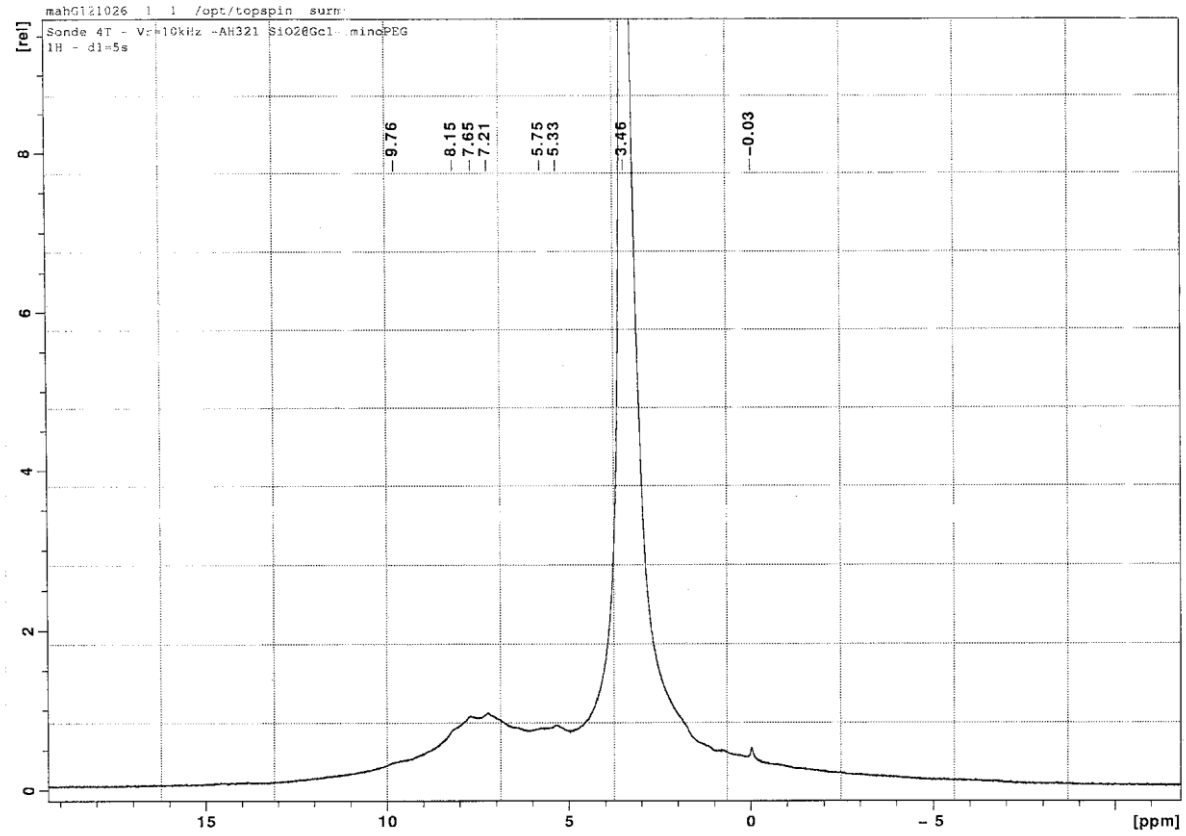
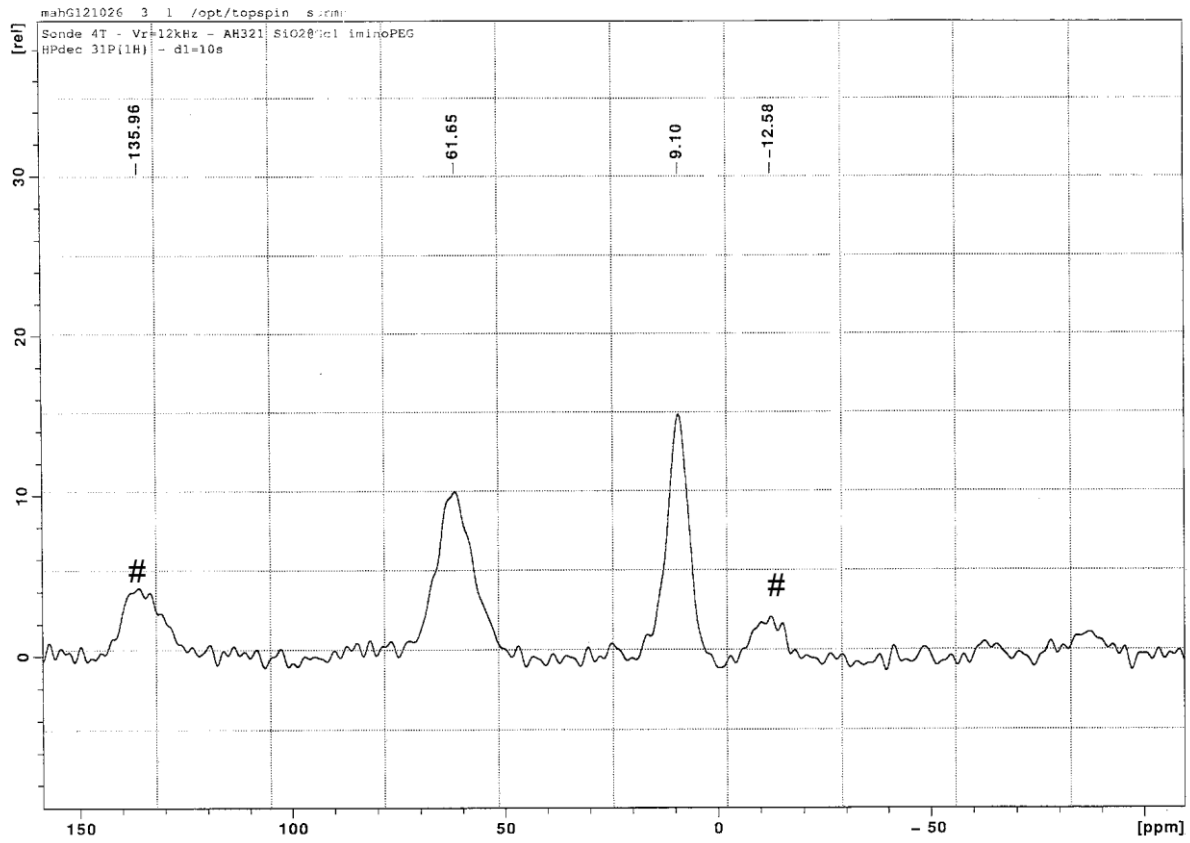
LB 1.00 Hz
GB 0
PC 1.40

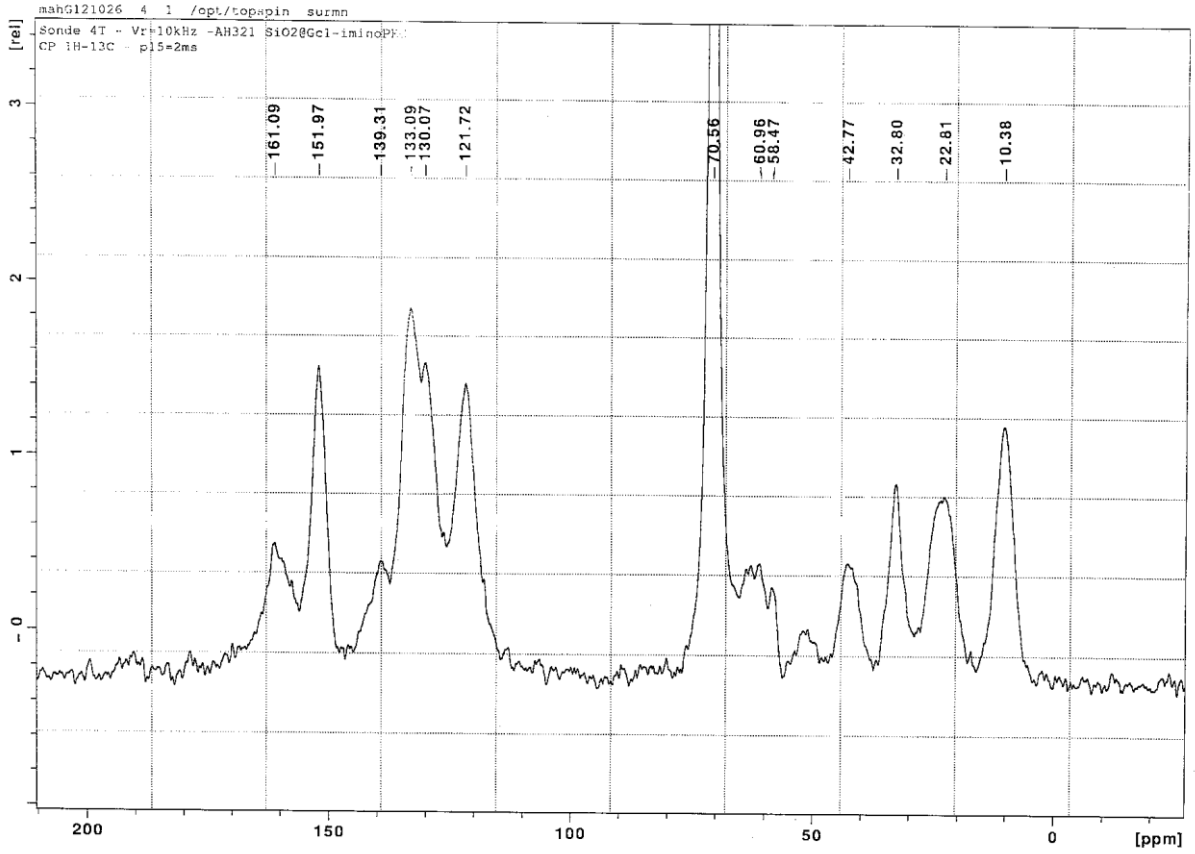
Si-4, ^{1}H CP-MAS NMR



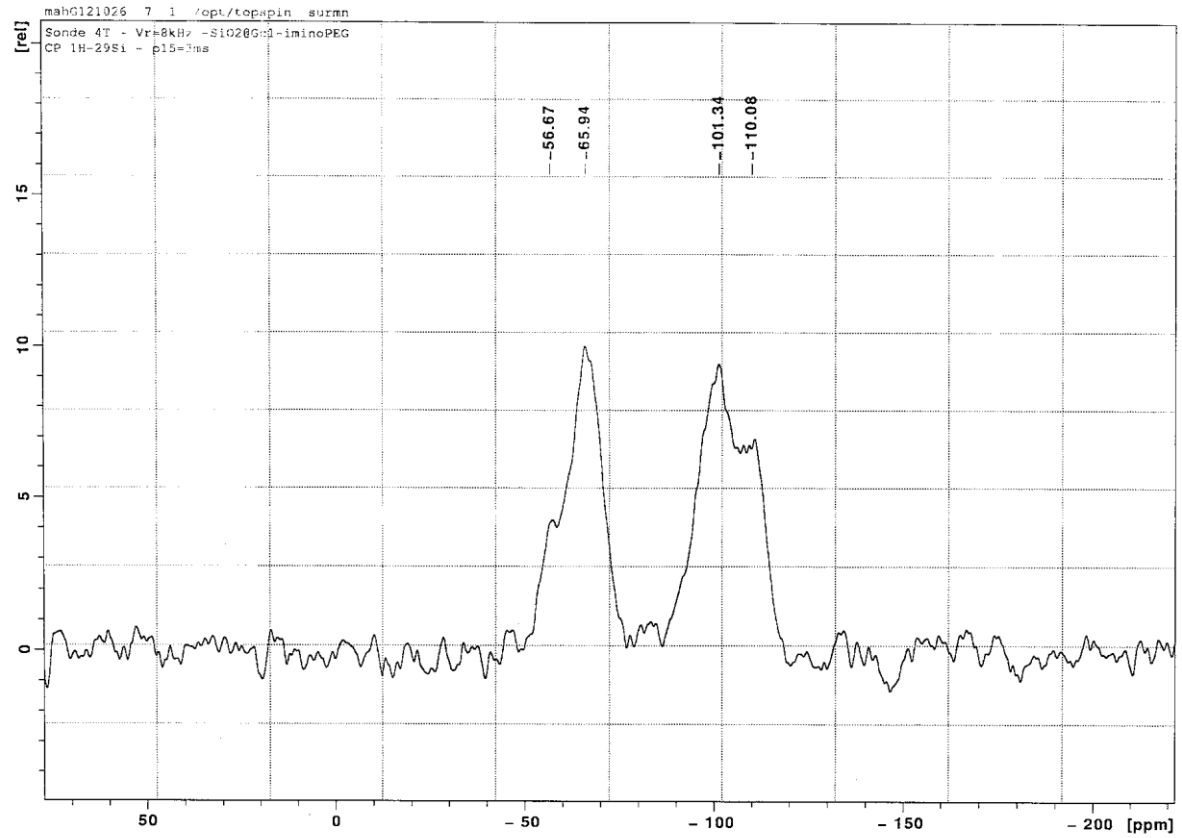
Si-4, ^{31}P CP-MAS NMR



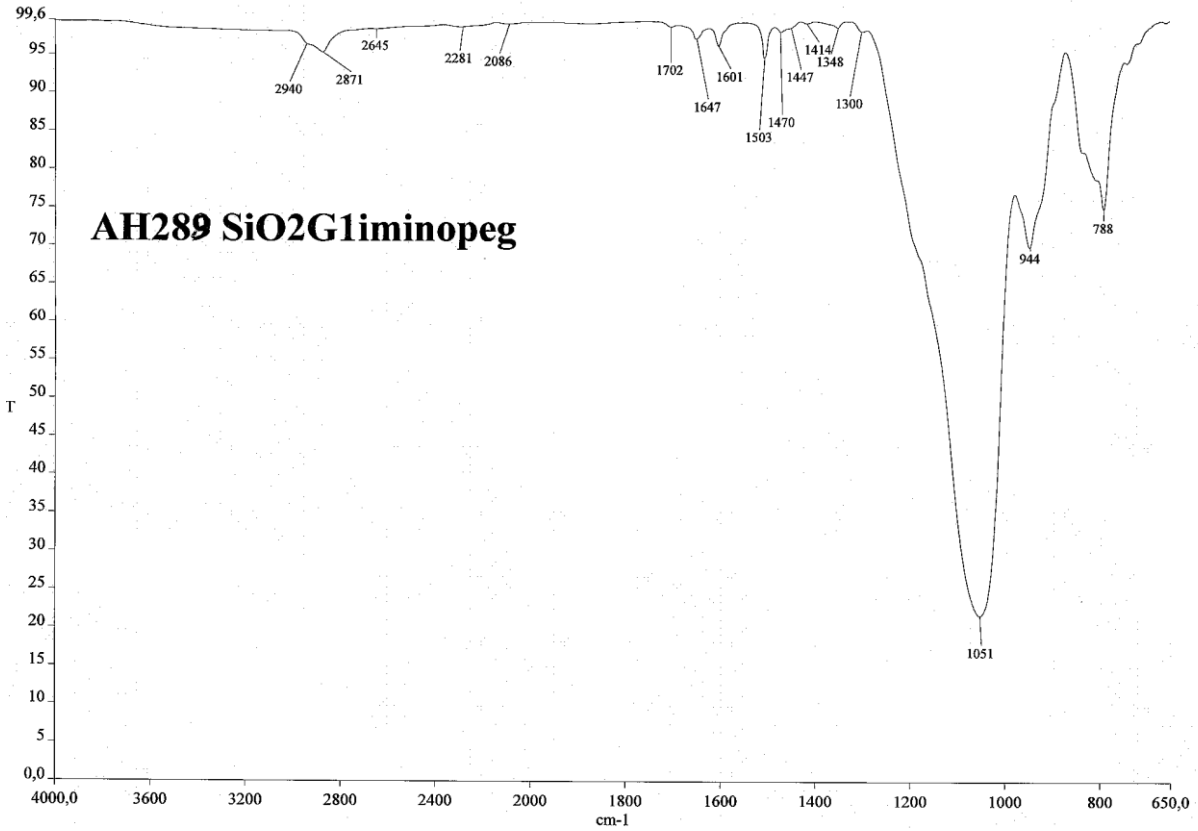
Si-4, ^{13}C CP-MAS NMR



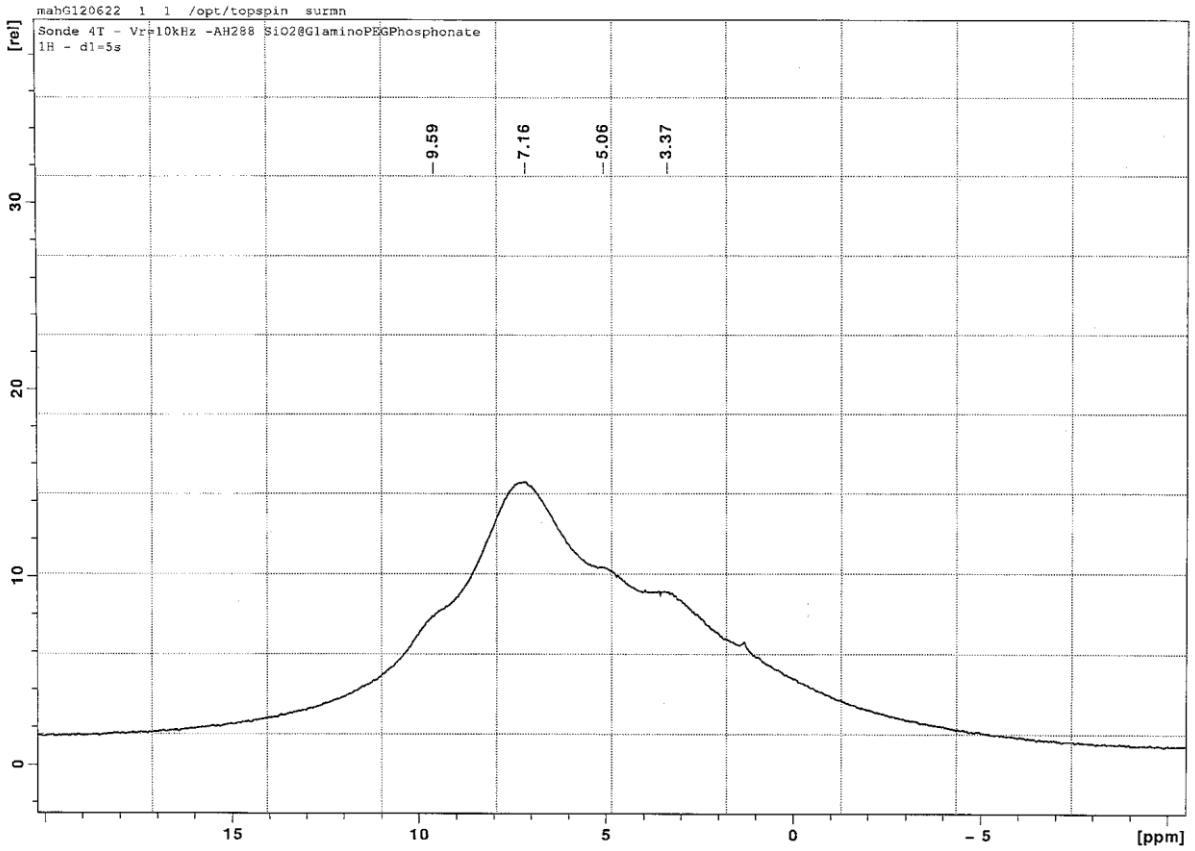
Si-4, ^{29}Si CP-MAS NMR



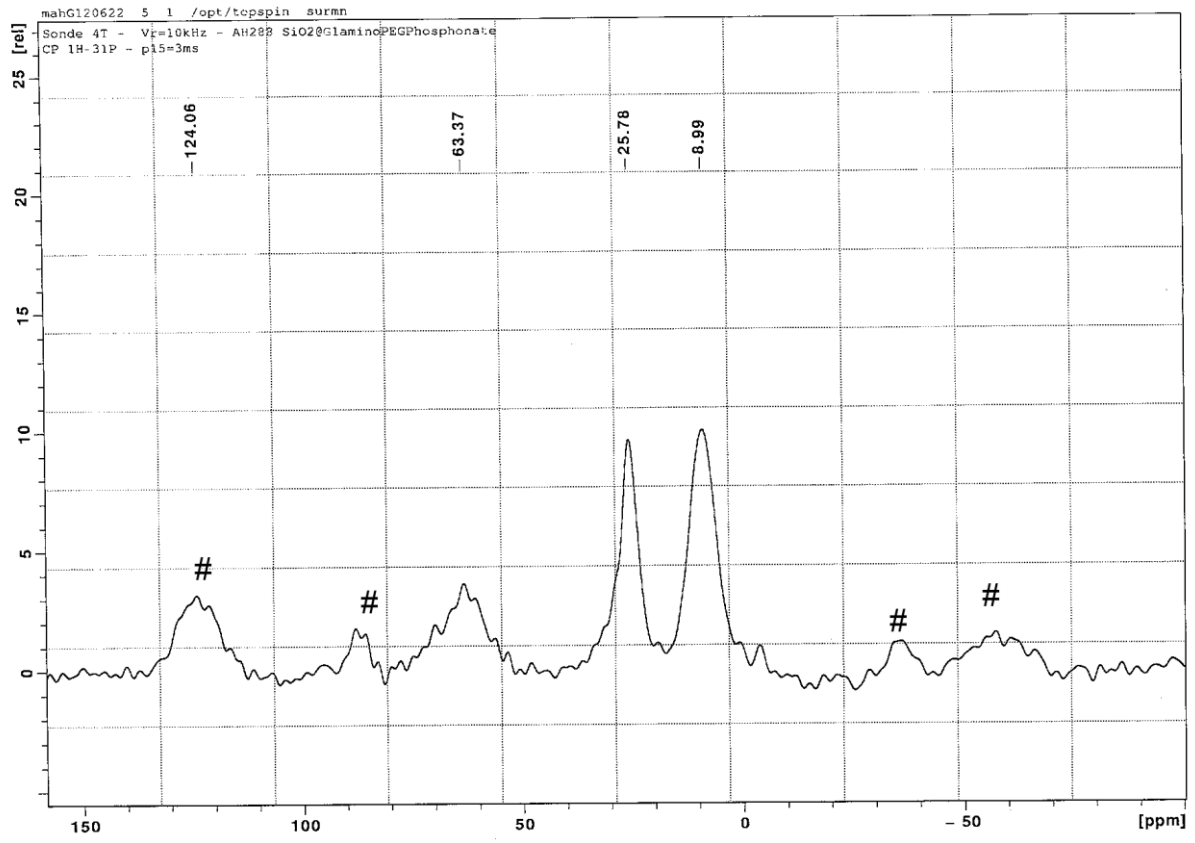
Si-4, FT-IR


AH289 SiO2G1iminopeg
T
cm-1
99,6
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0,0
4000,0
3600
3200
2800
2400
2000
1800
1600
1400
1200
1000
800
650,0
2940
2871
2645
2281
2086
1702
1647
1601
1503
1470
1447
1414
1348
1300
1051
944
788

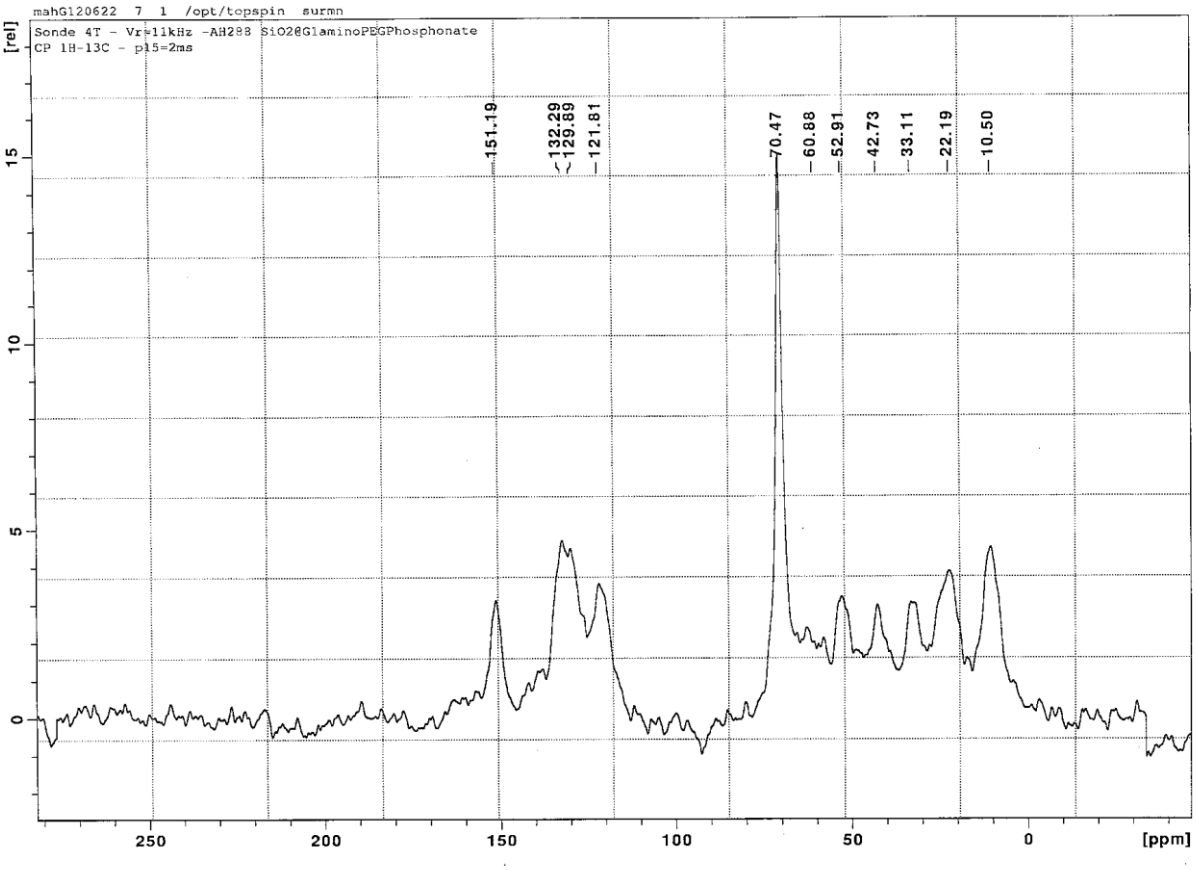
Si-5, ^{1}H CP-MAS NMR



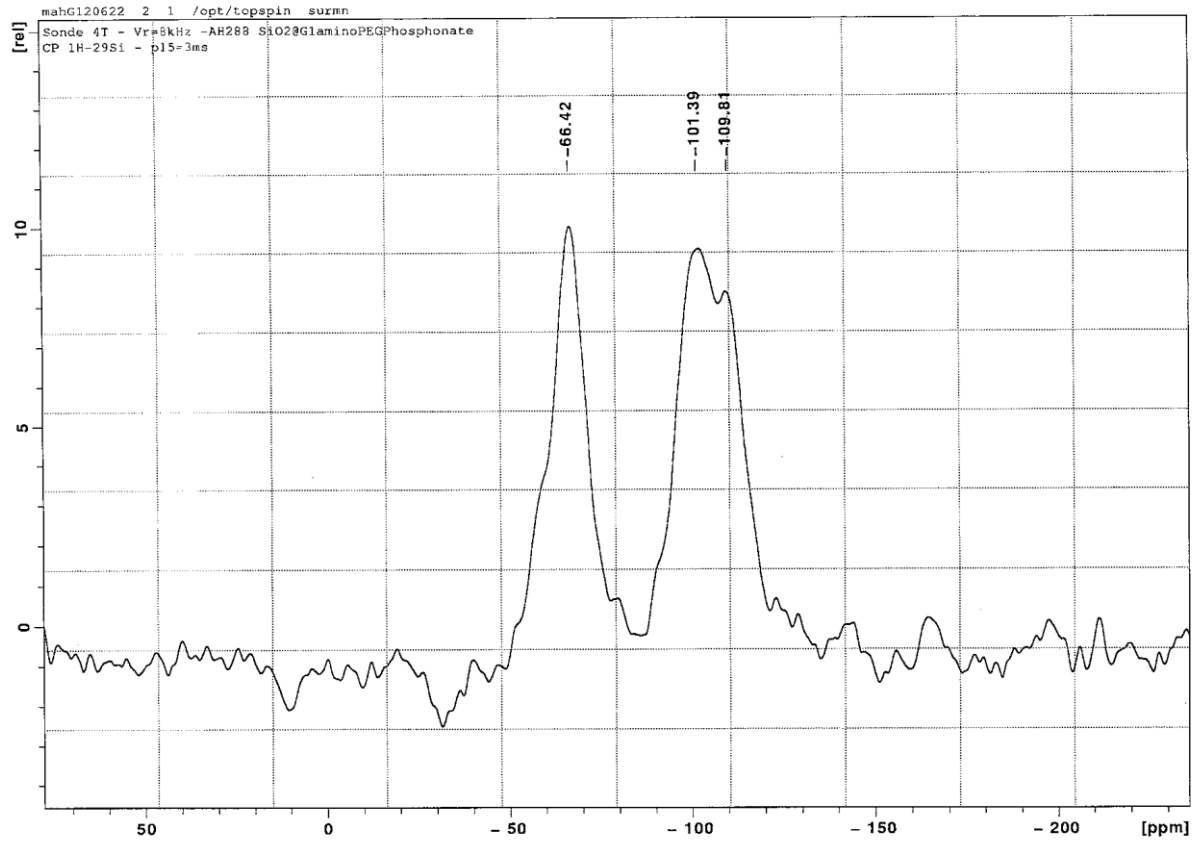
Si-5, ^{31}P CP-MAS NMR



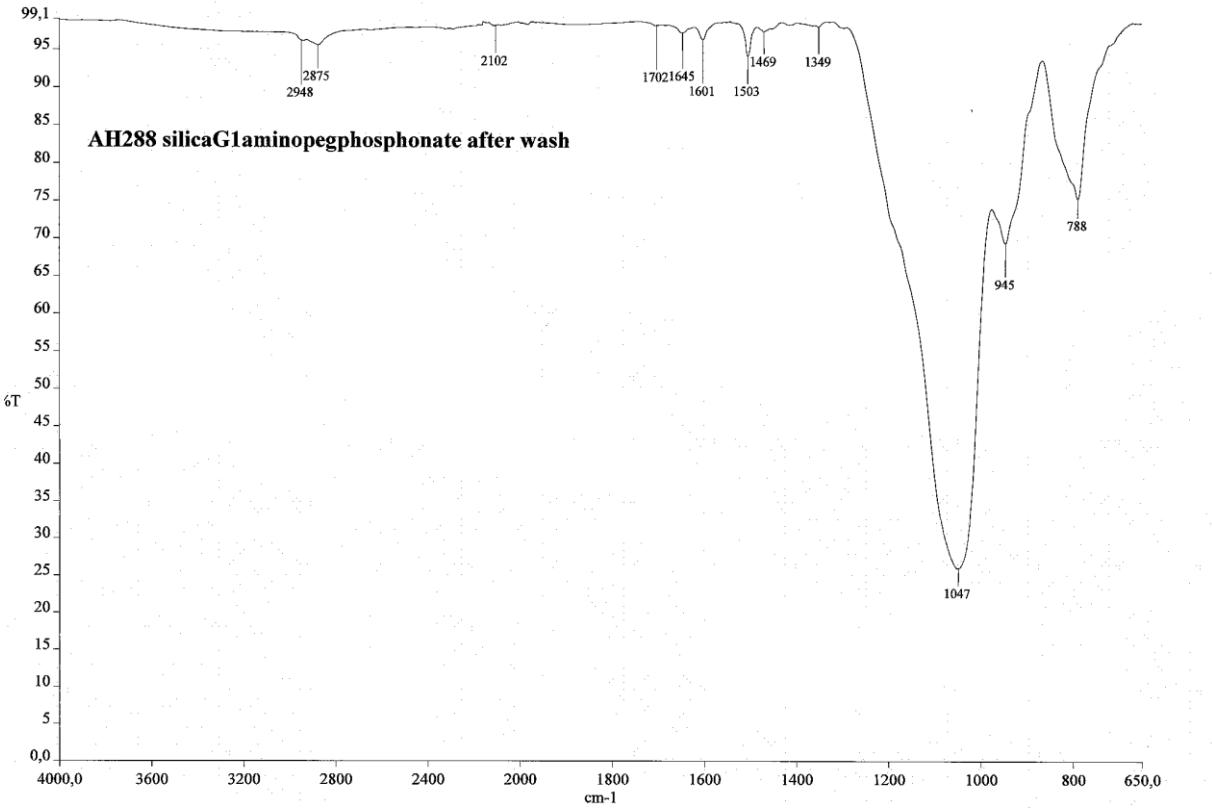
Si-5, ^{13}C CP-MAS NMR



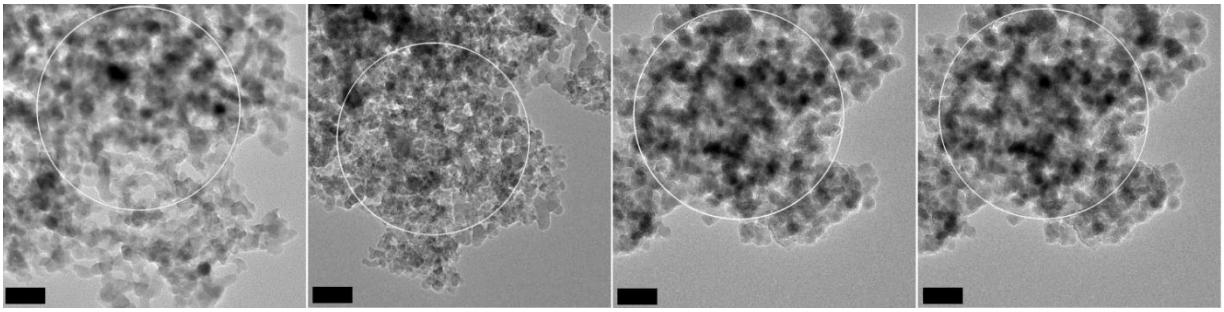
Si-5, ^{29}Si CP-MAS NMR



Si-5, FT-IR

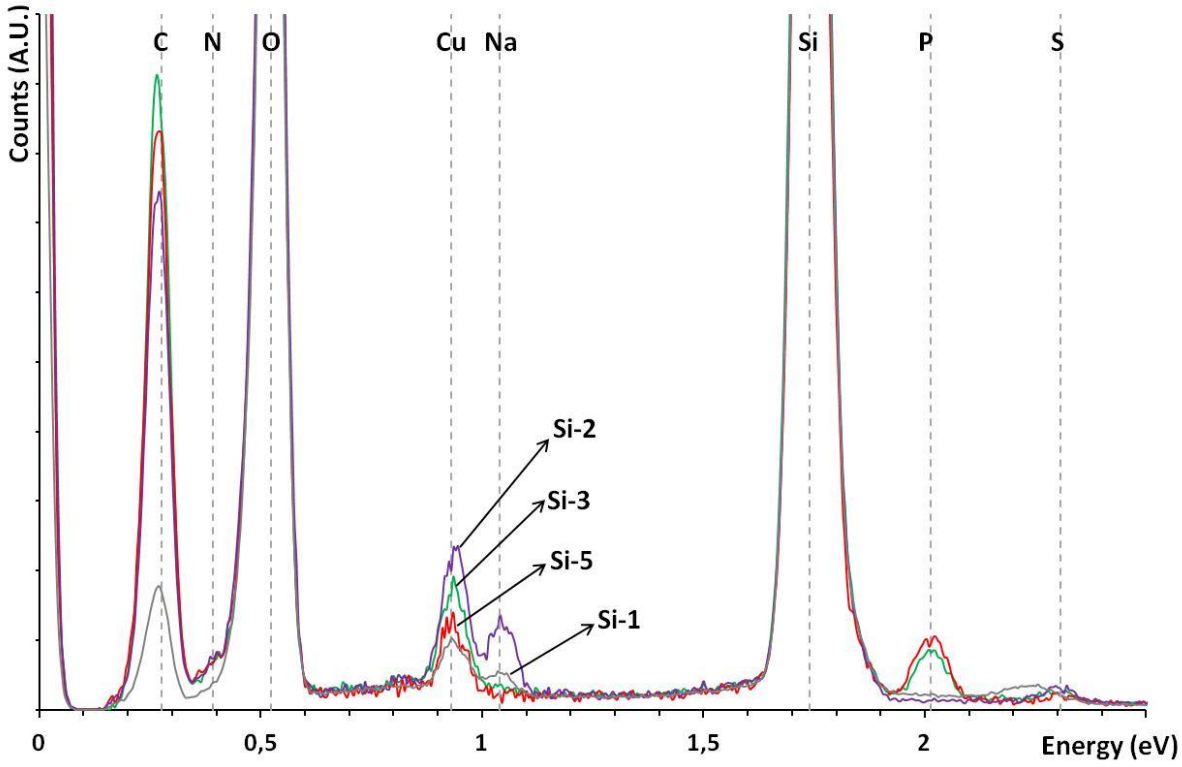


HRTEM imaging and EDX spectroscopy of modified silicas.



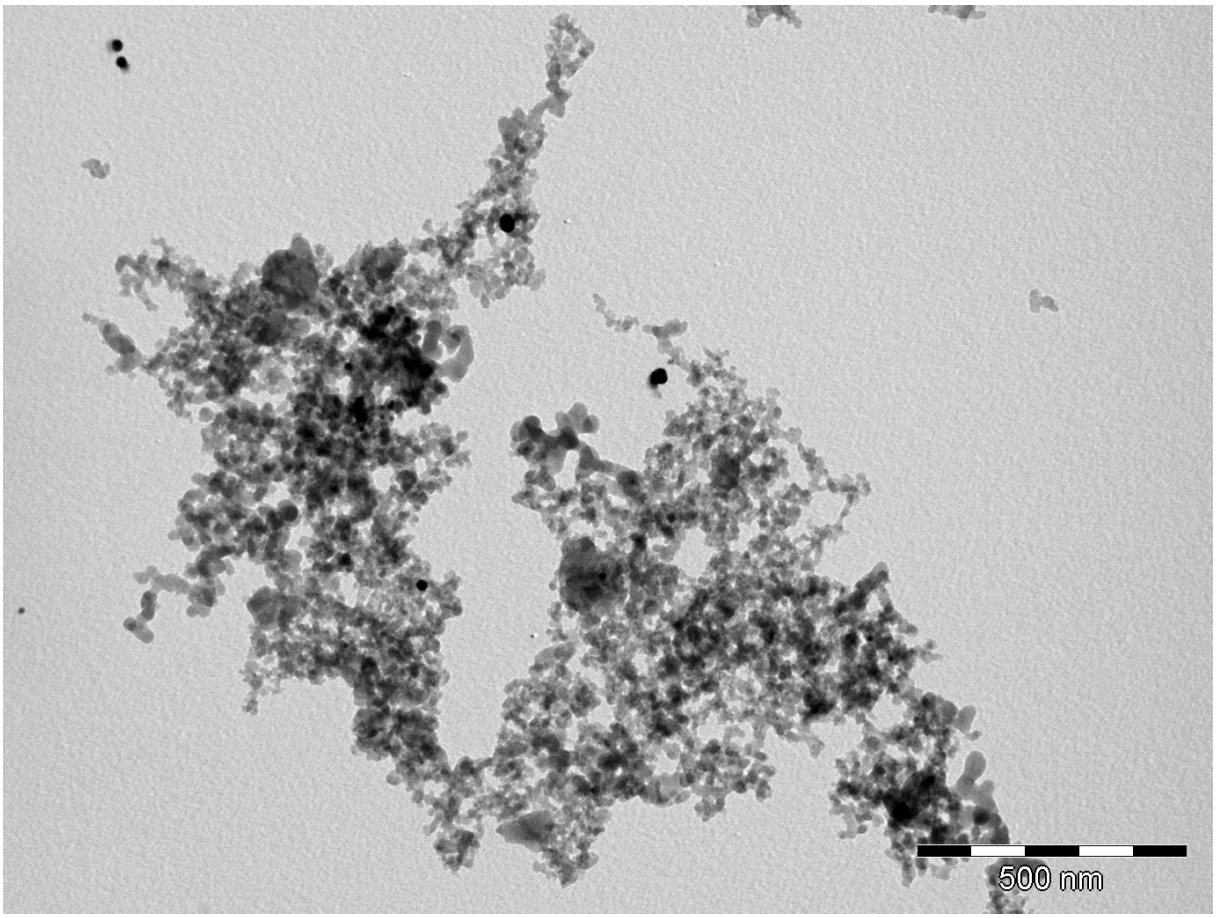
Si-0 Si-2 Si-3 Si-5

Scal bar is 50 nm



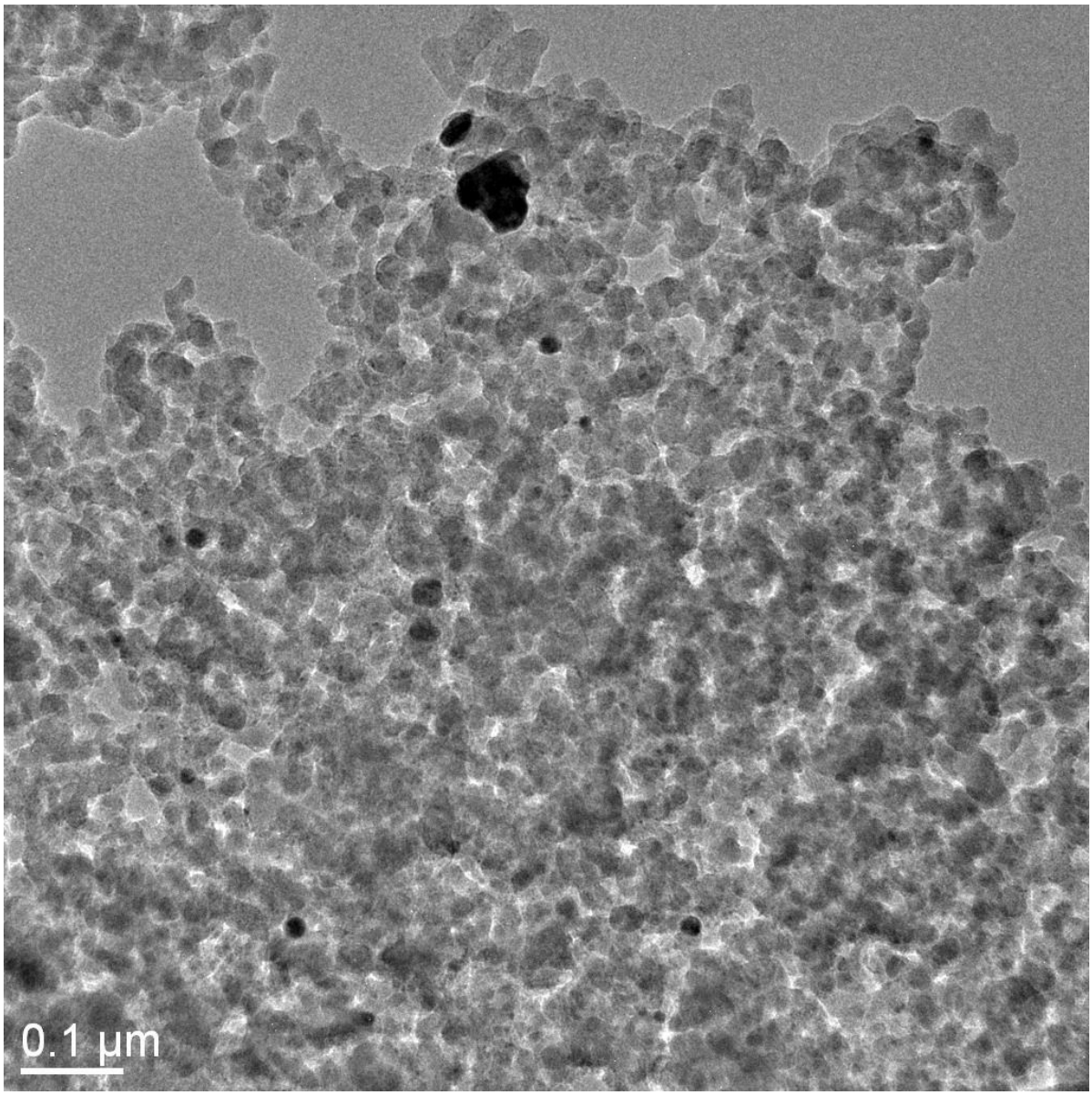
TEM imaging of silver NPs grown on Si-2 modified silica in the absence of reducing agent (14days).

Picture shot at d = 14 days



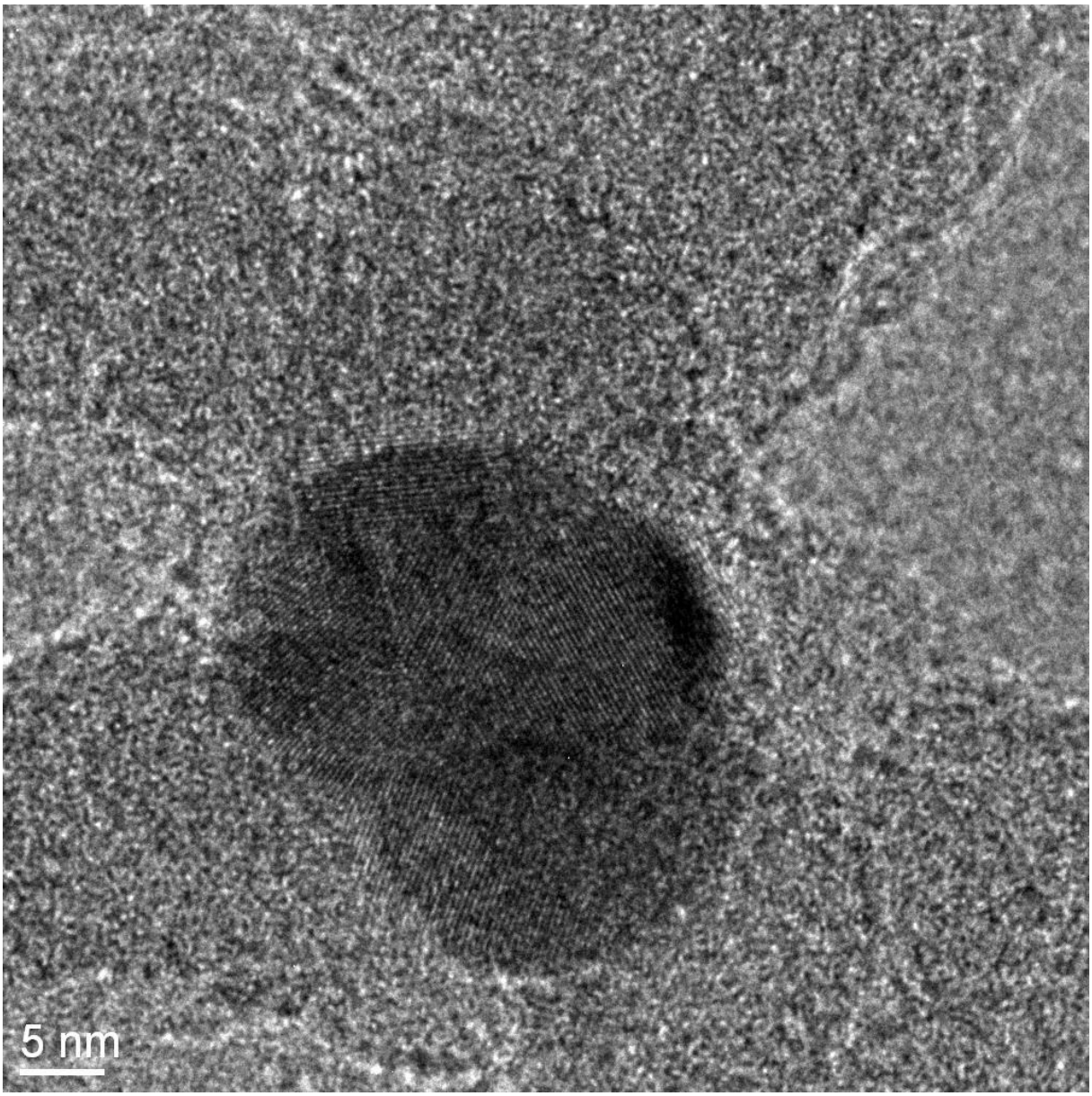
HRTEM imaging of silver NPs grown on Si-3 modified silica in the absence of reducing agent (14days).

Picture shot at d = 14 days



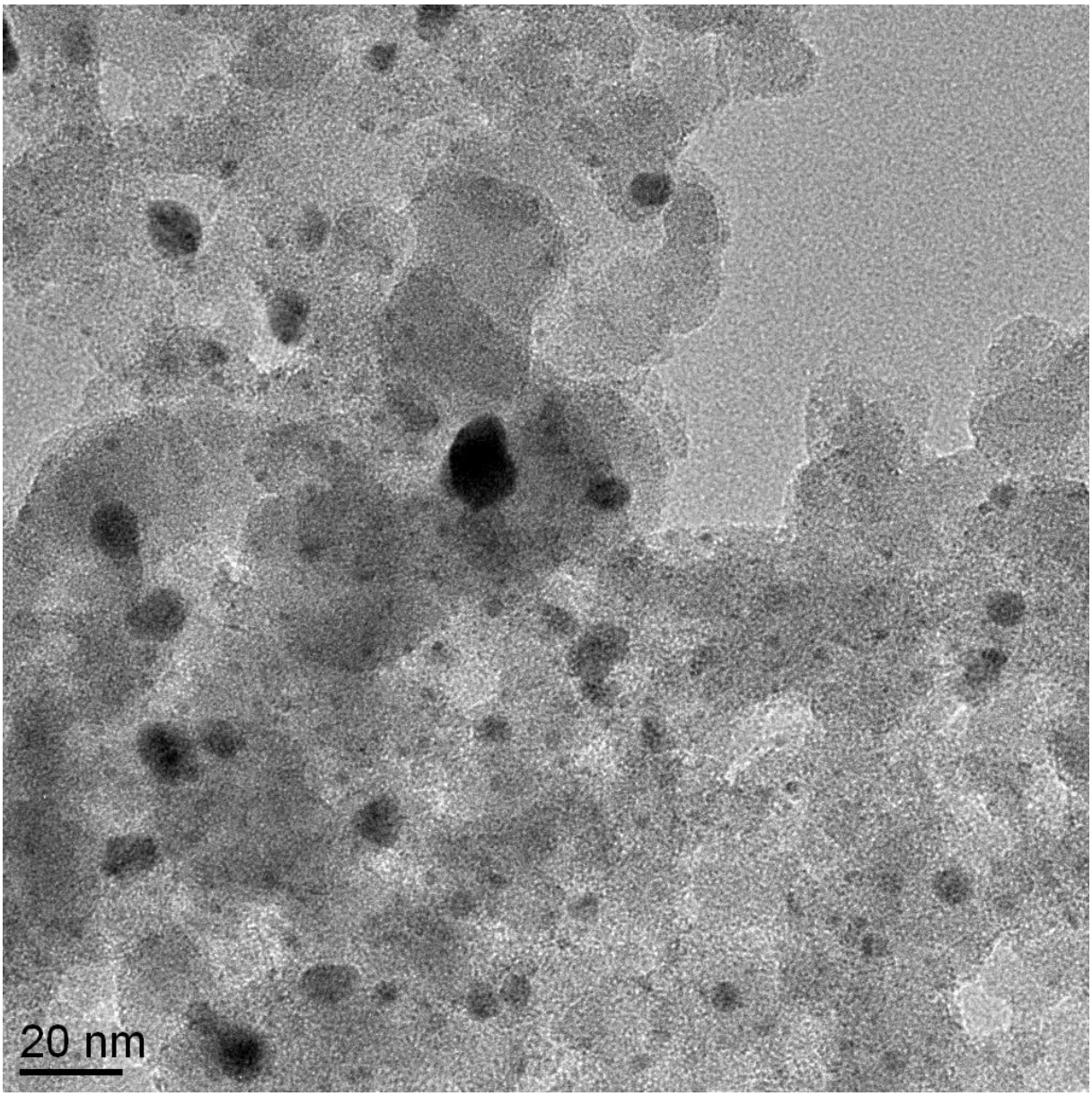
HRTEM imaging of silver NPs grown on Si-3 modified silica in the absence of reducing agent (14days).

Picture shot at d = 14 days



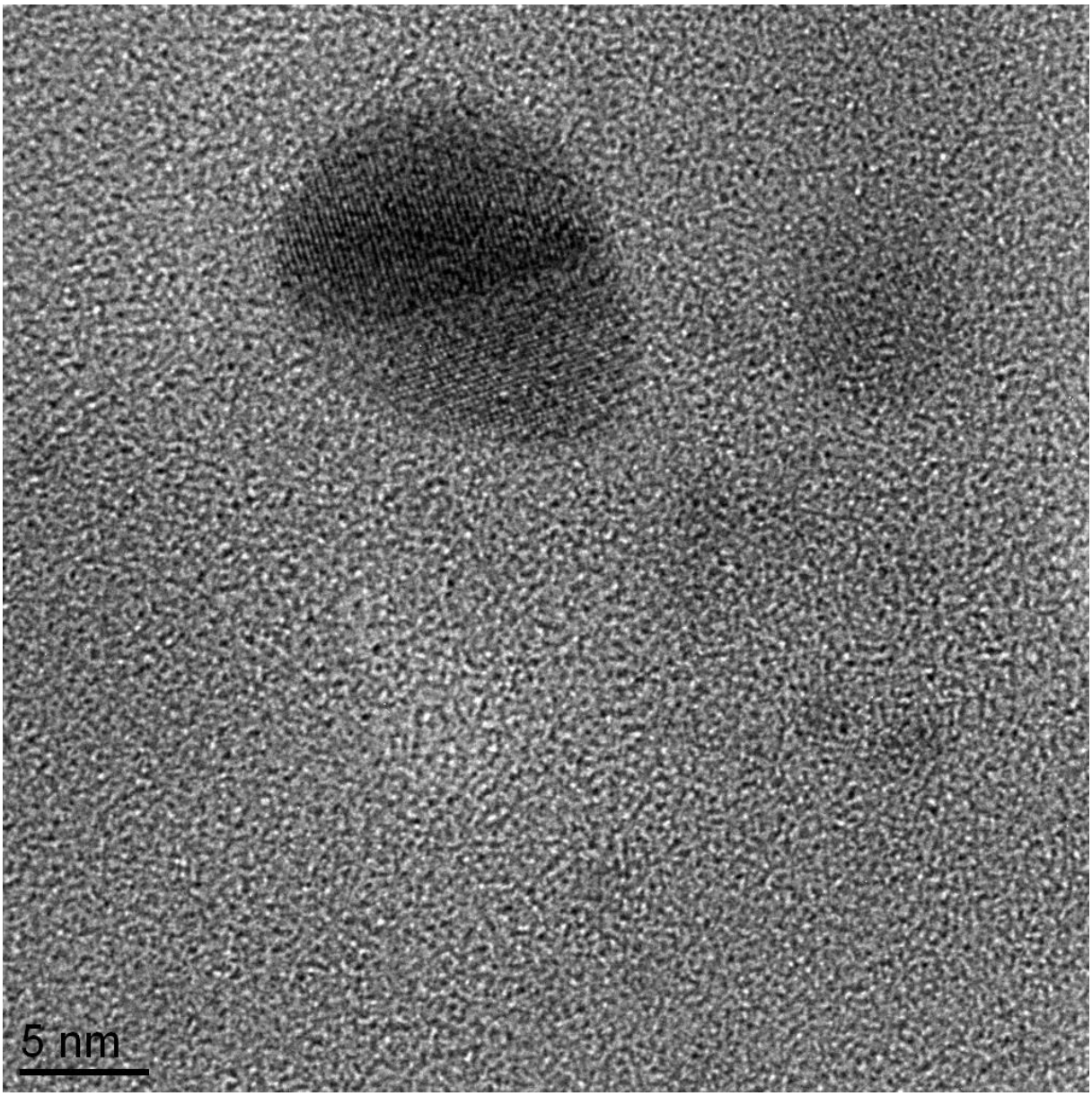
HRTEM imaging of silver NPs grown on Si-5 modified silica in the absence of reducing agent (14days).

Picture shot at d = 14 days



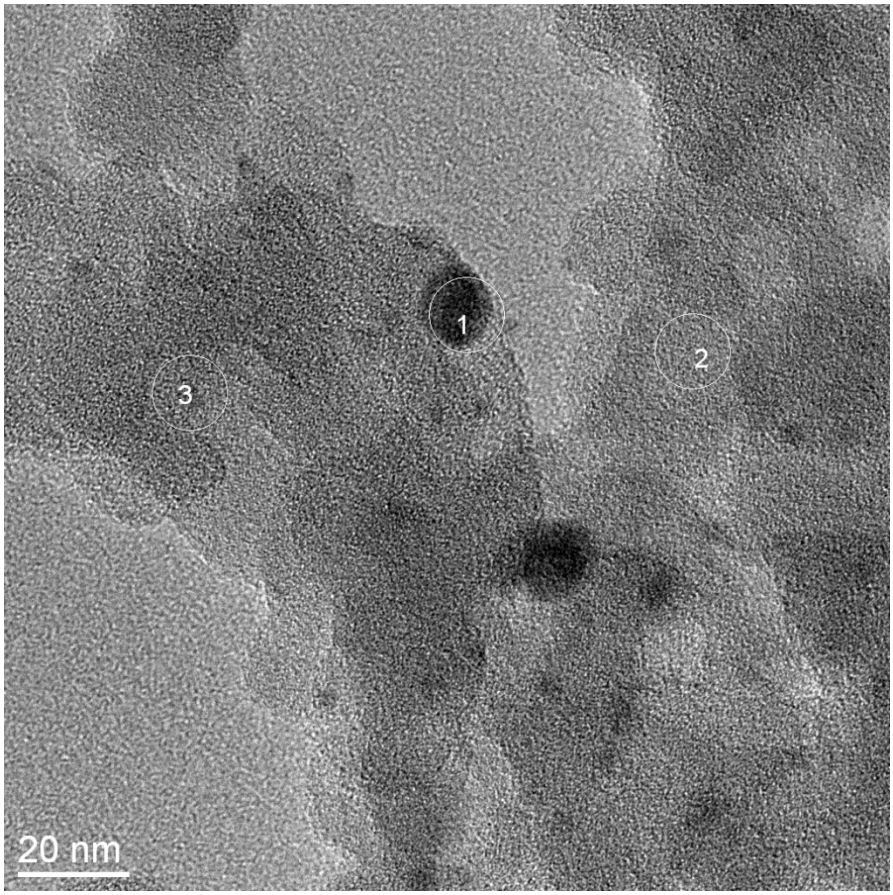
HRTEM imaging of silver NPs grown on Si-5 modified silica in the absence of reducing **agent** (14 days, 2/2).

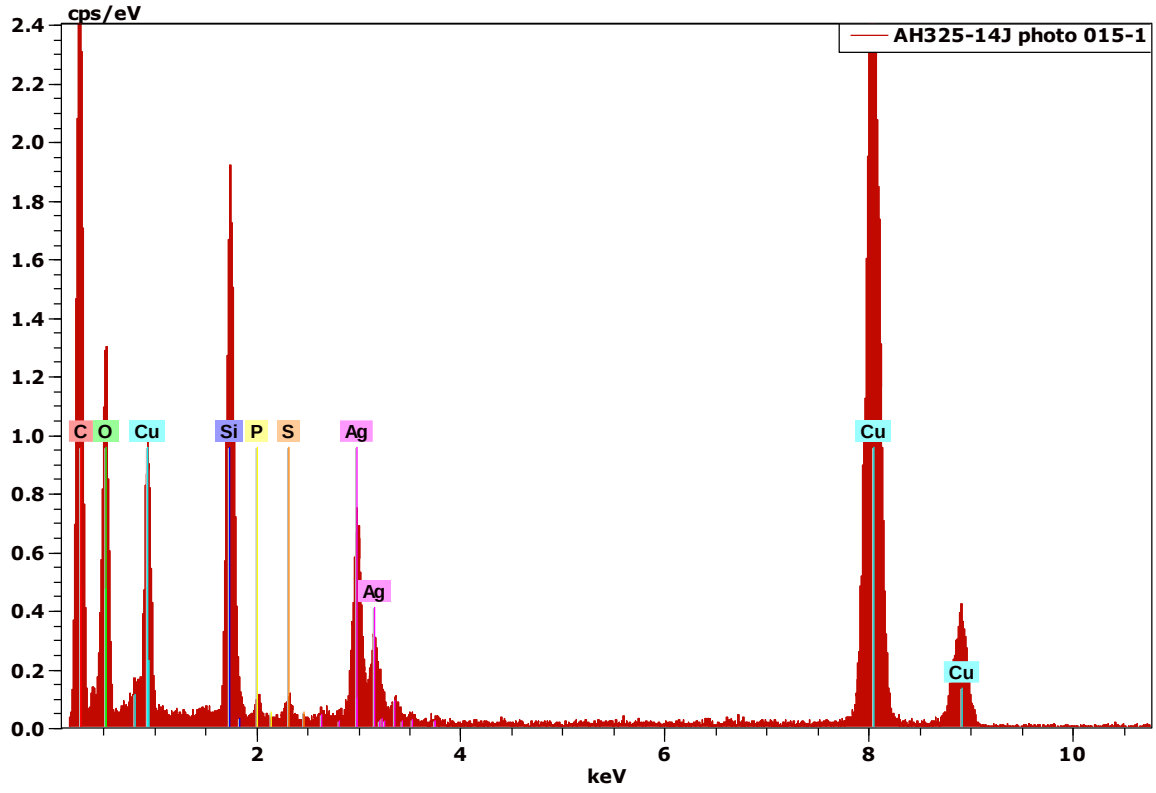
Picture shot at d = 14 days

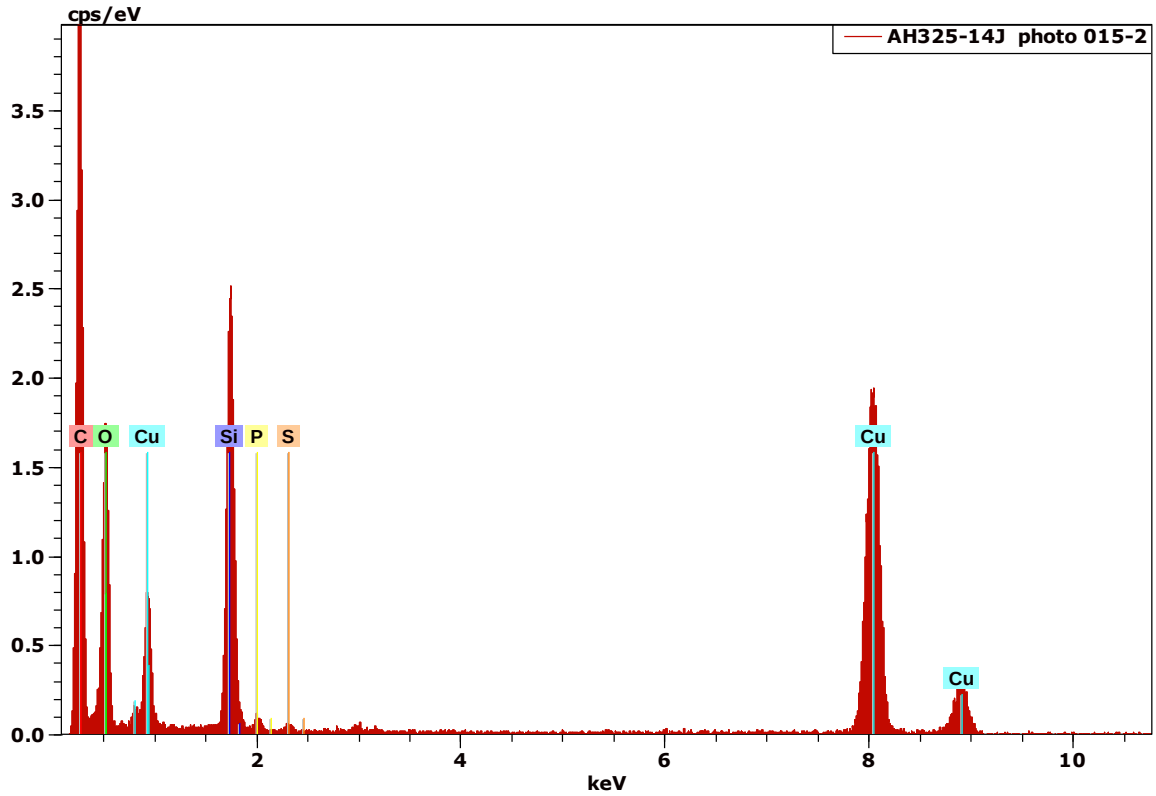


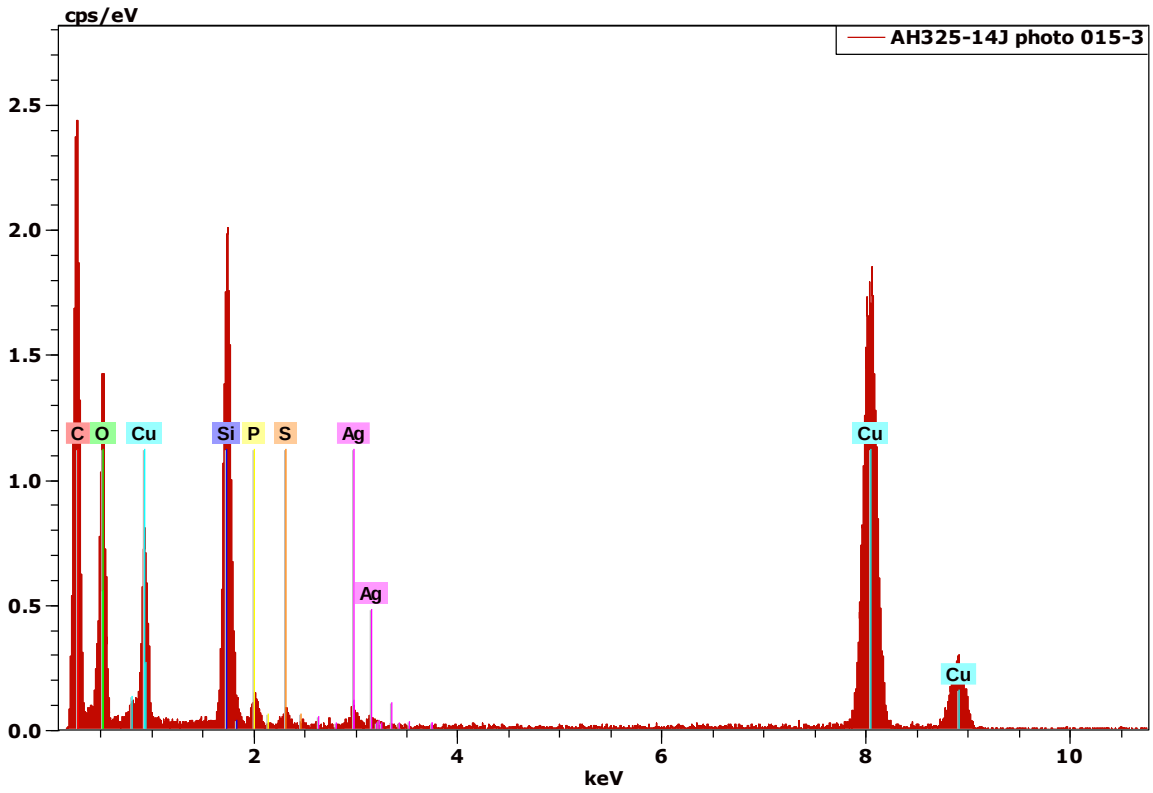
EDX spectroscopy of silver NPs grown on Si-3 modified silica in the absence of reducing agent.

At t= 18 hours



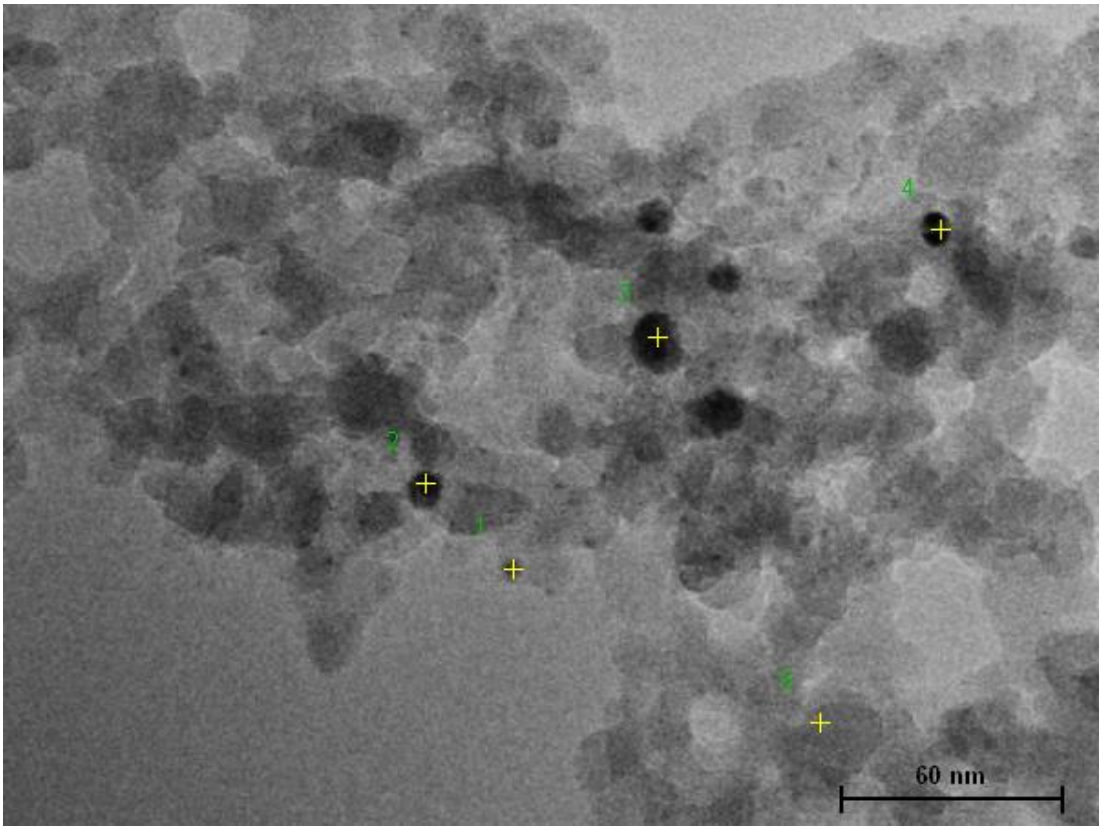


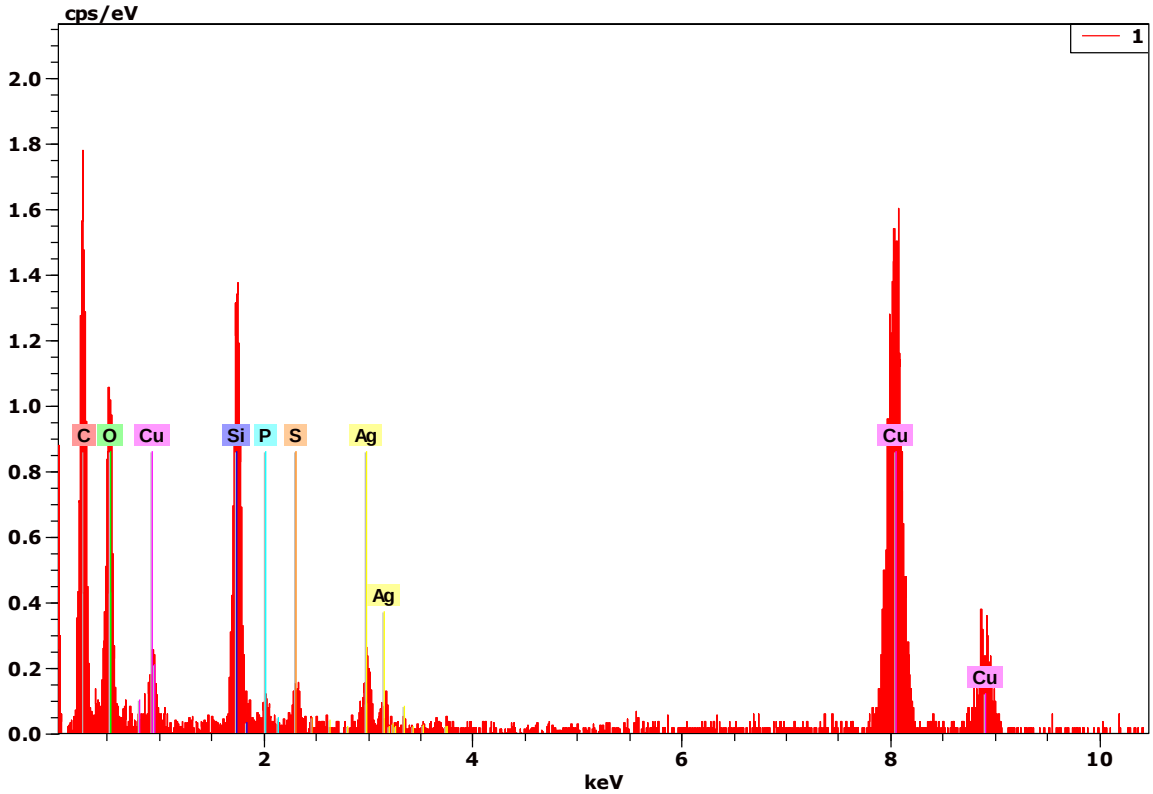


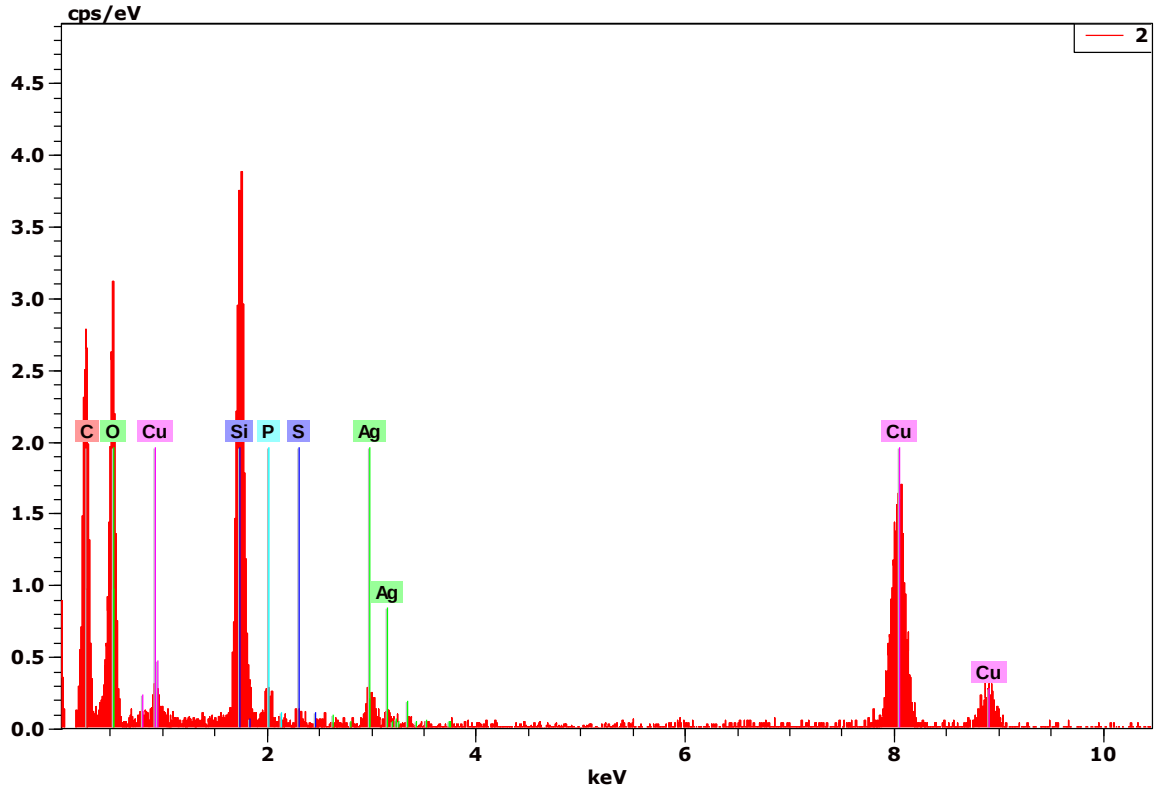


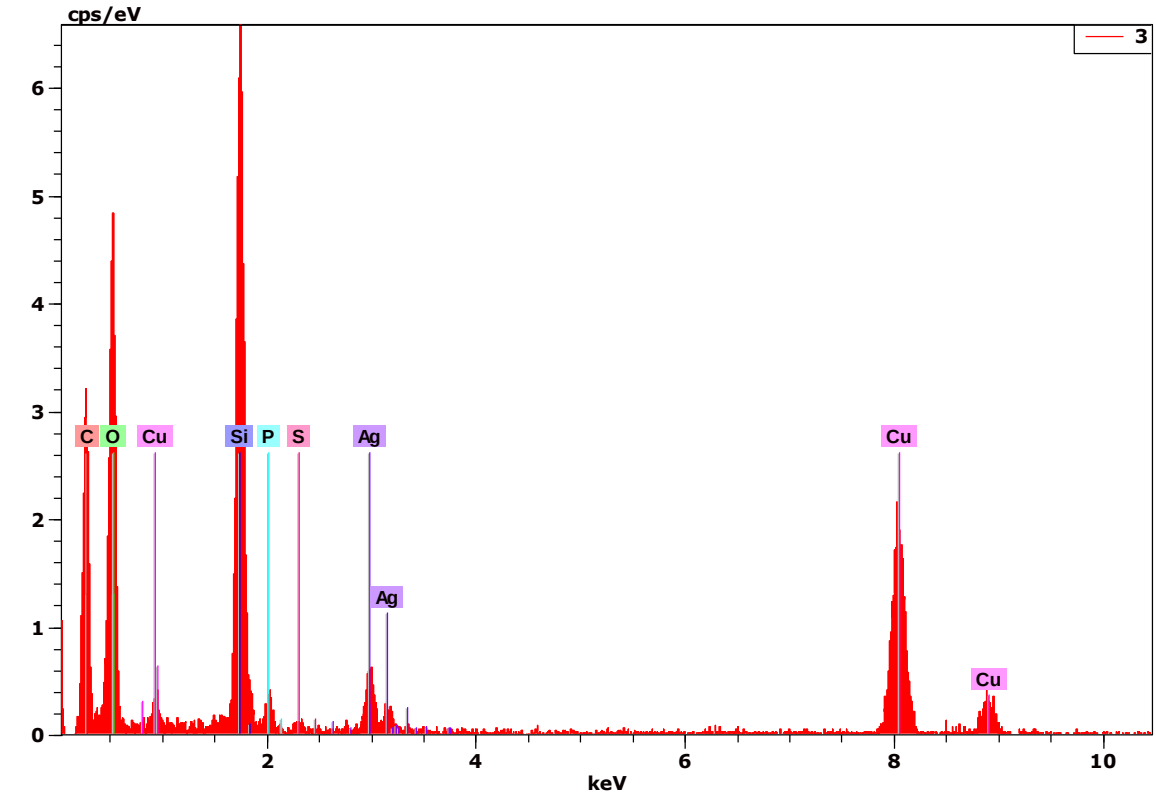
EDX spectroscopy of silver NPs grown on Si-5 modified silica in the absence of reducing agent.

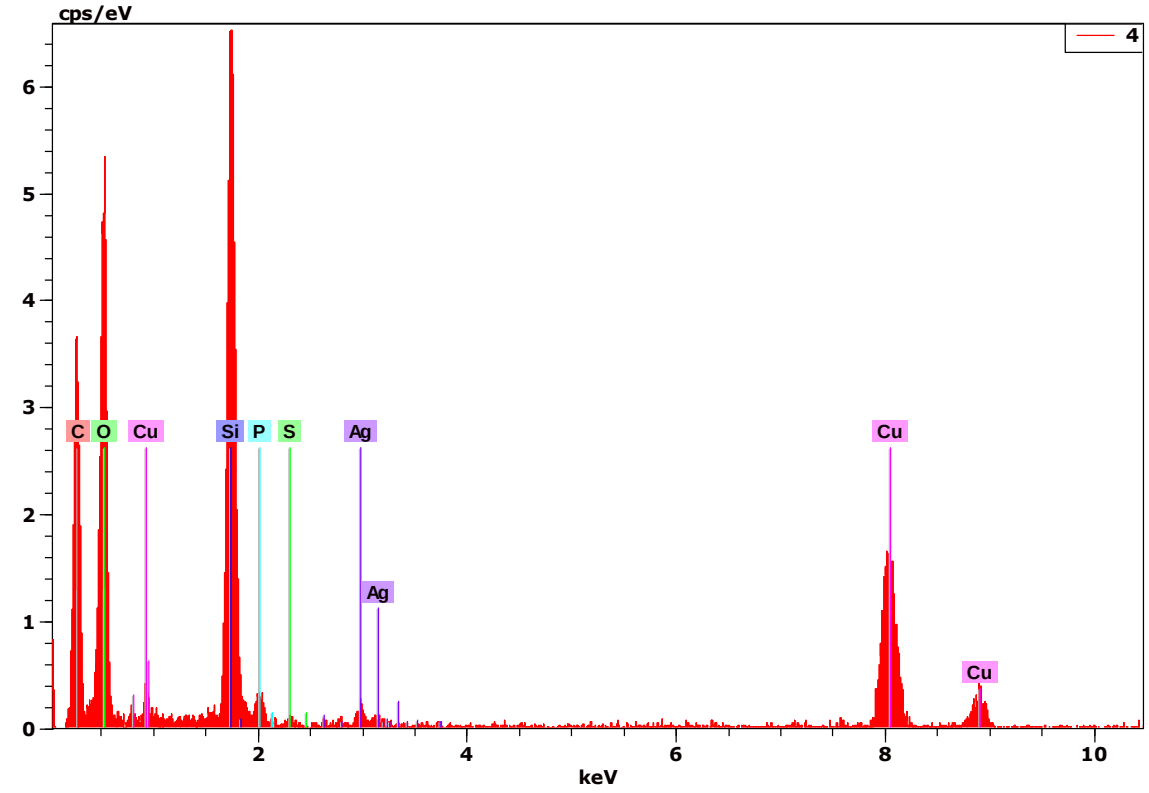
At t= 18 hours

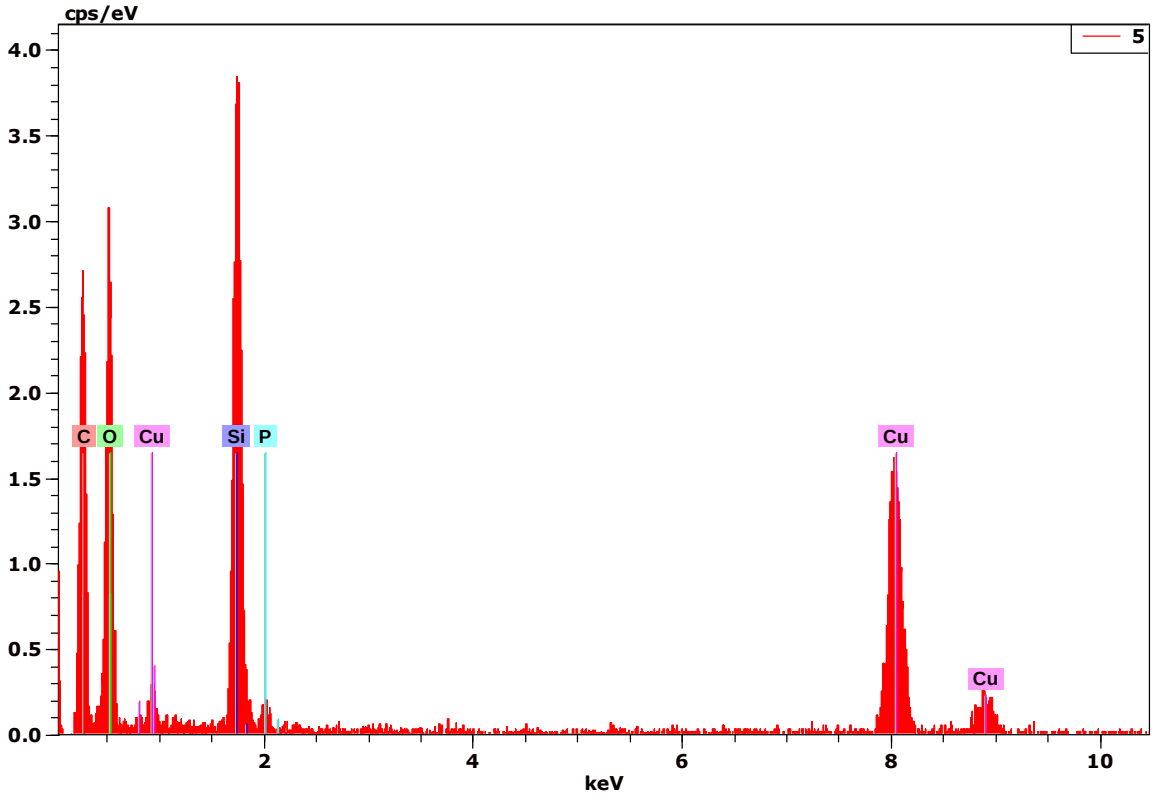






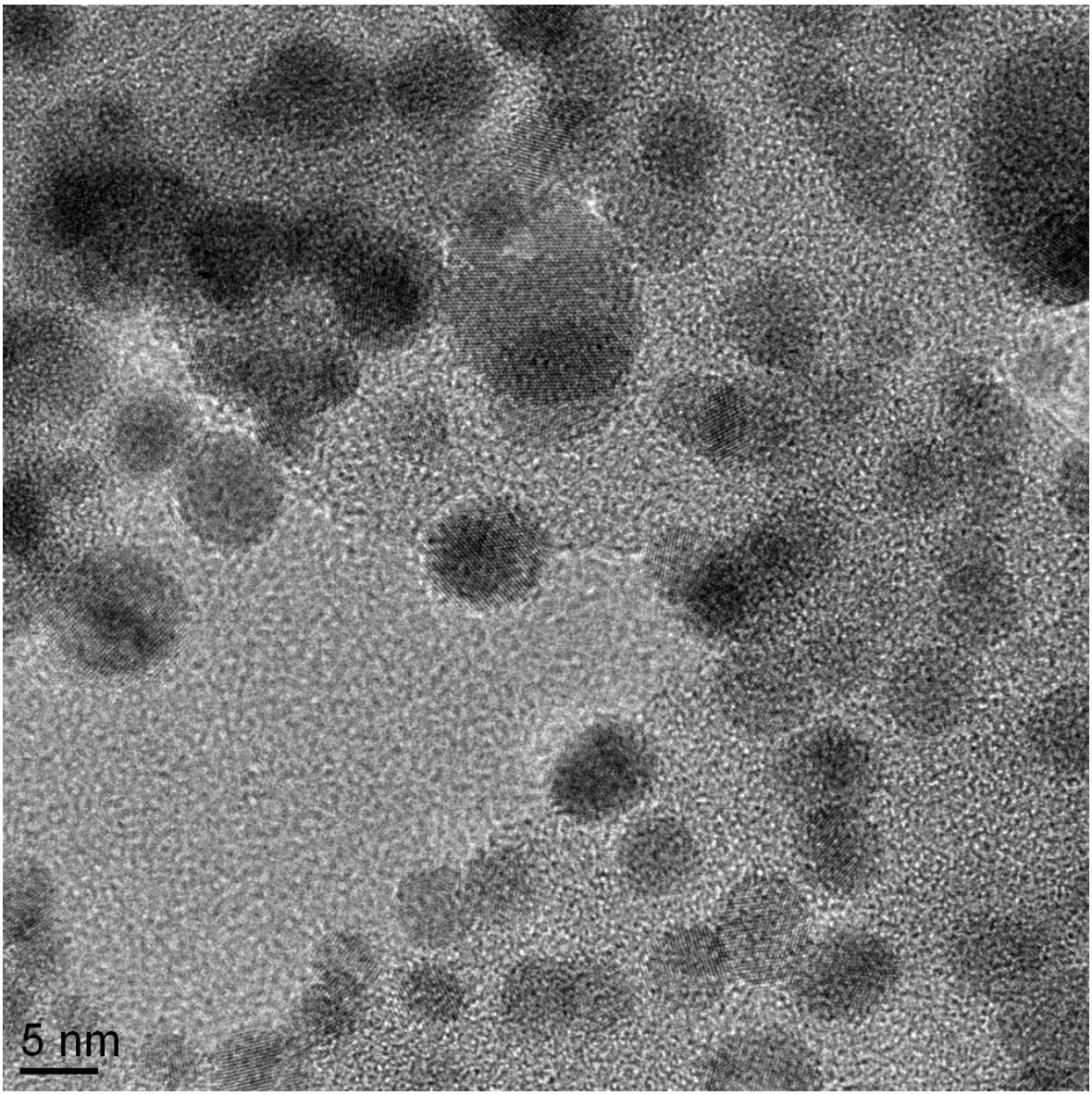






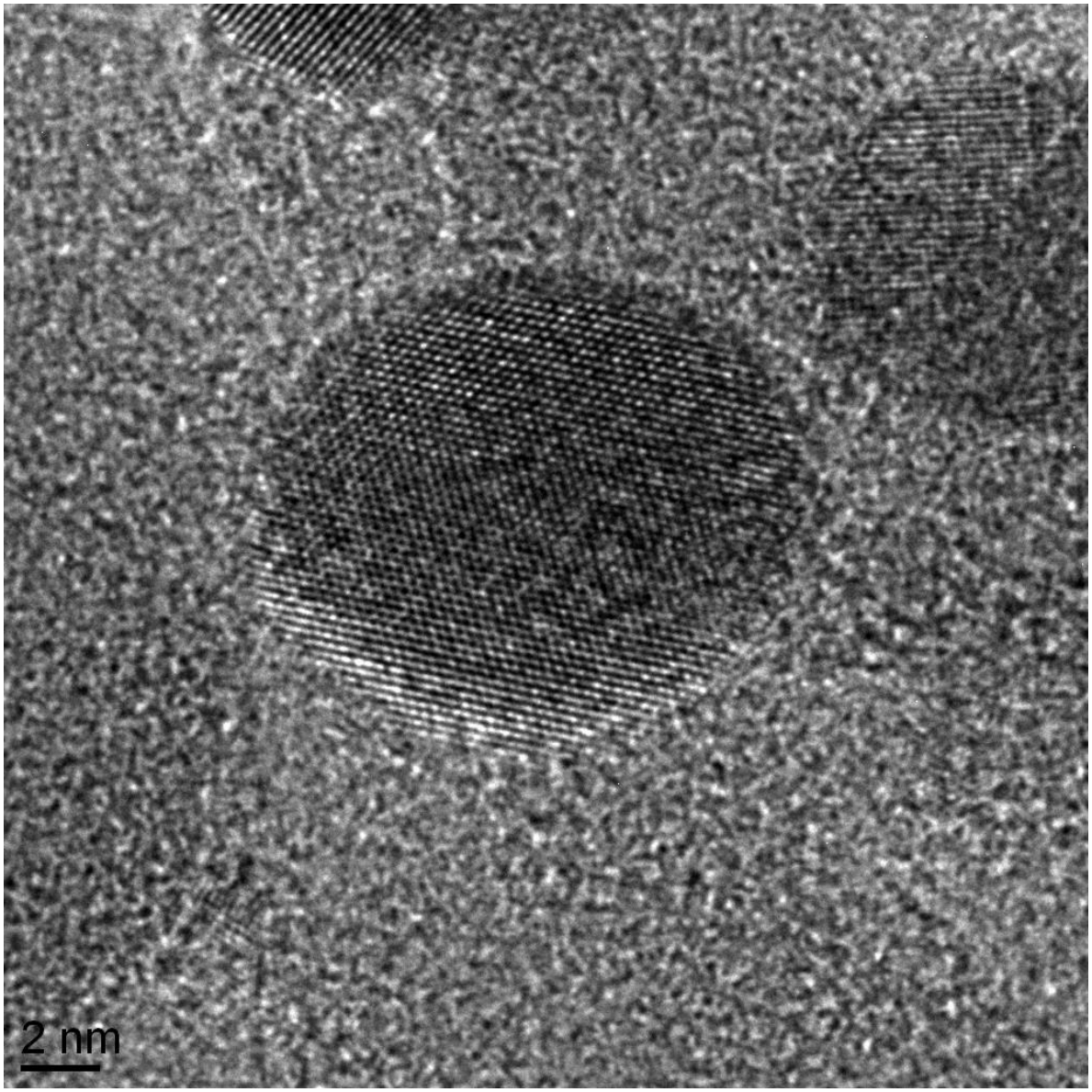
HRTEM imaging of silver NPs grown on Si-2 modified silica in the presence of $NaBH_4$ (18 hours)

(picture shot at T = 18 hours)

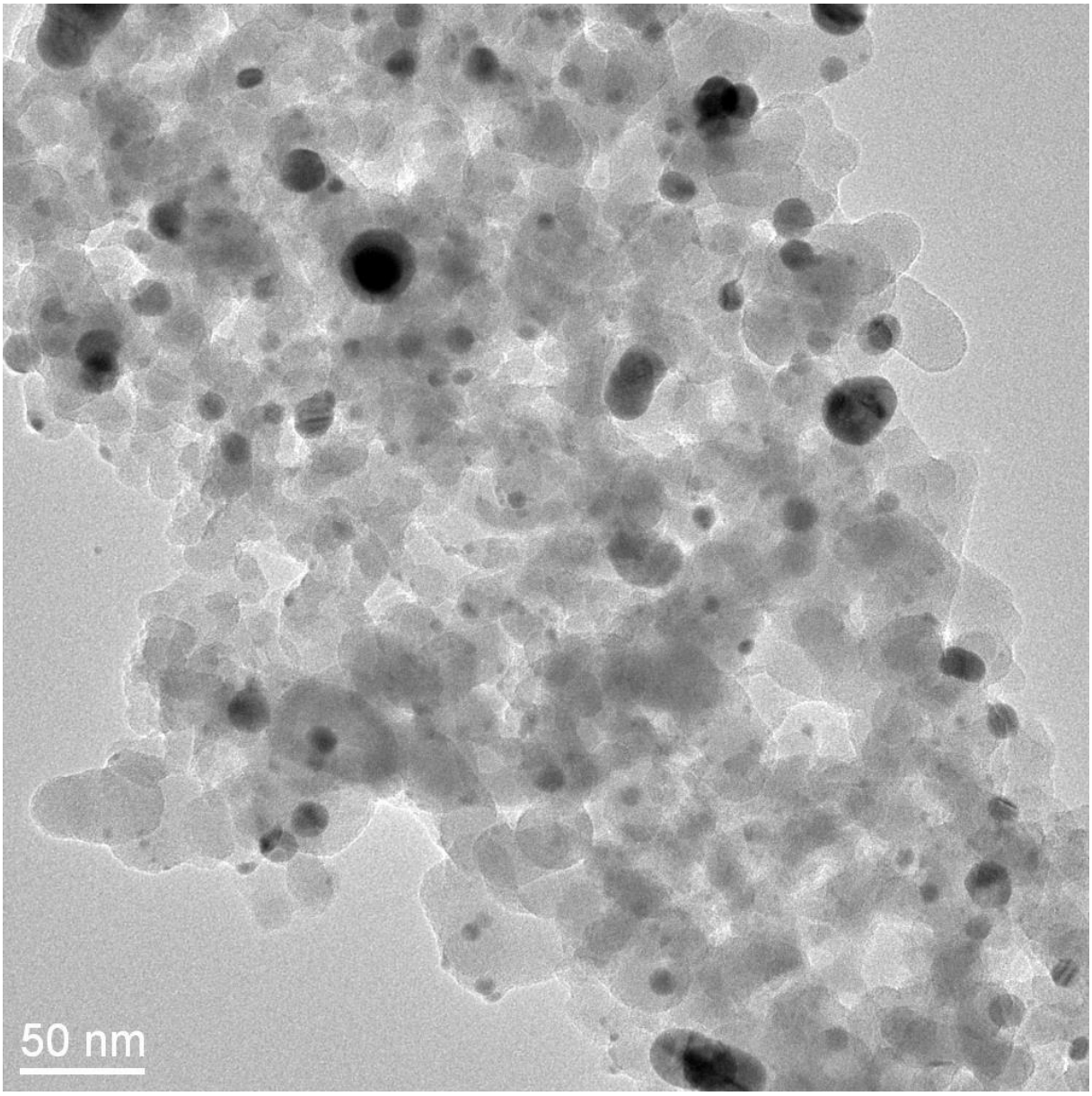


HRTEM imaging of silver NPs grown on Si-2 modified silica in the presence of $NaBH_4$.

(picture shot at T = 18 hours)

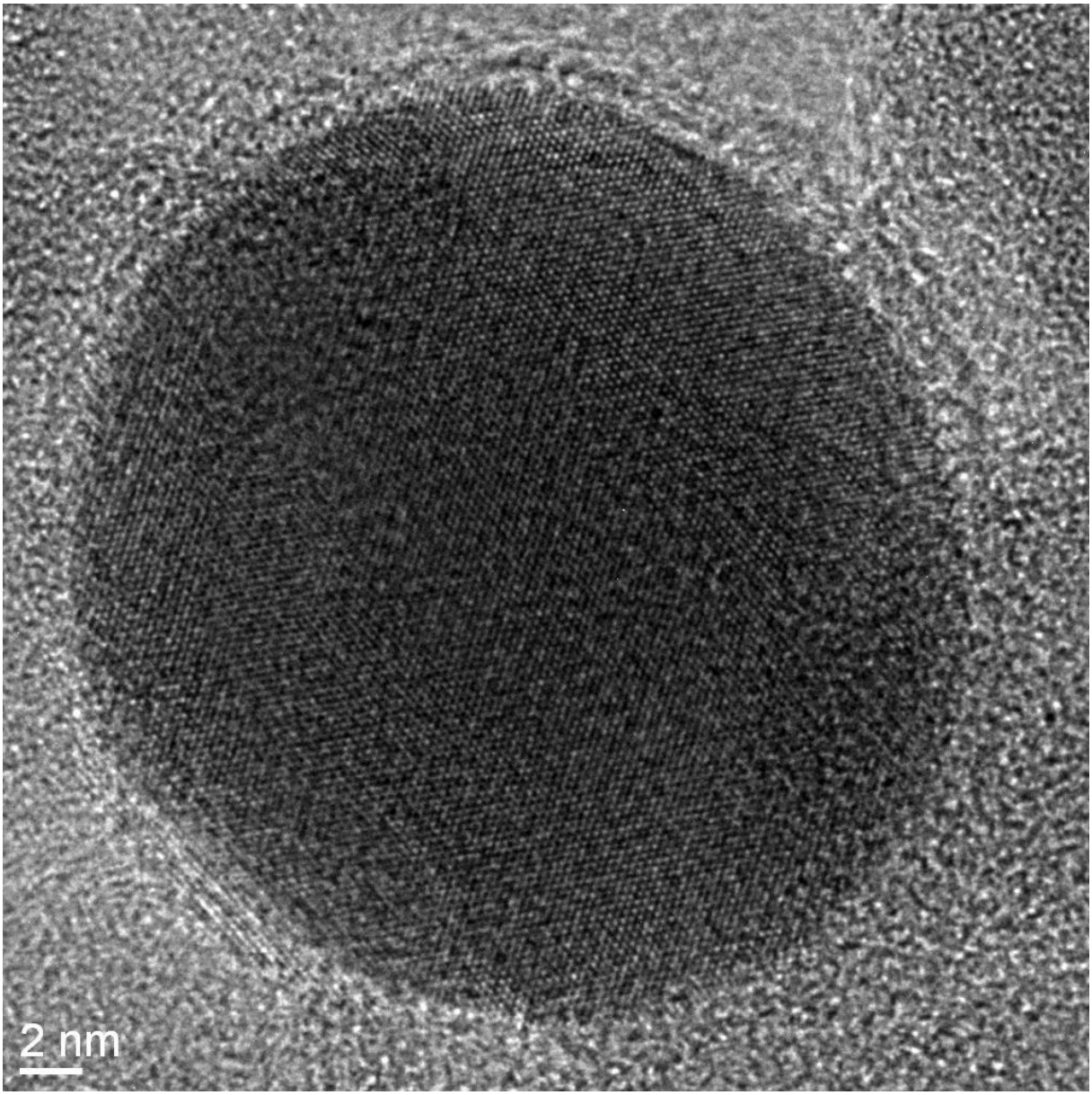


HRTEM imaging of silver NPs grown on Si-5 modified silica in the presence of $NaBH_4$ (1 hour)



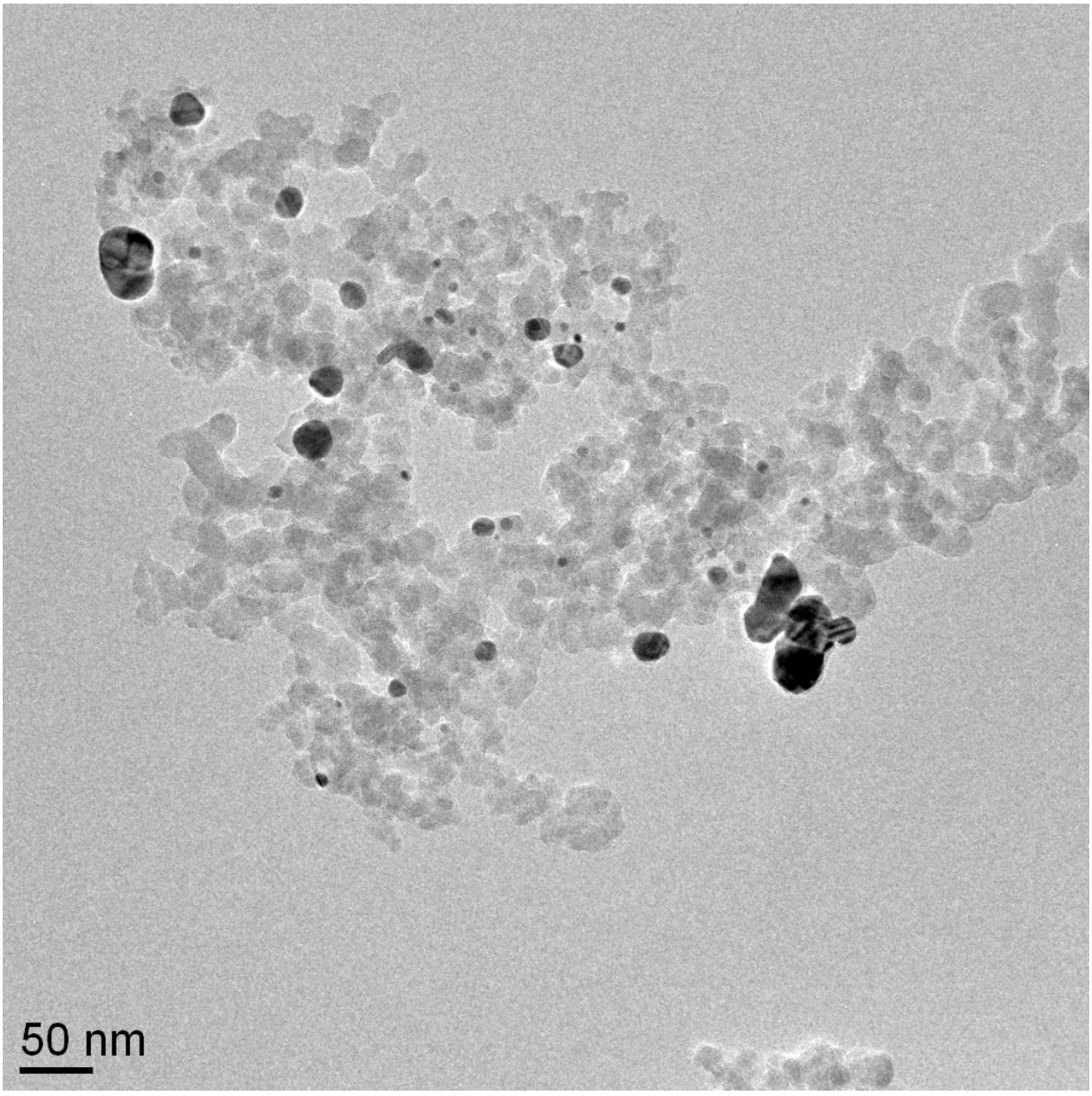
HRTEM imaging of silver NPs grown on Si-5 modified silica in the presence of $NaBH_4$.

(picture shot at T = 1 hour)



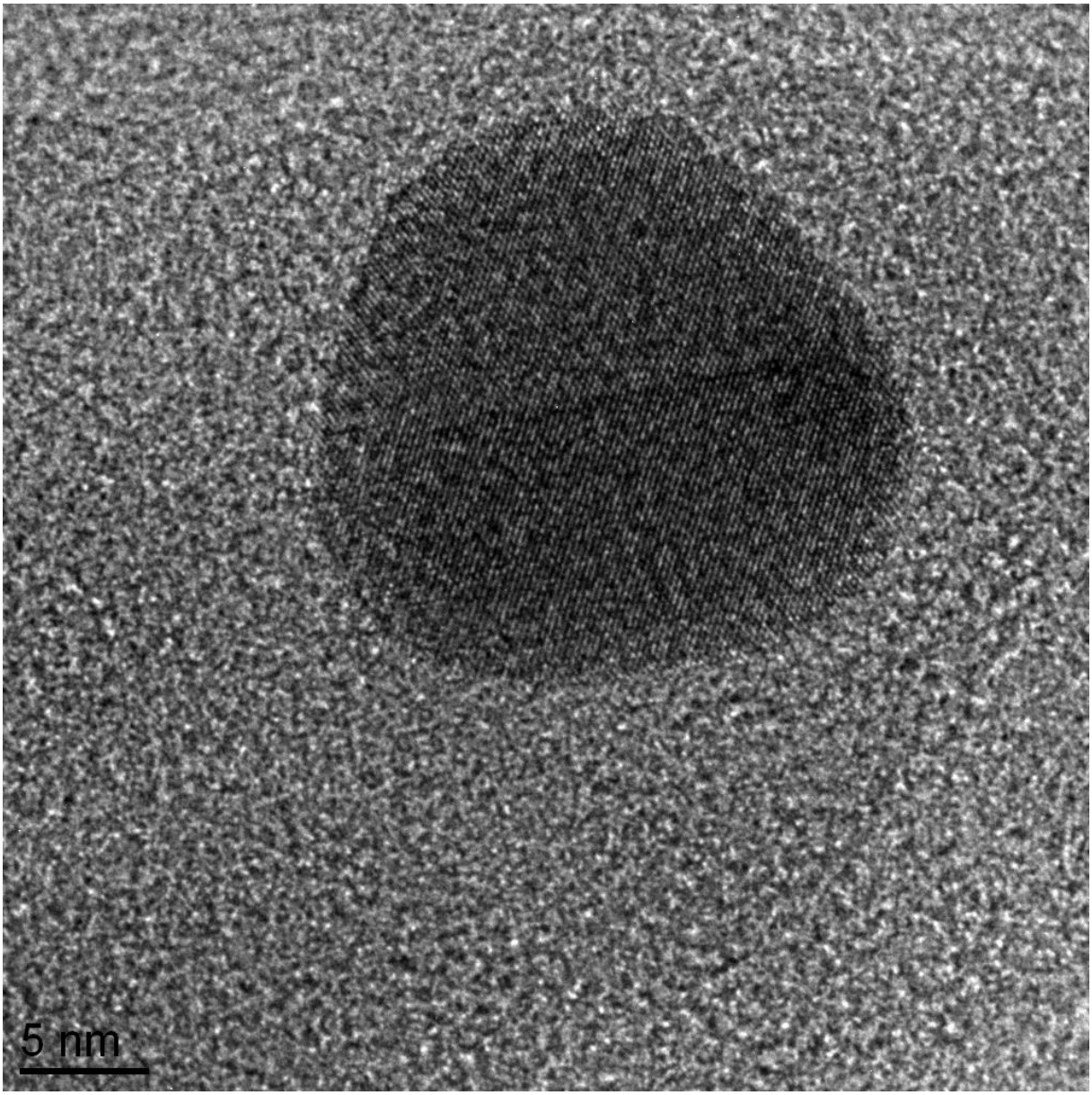
HRTEM imaging of silver NPs grown on Si-5 modified silica in the presence of $NaBH_4$ (18 hours)

(picture shot à T = 18 hours)



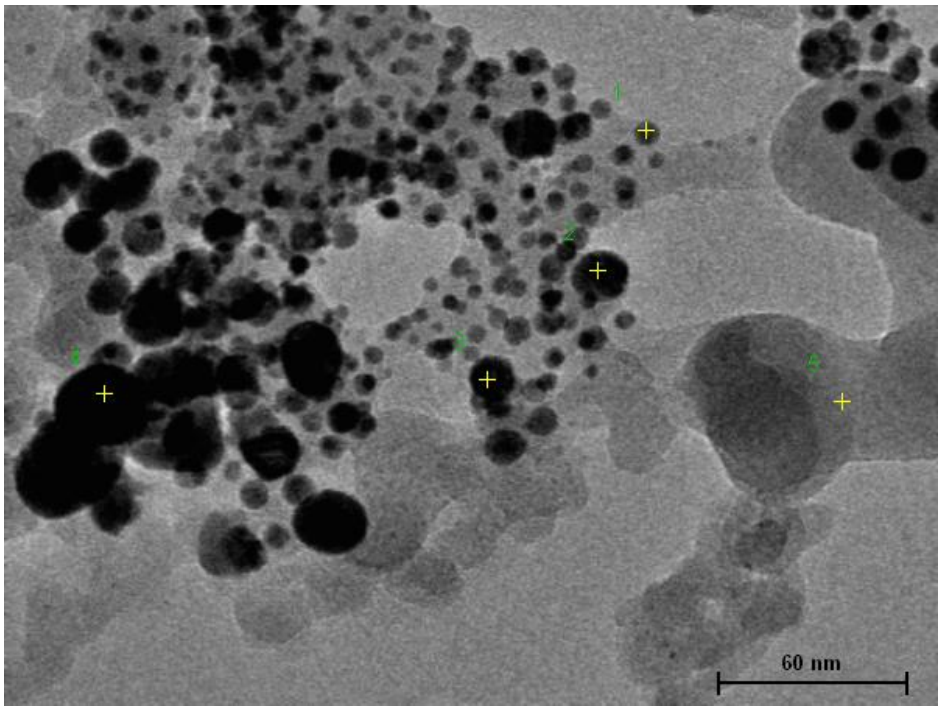
HRTEM imaging of silver NPs grown on Si-5 modified silica in the presence of $NaBH_4$.

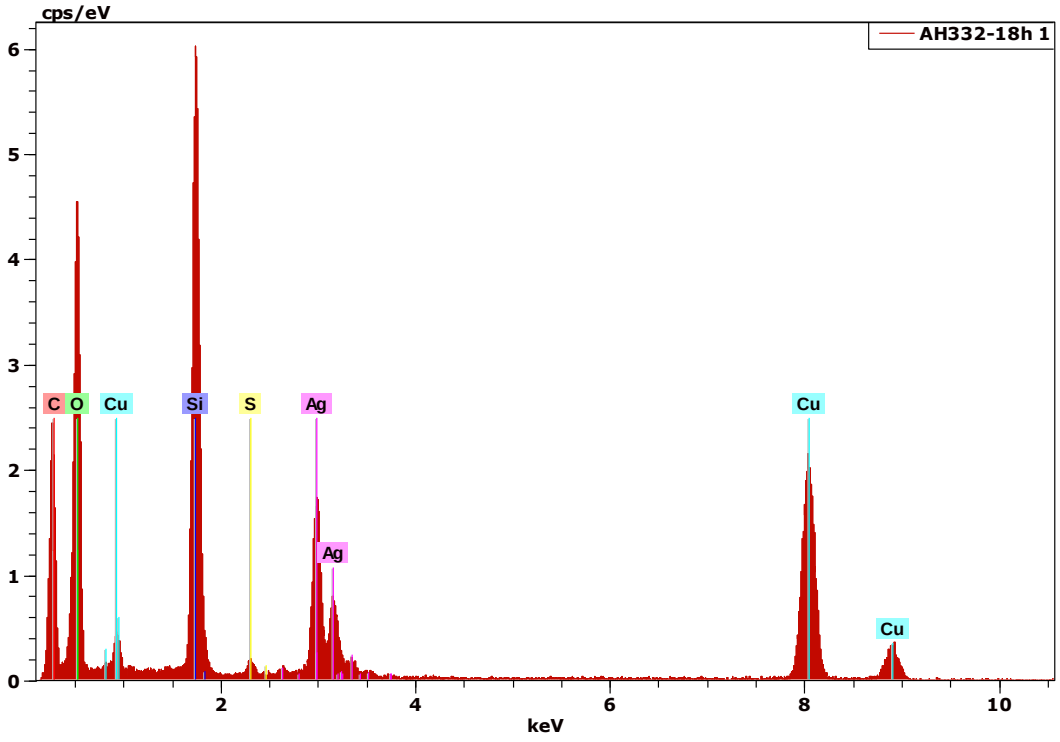
(picture shot à T = 18 hours)

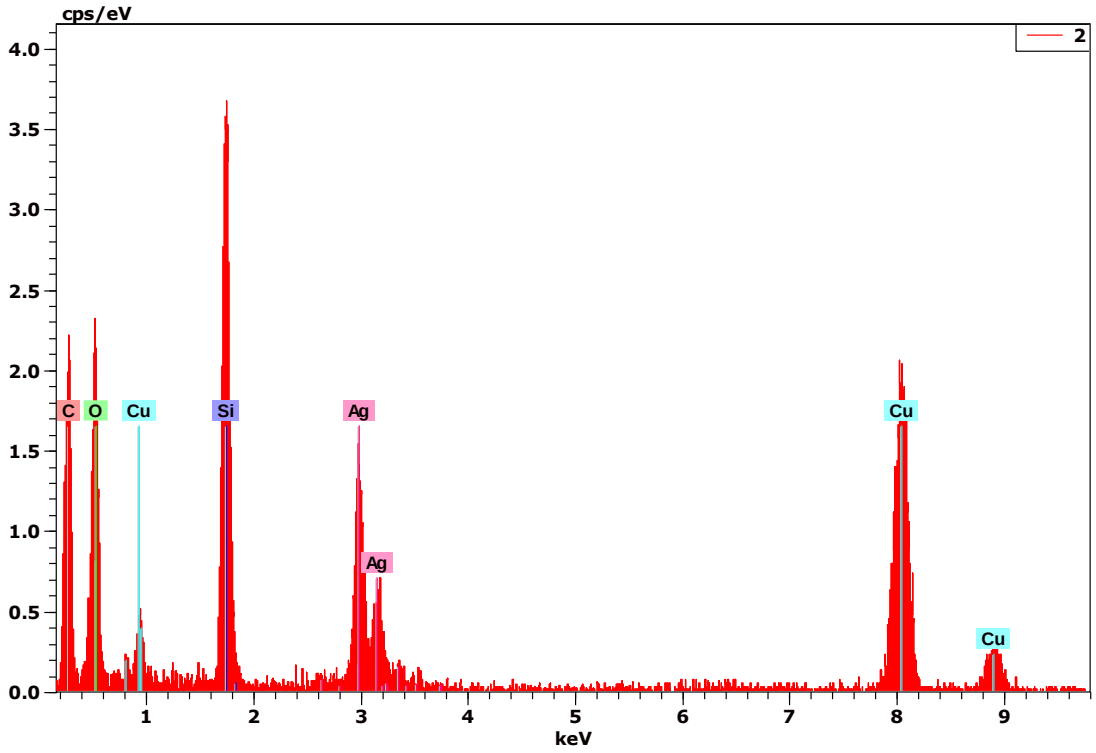


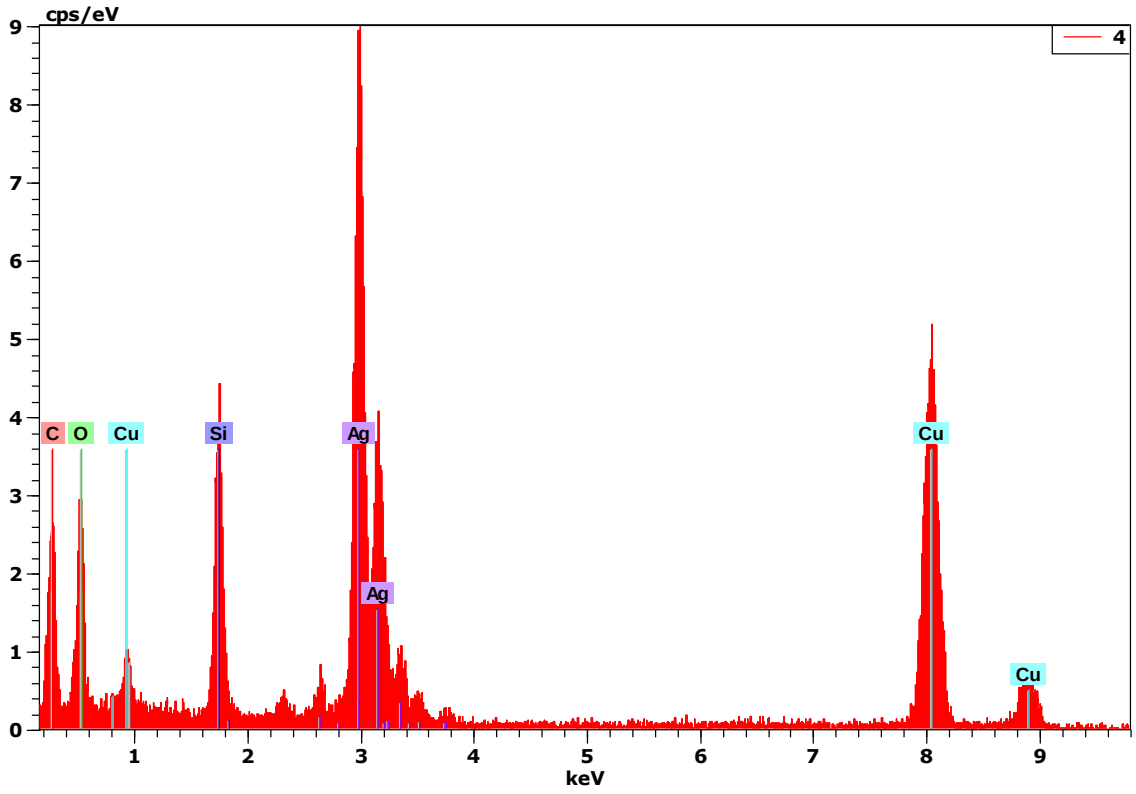
EDX spectroscopy of silver NPs grown on Si-2 modified silica in the presence of $NaBH_4$

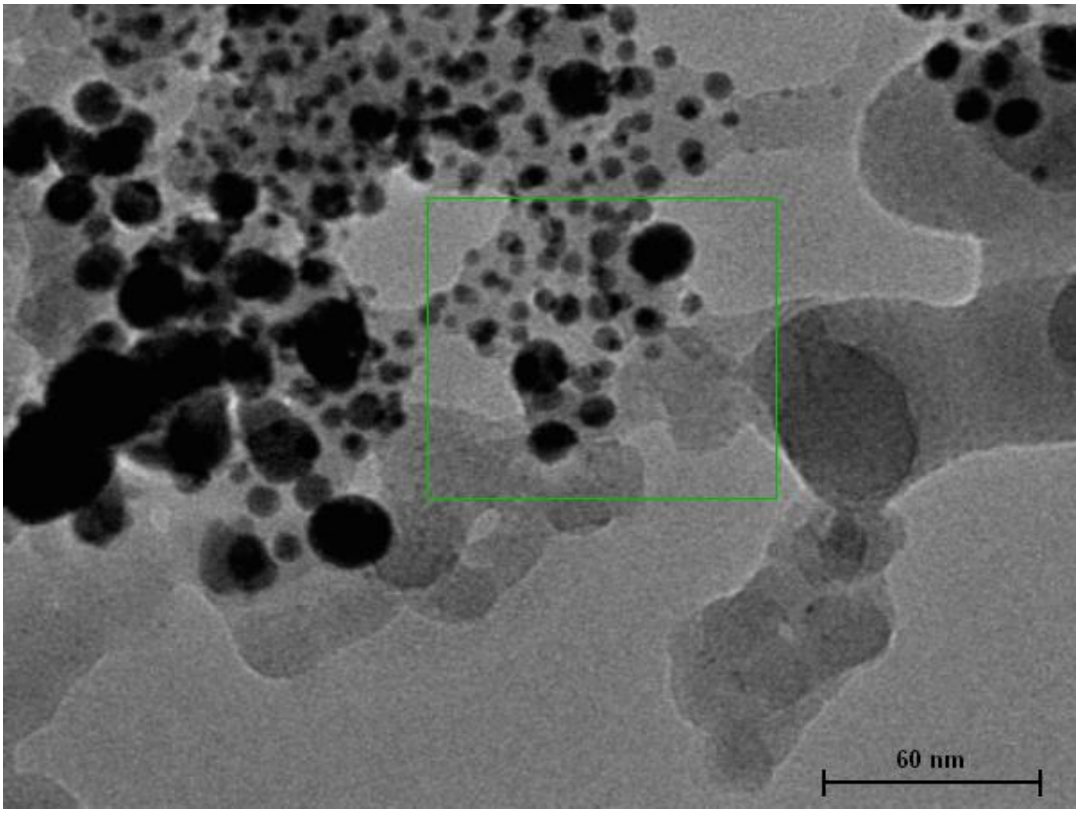
At t= 18 hours

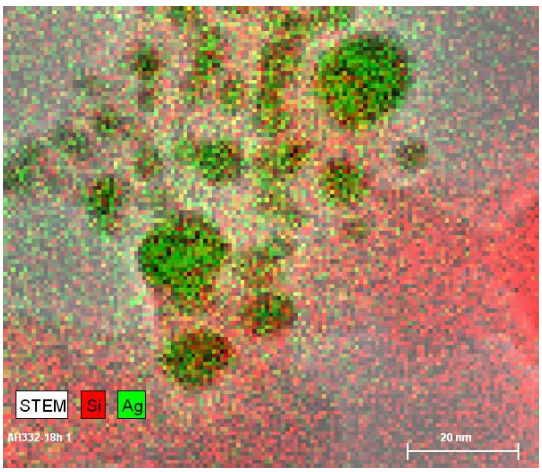


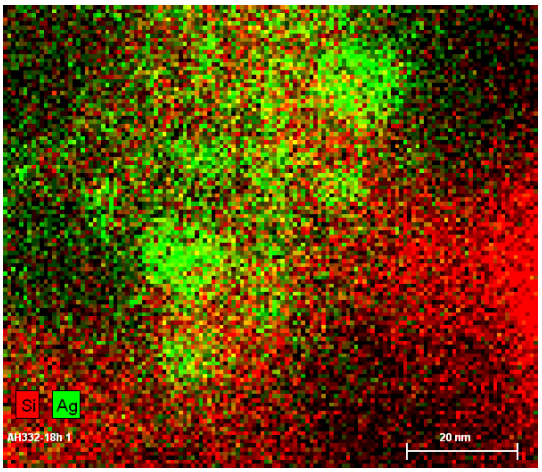






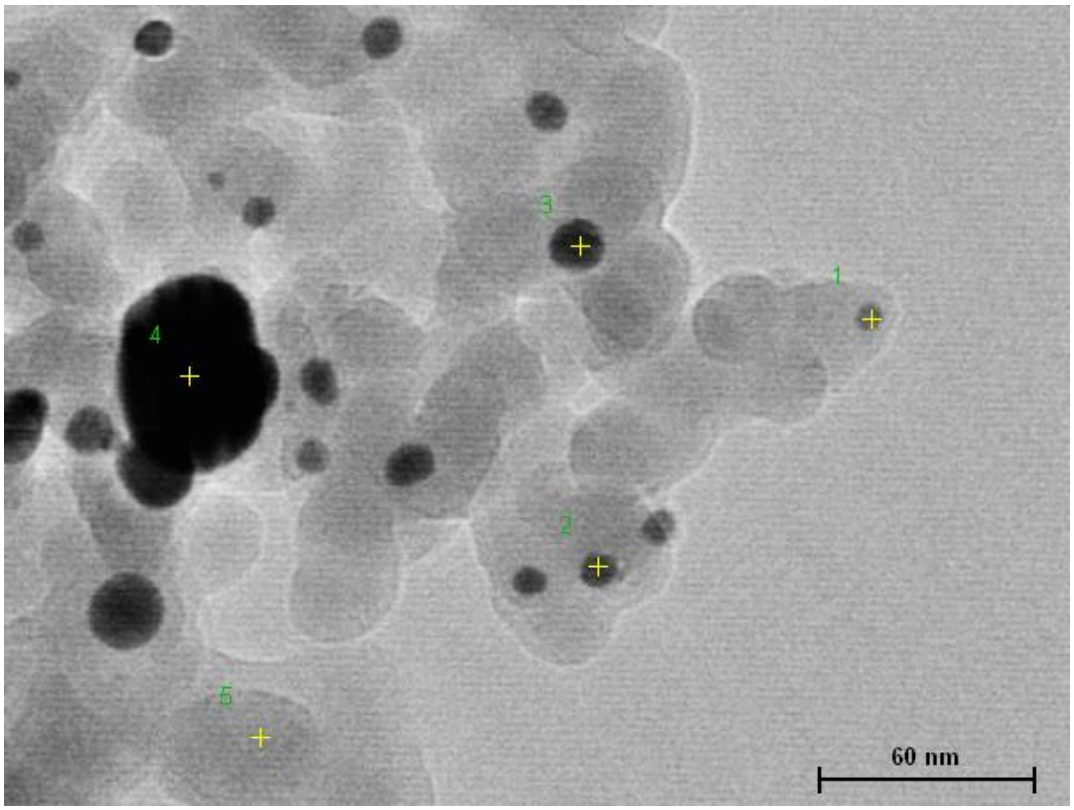


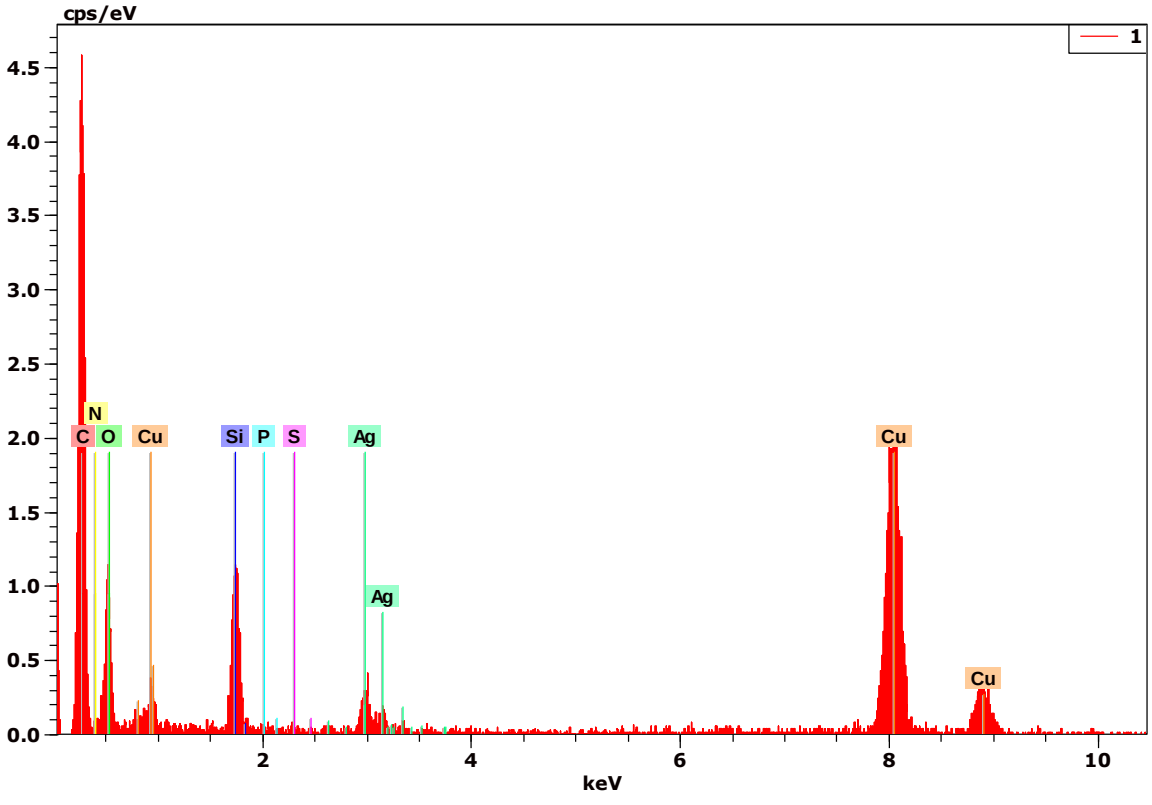


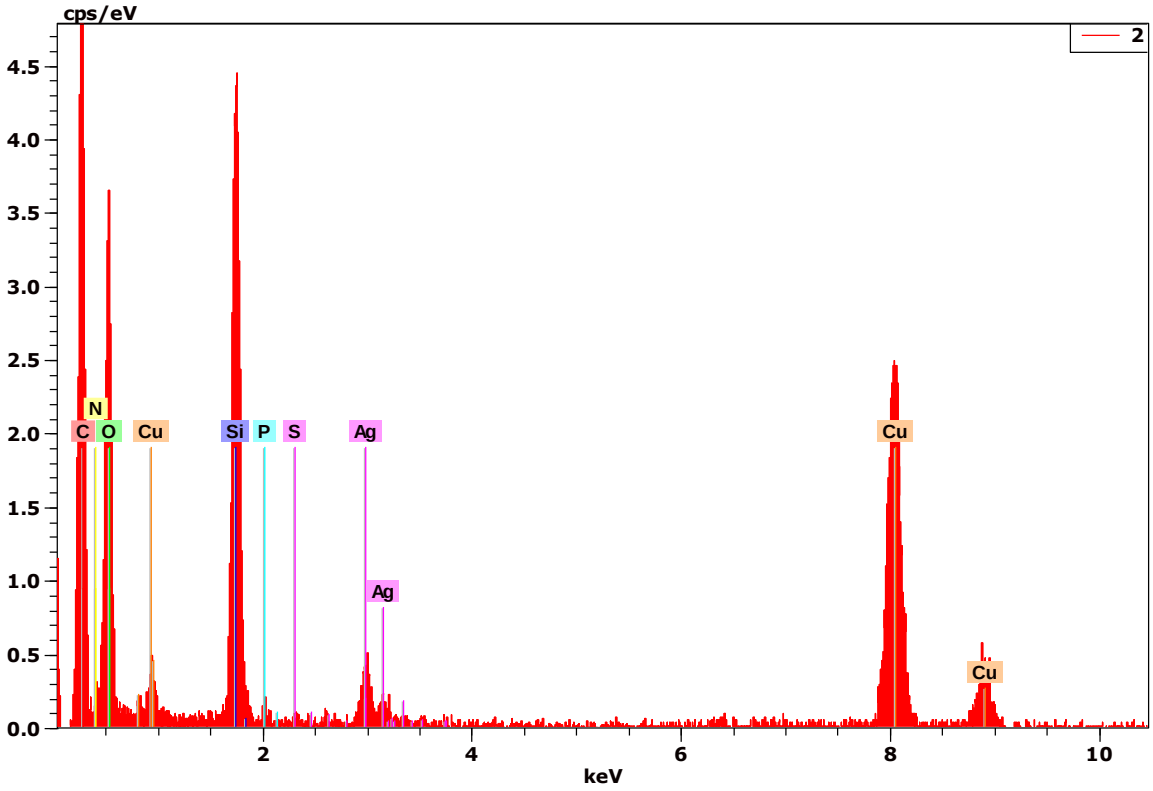


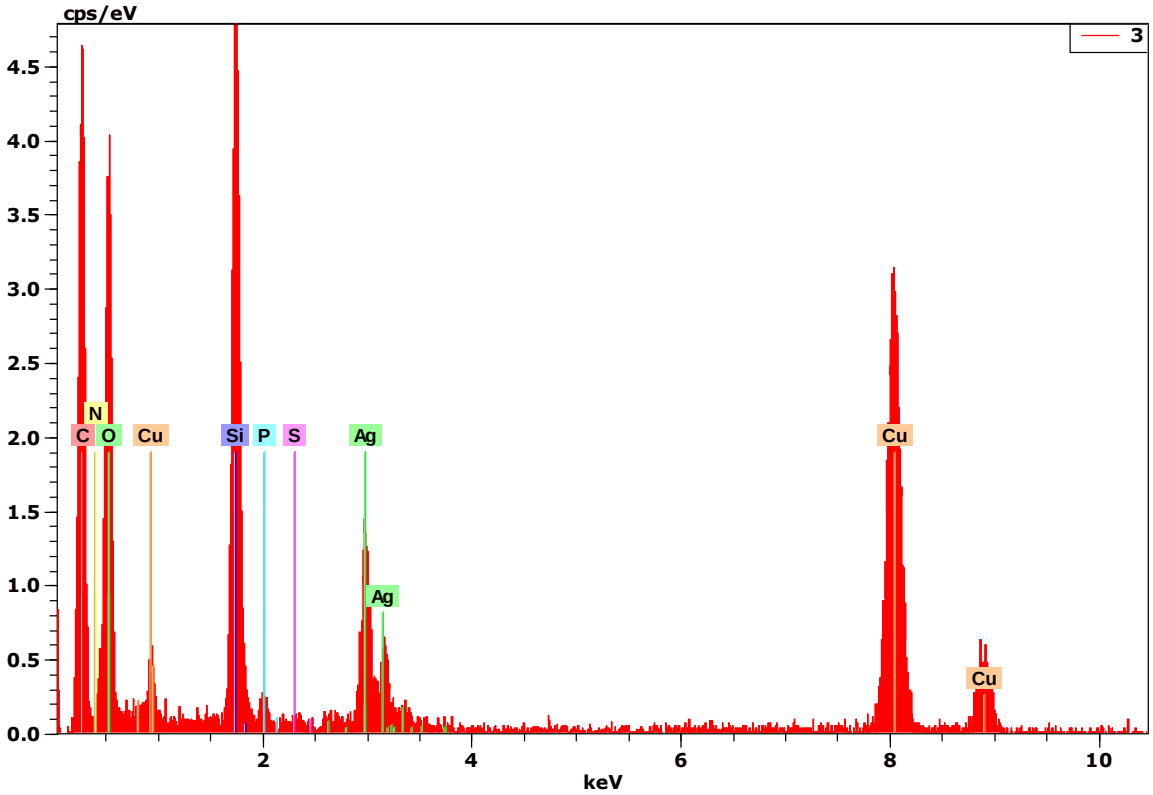
EDX spectroscopy of silver NPs grown on Si-5 modified silica in the presence of $NaBH_4$

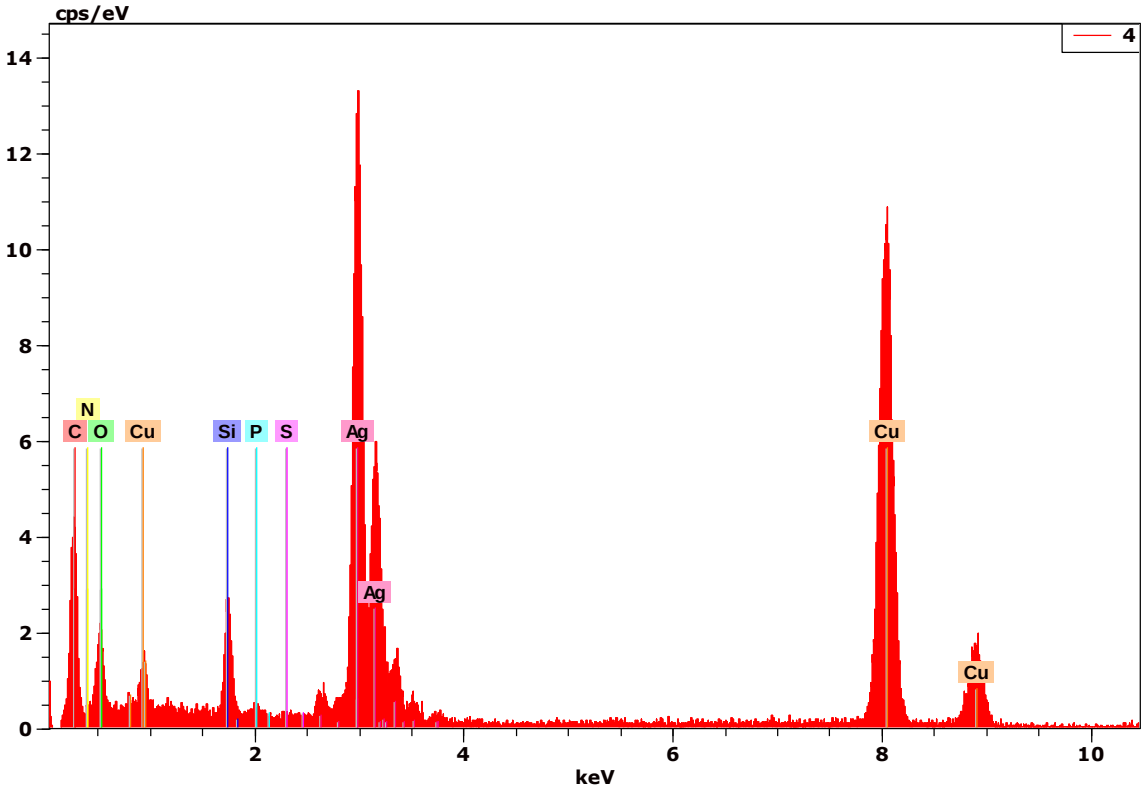
At t= 18 hours

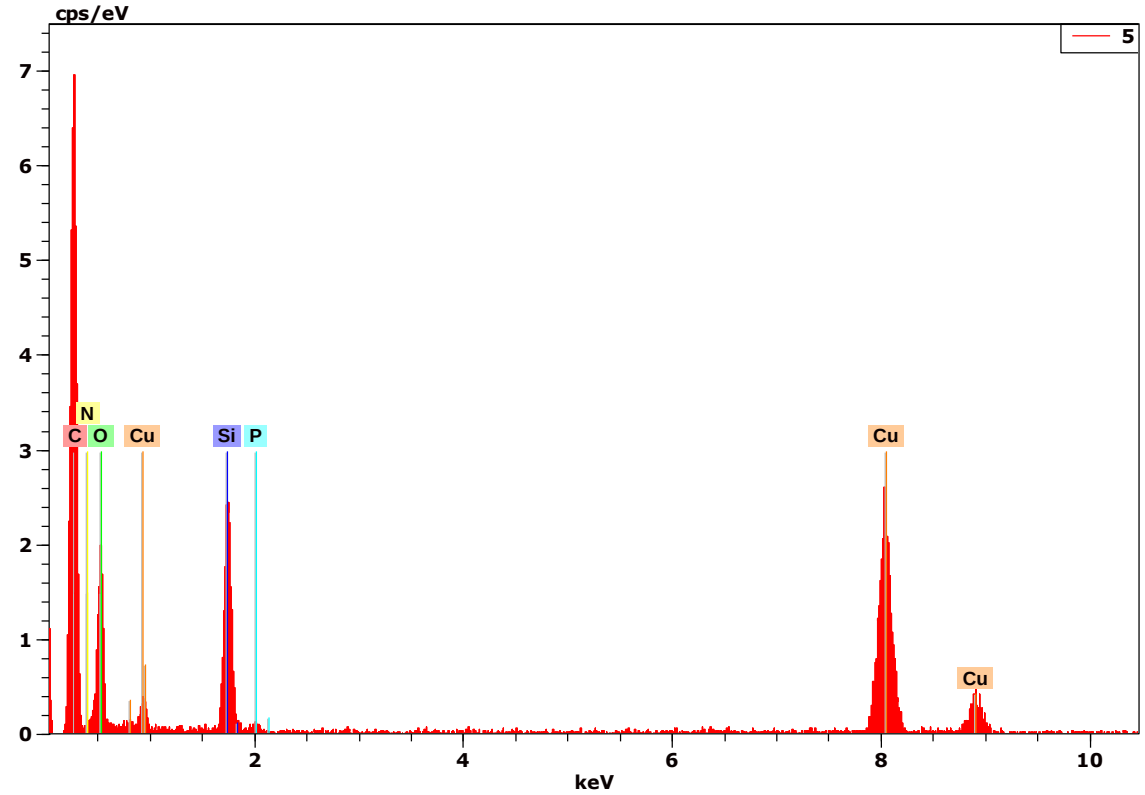












Cristallographic analysis

Cristallographic data

Ag Cubic

h	k	l	d [A]	2Theta[deg]	I [%]
1	1	1	2,35040	38,262	100,0
2	2	0	2,03550	44,473	45,1
3	2	2	1,43930	64,714	22,3
4	3	1	1,22740	77,745	22,1
5	2	2	1,17520	81,910	6,1
6	4	0	1,01780	98,371	2,6
7	3	3	0,93400	111,123	7,9

Ag Hexagonal

.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	0	0	2,53740	35,345	25,1
2	0	0	2	2,39500	37,523	27,8
3	1	0	1	2,24230	40,184	100,0
4	1	0	2	1,74170	52,497	13,0
5	1	1	0	1,46500	63,445	12,5
6	1	0	3	1,35140	69,501	13,3
7	2	0	0	1,26870	74,768	1,7
8	1	1	2	1,24970	76,106	12,5
9	2	0	1	1,22640	77,820	8,6
10	0	0	4	1,19750	80,070	1,7
11	2	0	2	1,12110	86,801	1,9
12	1	0	4	1,08300	90,676	1,7
13	2	0	3	0,99330	101,700	3,7
14	2	1	0	0,95910	106,864	1,1

AgO Cubic

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	1	1	2,78050	32,167	100,0
2	2	0	0	2,40800	37,313	33,5
3	2	2	0	1,70270	53,795	32,4
4	3	1	1	1,45210	64,075	26,5
5	2	2	2	1,39030	67,291	5,6
6	4	0	0	1,20400	79,551	3,5
7	3	3	1	1,10490	88,400	7,9
8	4	2	0	1,07690	91,335	5,7
9	4	2	2	0,98310	103,172	6,2

AgO tétragonal

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	0	1	5,46880	16,194	0,5
2	2	0	0	3,41650	26,060	0,2
3	1	1	2	3,31670	26,859	0,1
4	1	2	1	2,89760	30,834	1,2
5	1	0	3	2,77800	32,197	0,7
6	2	0	2	2,73440	32,724	100,0
7	2	2	0	2,41580	37,188	48,8
8	0	0	4	2,28050	39,483	20,3
9	3	0	1	2,20980	40,801	0,1
10	2	1	3	2,15540	41,879	0,5
11	2	2	2	2,13480	42,302	0,1
12	1	1	4	2,06230	43,865	0,1
13	1	3	2	1,95270	46,467	0,2
14	2	0	4	1,89680	47,921	0,1
15	2	3	1	1,85550	49,057	0,2

Ag2O Cubic

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	1	0	3.34200	26.652	2.0
2	1	1	1	2.72900	32.791	100.0
3	2	0	0	2.36200	38.067	28.0
4	2	1	1	1.92910	47.070	1.0
5	2	2	0	1.67090	54.904	13.0
6	3	1	1	1.42500	65.444	8.0
7	2	2	2	1.36420	68.756	2.0
8	4	0	0	1.18150	81.380	1.0
9	3	3	1	1.08430	90.537	1.0
10	4	2	0	1.05680	93.588	1.0
11	4	2	2	0.96460	105.987	1.0
12	5	1	1	0.90950	115.763	1.0

Ag2O2 monoclinic

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	0	0	5.58160	15.865	1.0
2	1	1	0	2.95440	30.227	2.0
3	0	1	1	2.90120	30.795	1.0
4	2	0	0	2.79050	32.048	58.0
5	-1	1	1	2.76900	32.304	100.0
6	-1	0	2	2.70710	33.064	2.0
7	0	0	2	2.62080	34.185	35.0
8	1	1	1	2.41480	37.204	90.0
9	-2	0	2	2.28380	39.424	31.0
10	2	1	0	2.17800	41.424	1.0
11	-1	1	2	2.13680	42.261	1.0
12	0	1	2	2.09360	43.176	1.0
13	-2	1	2	1.91050	47.556	1.0
14	3	0	0	1.86110	48.899	1.0
15	1	1	2	1.82230	50.011	1.0
16	-3	0	2	1.79340	50.874	1.0
17	0	2	0	1.74140	52.507	7.0
18	-3	1	1	1.70030	53.877	20.0
19	2	0	2	1.67570	54.734	10.0
20	0	2	1	1.65240	55.572	1.0
21	3	1	0	1.64120	55.984	1.0
22	-1	1	3	1.62140	56.730	17.0
23	-2	2	1	1.48530	62.479	1.0
24	2	2	0	1.47760	62.841	10.0
25	3	1	1	1.45990	63.692	9.0
26	0	2	2	1.45050	64.154	8.0
27	-4	0	2	1.42230	65.584	3.0
28	1	1	3	1.40900	66.282	5.0
29	4	0	0	1.39550	67.007	11.0
30	-2	2	2	1.38490	67.589	6.0
31	-2	0	4	1.35320	69.395	3.0
32	1	2	2	1.35010	69.577	1.0
33	0	0	4	1.31050	72.001	3.0
34	-1	2	3	1.26190	75.241	5.0
35	2	2	2	1.20740	79.283	3.0
36	-4	0	4	1.14210	84.824	1.0
37	-1	3	1	1.12510	86.416	2.0
38	-5	1	1	1.10560	88.330	3.0
39	-4	2	2	1.10170	88.724	3.0

Ag2O3 orthorhombic

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	2	2	0	4.06810	21.830	5.0
2	1	1	1	3.34200	26.652	100.0
3	4	0	0	3.21890	27.691	10.0
4	4	2	0	2.74150	32.637	90.0
5	3	1	1	2.69410	33.228	30.0
6	0	4	0	2.62330	34.152	30.0
7	1	3	1	2.48160	36.167	60.0
8	3	3	1	2.17830	41.418	50.0
9	5	1	1	2.06530	43.798	30.0
10	4	4	0	2.03270	44.538	10.0
11	6	2	0	1.98580	45.648	5.0
12	5	3	1	1.80420	50.548	20.0
13	2	0	2	1.76120	51.873	20.0
14	3	5	1	1.67570	54.734	25.0
15	2	2	2	1.67020	54.929	20.0
16	7	1	1	1.62340	56.653	15.0
17	8	0	0	1.60860	57.222	10.0
18	8	2	0	1.53670	60.168	30.0
19	7	3	1	1.48620	62.437	25.0
20	2	4	2	1.46260	63.561	30.0
21	1	7	1	1.37920	67.906	10.0
22	8	4	0	1.37120	68.357	5.0
23	6	2	2	1.34630	69.802	30.0
24	9	1	1	1.32090	71.347	10.0
25	0	8	0	1.31100	71.969	5.0
26	7	5	1	1.29390	73.073	5.0

Ag2O Hexagonal

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	0	0	1	4.95100	17.901	2.8
2	1	0	0	4.60550	19.257	1.8
3	1	0	1	3.37210	26.410	0.6
4	1	1	0	2.65900	33.679	20.4
5	0	0	2	2.47550	36.259	22.9
6	-1	-1	1	2.34250	38.396	100.0
7	2	0	0	2.30280	39.085	2.3
8	1	0	2	2.18050	41.375	1.2
9	2	0	1	2.08800	43.298	0.1
10	-1	-1	2	1.81180	50.321	18.5
11	2	1	0	1.74070	52.530	0.3
12	2	0	2	1.68610	54.368	0.6
13	0	0	3	1.65030	55.649	1.9
14	-2	-1	1	1.64220	55.947	3.4
15	3	0	0	1.53520	60.233	12.9
16	3	0	1	1.46630	63.382	0.4
17	-2	-1	2	1.42390	65.501	0.2
18	-1	-1	3	1.40220	66.645	11.2
19	2	0	3	1.34140	70.094	0.1
20	2	2	0	1.32950	70.815	1.3
21	3	0	2	1.30470	72.371	9.6
22	-2	-2	1	1.28400	73.729	7.6
23	3	1	0	1.27730	74.180	0.5
24	-3	-1	1	1.23780	76.971	1.4
25	-2	-1	3	1.19760	80.062	0.8
26	1	0	4	1.19530	80.248	0.4
27	-2	-2	2	1.17130	82.241	2.5
28	4	0	0	1.15140	83.982	0.4
29	-3	-1	2	1.13510	85.472	0.6
30	3	0	3	1.12400	86.522	2.0
31	-1	-1	4	1.12210	86.704	3.3
32	2	0	4	1.09020	89.913	0.1
33	3	2	0	1.05660	93.611	0.4
34	4	0	2	1.04400	95.095	0.7
35	-2	-2	3	1.03530	96.153	2.6
36	-3	-2	1	1.03330	96.400	1.6
37	-3	-1	3	1.01010	99.387	0.2

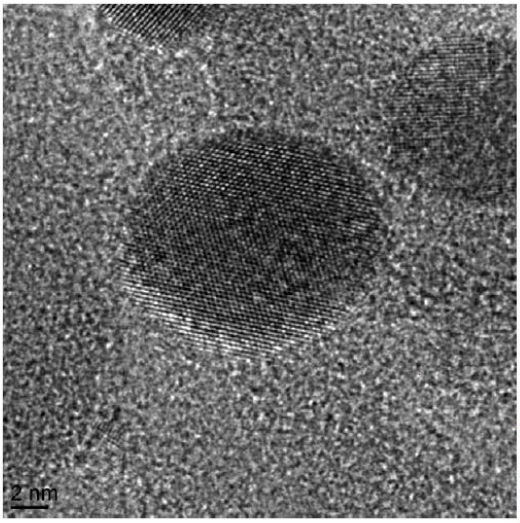
Ag3O4 Monoclinic

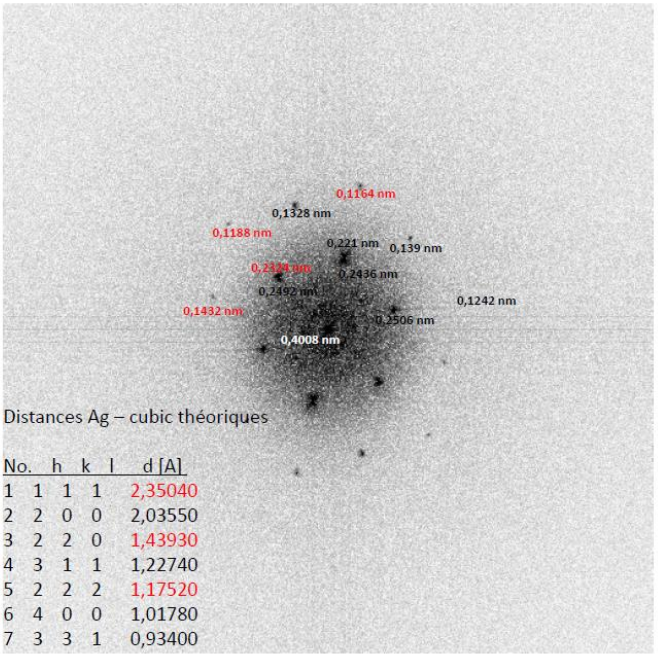
No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	0	1	1	4.68860	18.912	2.0
2	0	2	0	4.60080	19.277	10.0
3	0	2	1	3.51800	25.296	10.0
4	1	0	0	3.43660	25.905	5.0
5	1	1	0	3.21850	27.695	60.0
6	1	1	-1	3.15570	28.257	25.0
7	1	2	0	2.75430	32.481	10.0
8	0	0	2	2.72750	32.809	40.0
9	1	2	-1	2.71540	32.960	40.0
10	0	3	1	2.67550	33.466	100.0
11	0	1	2	2.61450	34.270	5.0
12	1	1	1	2.50390	35.834	60.0
13	1	1	-2	2.41530	37.196	30.0
14	0	2	2	2.34690	38.322	5.0
15	0	4	0	2.30410	39.062	5.0
16	1	3	0	2.29000	39.312	10.0
17	1	3	-1	2.26450	39.774	50.0
18	1	2	-2	2.19790	41.032	20.0
19	0	4	1	2.12010	42.610	5.0
20	0	3	2	2.03850	44.404	2.0
21	1	3	-2	1.93900	46.815	5.0
22	1	4	0	1.91280	47.495	10.0
23	1	4	-1	1.89900	47.862	5.0
24	1	1	2	1.85630	49.034	5.0
25	2	1	-1	1.75530	52.060	20.0
26	1	2	2	1.75260	52.146	10.0
27	0	5	1	1.74480	52.397	10.0
28	1	4	1	1.72360	53.092	1.0
29	1	2	-3	1.70150	53.836	10.0
30	0	2	3	1.69060	54.212	10.0
31	2	0	-2	1.67970	54.593	4.0
32	1	5	0	1.62320	56.661	15.0
33	1	5	-1	1.61410	57.010	4.0
34	1	3	2	1.61260	57.067	2.0
35	2	2	0	1.61000	57.168	5.0
36	2	2	-2	1.57840	58.422	5.0
37	1	3	-3	1.57240	58.666	20.0
38	0	3	3	1.56380	59.021	20.0
39	0	6	0	1.53500	60.242	10.0
40	0	5	2	1.52600	60.634	5.0
41	1	5	1	1.50300	61.662	15.0
42	1	5	-2	1.48300	62.587	10.0
43	1	4	2	1.46330	63.527	15.0
44	2	1	-3	1.45100	64.129	10.0
45	2	2	1	1.44560	64.398	5.0
46	1	1	3	1.43160	65.105	10.0
47	1	0	-4	1.40890	66.287	10.0
48	1	6	-1	1.39620	66.969	10.0
49	2	4	0	1.37730	68.012	20.0
50	0	0	4	1.36350	68.797	5.0

XRD patterns

Ag(0)Si2

AH332-18h-x800000-0024



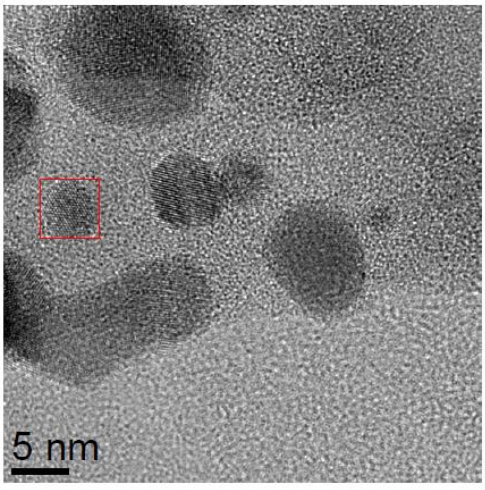


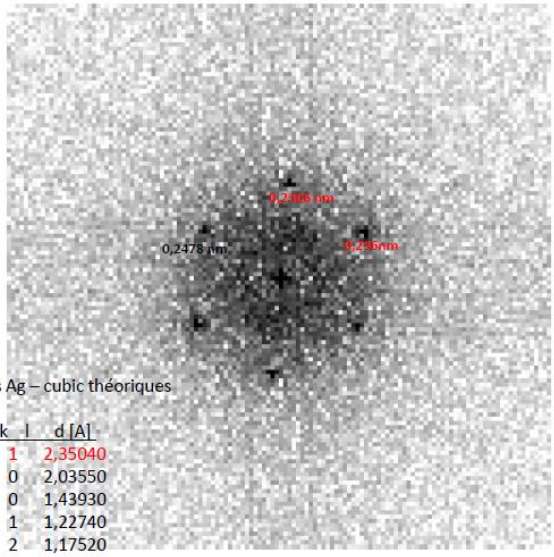
Distances Ag – cubic théoriques

No.	h	k	l	d [A]
1	1	1	1	2,35040
2	2	0	0	2,03550
3	2	2	0	1,43930
4	3	1	1	1,22740
5	2	2	2	1,17520
6	4	0	0	1,01780
7	3	3	1	0,93400

Ag(0)Si2

AH332-18h-x500000-007



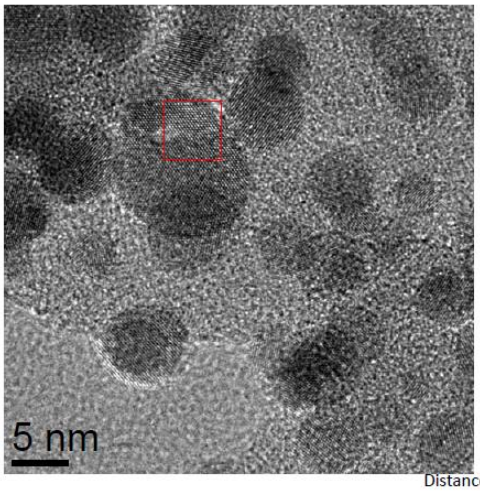


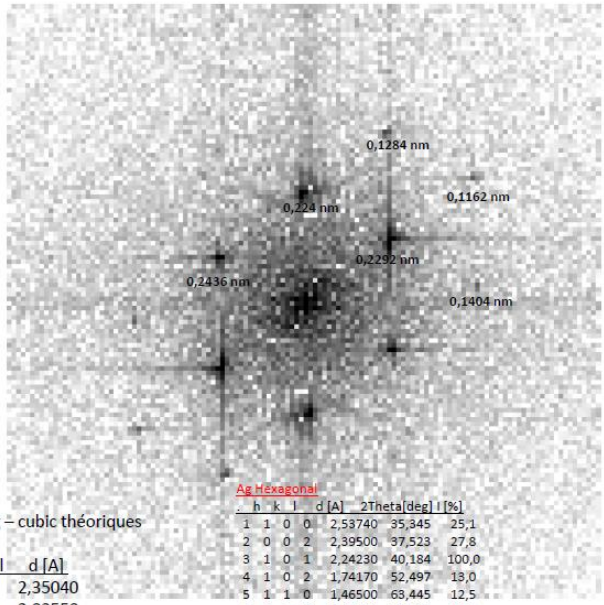
Distances Ag – cubic théoriques

No.	h	k	l	d [A]
1	1	1	1	2,35040
2	2	0	0	2,03550
3	2	2	0	1,43930
4	3	1	1	1,22740
5	2	2	2	1,17520
6	4	0	0	1,01780
7	3	3	1	0,93400

Ag(0)Si2

AH332-18h-x500000-020





Distances Ag – cubic théoriques

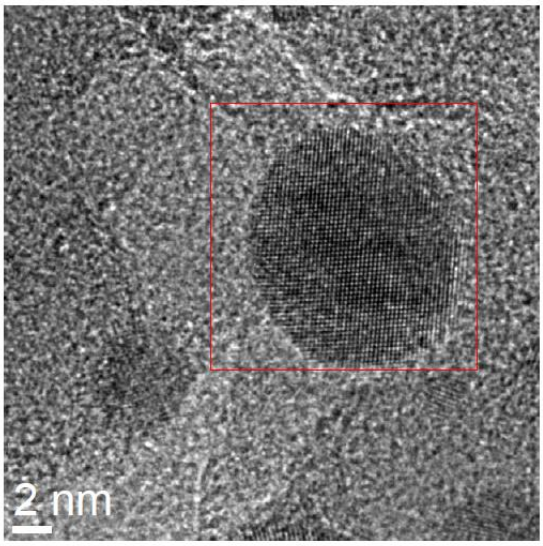
No.	h	k	l	d [A]
1	1	1	1	2,35040
2	2	0	0	2,03550
3	2	2	0	1,43930
4	3	1	1	1,22740
5	2	2	2	1,17520
6	4	0	0	1,01780
7	3	3	1	0,93400

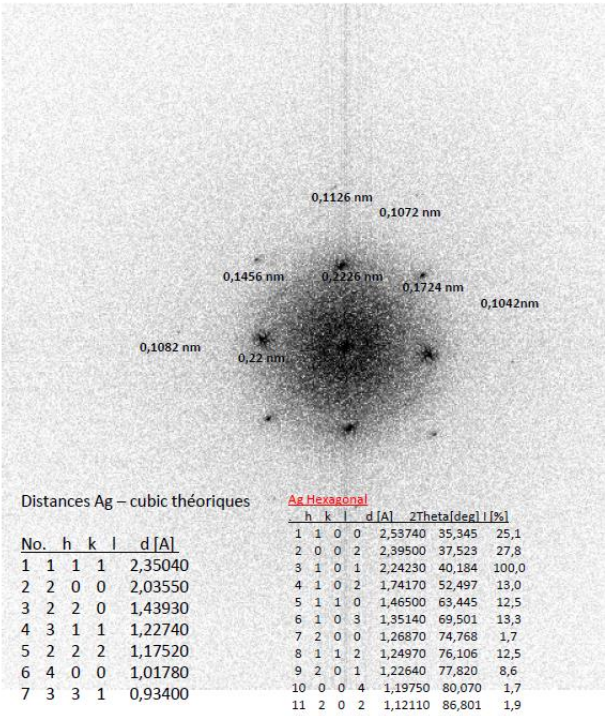
Ag Hexagonal

.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	0	0	2,53740	35,345	25,1
2	0	0	2	2,39500	37,523	27,8
3	1	0	1	2,24230	40,184	100,0
4	1	0	2	1,74170	52,497	13,0
5	1	1	0	1,46500	63,445	12,5
6	1	0	3	1,35140	69,501	13,3
7	2	0	0	1,26870	74,768	1,7
8	1	1	2	1,24970	76,106	12,5
9	2	0	1	1,22640	77,820	8,6
10	0	0	4	1,19750	80,070	1,7
11	2	0	2	1,12110	86,801	1,9
12	1	0	4	1,08300	90,676	1,7
13	2	0	3	0,99330	101,700	3,7
14	2	1	0	0,95910	106,864	1,1

Ag(0)Si3

AH355-x800000-021





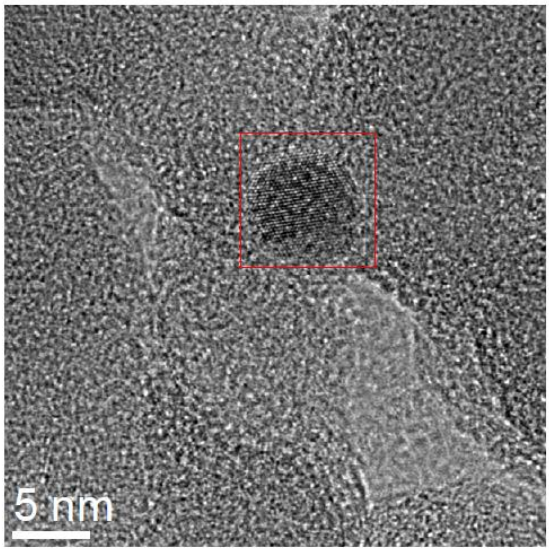
Distances Ag – cubic théoriques

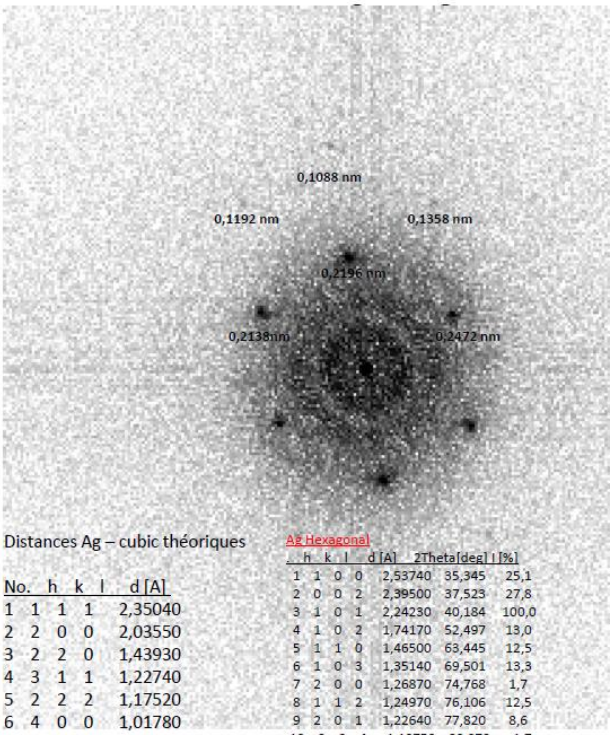
No.	h	k	l	d [A]
1	1	1	1	2,35040
2	2	0	0	2,03550
3	2	2	0	1,43930
4	3	1	1	1,22740
5	2	2	2	1,17520
6	4	0	0	1,01780
7	3	3	1	0,93400

Ag Hexagonal

.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	0	0	2,53740	35,345	25,1
2	0	0	2	2,39500	37,523	27,8
3	1	0	1	2,24230	40,184	100,0
4	1	0	2	1,74170	52,497	13,0
5	1	1	0	1,46500	63,445	12,5
6	1	0	3	1,35140	69,501	13,3
7	2	0	0	1,26870	74,768	1,7
8	1	1	2	1,24970	76,106	12,5
9	2	0	1	1,22640	77,820	8,6
10	0	0	4	1,19750	80,070	1,7
11	2	0	2	1,12110	86,801	1,9
12	1	0	4	1,08300	90,676	1,7
13	2	0	3	0,99330	101,700	3,7
14	2	1	0	0,95910	106,864	1,1

Ag(0)Si3
AH355-x600000-07





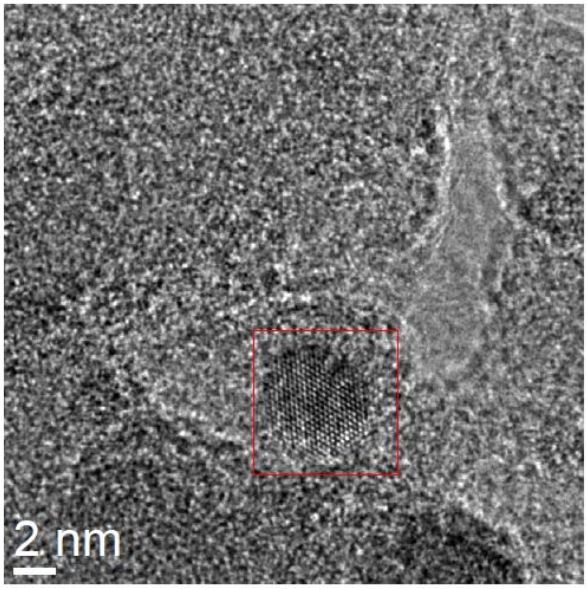
Distances Ag – cubic théoriques

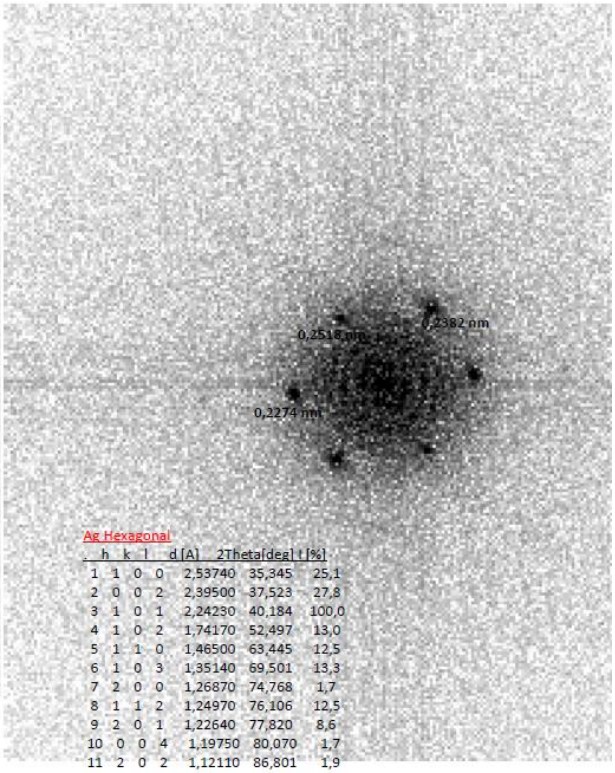
No.	h	k	l	d [A]
1	1	1	1	2,35040
2	2	0	0	2,03550
3	2	2	0	1,43930
4	3	1	1	1,22740
5	2	2	2	1,17520
6	4	0	0	1,01780
7	3	3	1	0,93400

Ag Hexagonal

.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	0	0	2,53740	35,345	25,1
2	0	0	2	2,39500	37,523	27,8
3	1	0	1	2,24230	40,184	100,0
4	1	0	2	1,74170	52,497	13,0
5	1	1	0	1,46500	63,445	12,5
6	1	0	3	1,35140	69,501	13,3
7	2	0	0	1,26870	74,768	1,7
8	1	1	2	1,24970	76,106	12,5
9	2	0	1	1,22640	77,820	8,6
10	0	0	4	1,19750	80,070	1,7
11	2	0	2	1,12110	86,801	1,9
12	1	0	4	1,08300	90,676	1,7
13	2	0	3	0,99330	101,700	3,7
14	2	1	0	0,95910	106,864	1,1

Ag(0)Si3
AH355-x800000-15

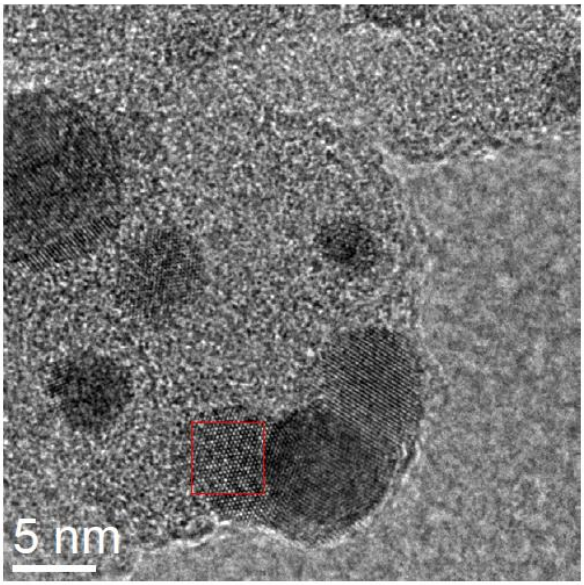


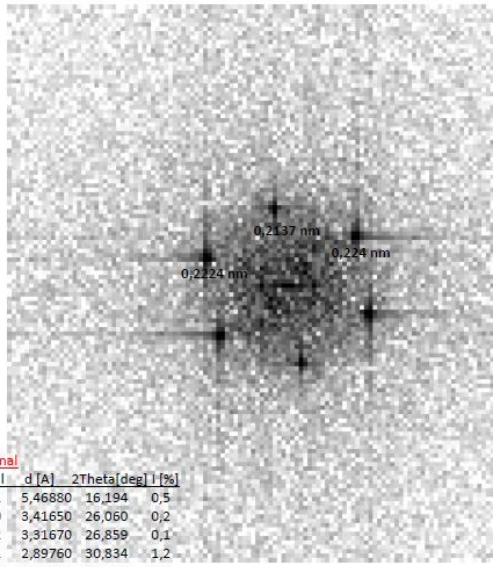


Ag Hexagonal

	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	0	0	2,53740	35,345	25,1
2	0	0	2	2,39500	37,523	27,8
3	1	0	1	2,24230	40,184	100,0
4	1	0	2	1,74170	52,497	13,0
5	1	1	0	1,46500	63,445	12,5
6	1	0	3	1,35140	69,501	13,3
7	2	0	0	1,26870	74,768	1,7
8	1	1	2	1,24970	76,106	12,5
9	2	0	1	1,22640	77,820	8,6
10	0	0	4	1,19750	80,070	1,7
11	2	0	2	1,12110	86,801	1,9
12	1	0	4	1,08300	90,676	1,7
13	2	0	3	0,99330	101,700	3,7
14	2	1	0	0,95910	106,864	1,1

Ag(0)Si3
AH355-x600000-17





AgO tétragonal

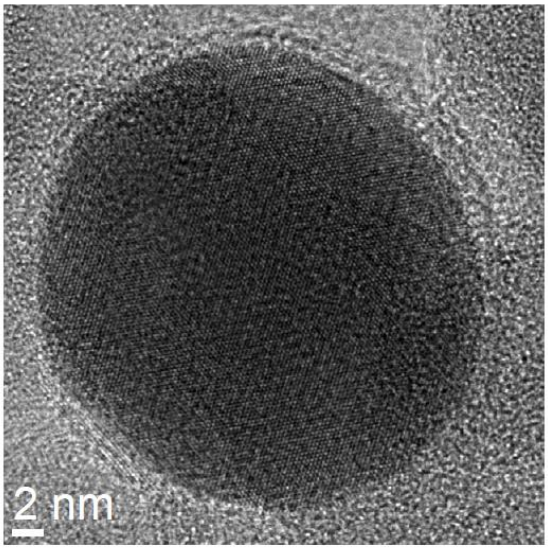
No.	h	k	l	d [A]	2Theta [deg]	I [%]
1	1	0	1	5,46880	16,194	0,5
2	2	0	0	3,41650	26,060	0,2
3	1	1	2	3,31670	26,859	0,1
4	1	2	1	2,89760	30,834	1,2
5	1	0	3	2,77800	32,197	0,7
6	2	0	2	2,73440	32,724	100,0
7	2	2	0	2,41580	37,188	48,8
8	0	0	4	2,28050	39,483	20,3
9	3	0	1	2,20980	40,801	0,1
10	2	1	3	2,15540	41,879	0,5
11	2	2	2	2,13480	42,302	0,1
12	1	1	4	2,06230	43,865	0,1
13	1	3	2	1,95270	46,467	0,2
14	2	0	4	1,89680	47,921	0,1
15	2	3	1	1,85550	49,057	0,2

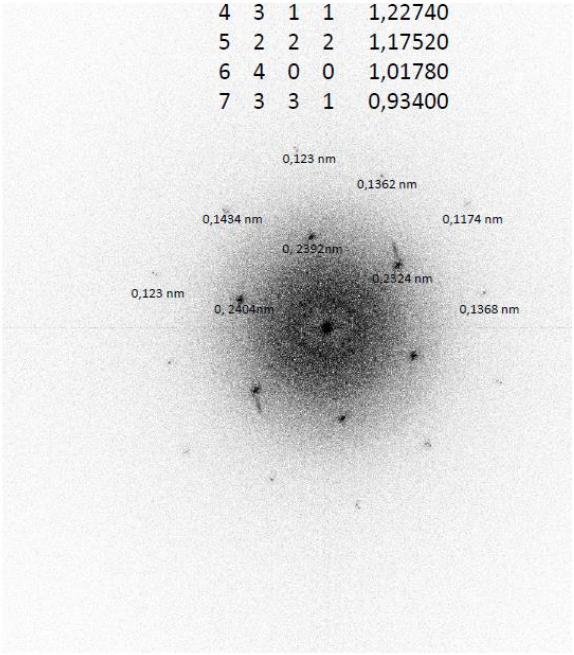
Ag(0)Si5

AH333-1h-x600000-0016

Distances Ag - cubic

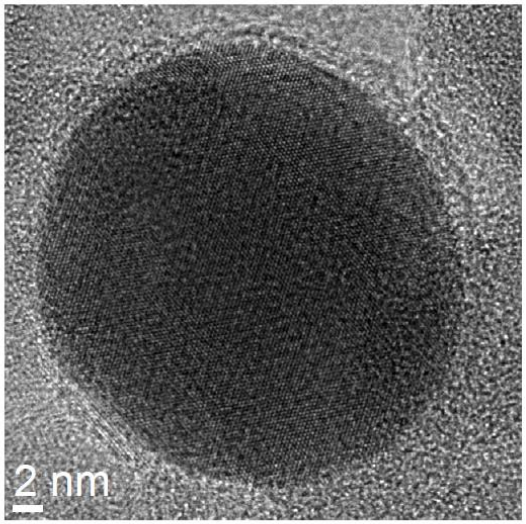
No.	h	k	l	d [A]
1	1	1	1	2,35040
2	2	0	0	2,03550
3	2	2	0	1,43930
4	3	1	1	1,22740
5	2	2	2	1,17520
6	4	0	0	1,01780
7	3	3	1	0,93400

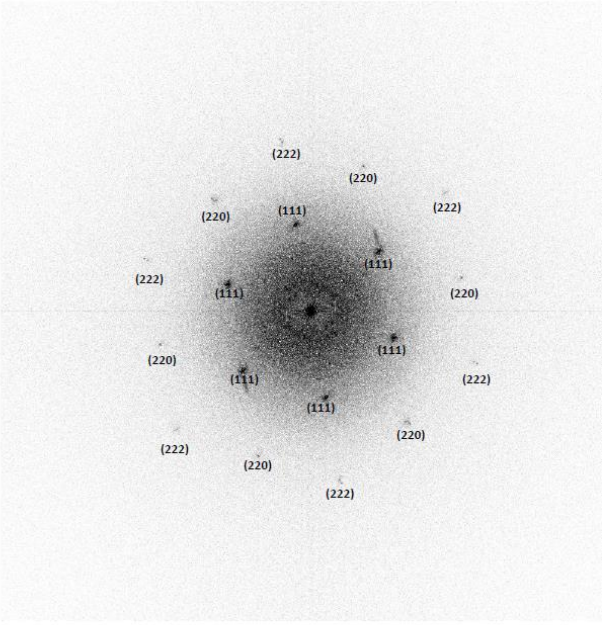




Ag(0)Si5

AH333-1h-x600000-0016



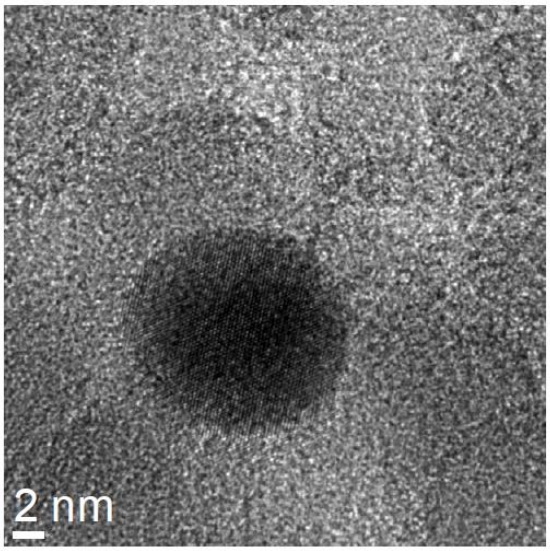


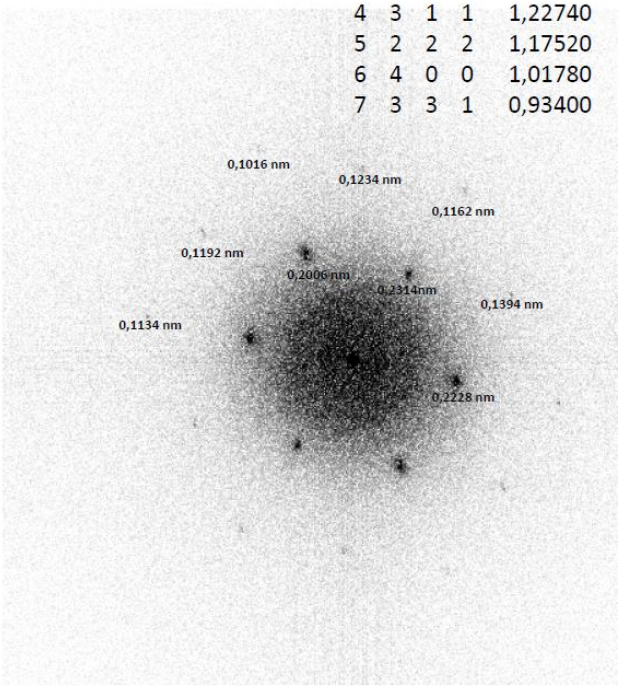
Ag(0)Si5

AH333-x600000-0012

Distances Ag - cubic

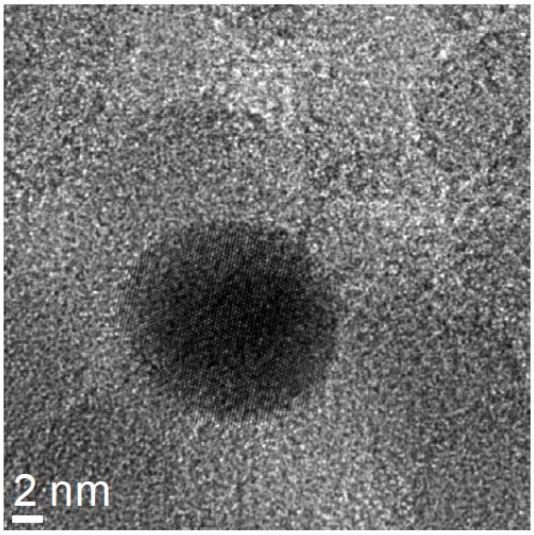
No.	h	k	l	d [A]
1	1	1	1	2,35040
2	2	0	0	2,03550
3	2	2	0	1,43930
4	3	1	1	1,22740
5	2	2	2	1,17520
6	4	0	0	1,01780
7	3	3	1	0,93400

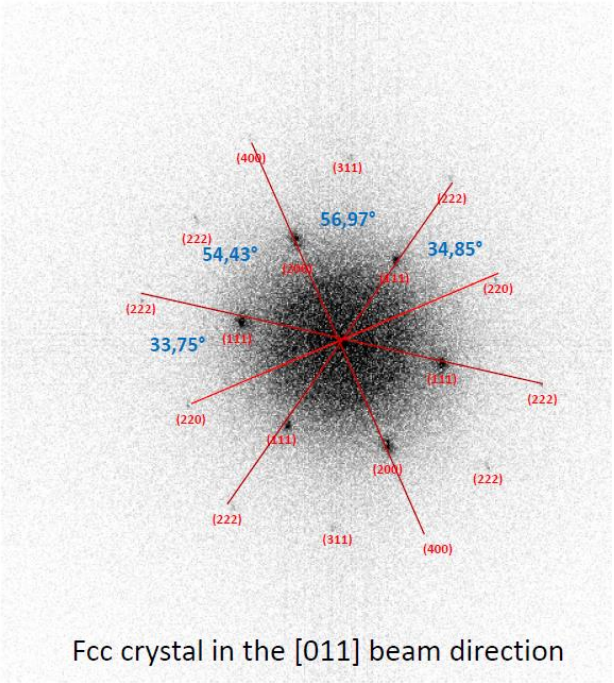




Ag(0)Si5

AH333-x600000-0012

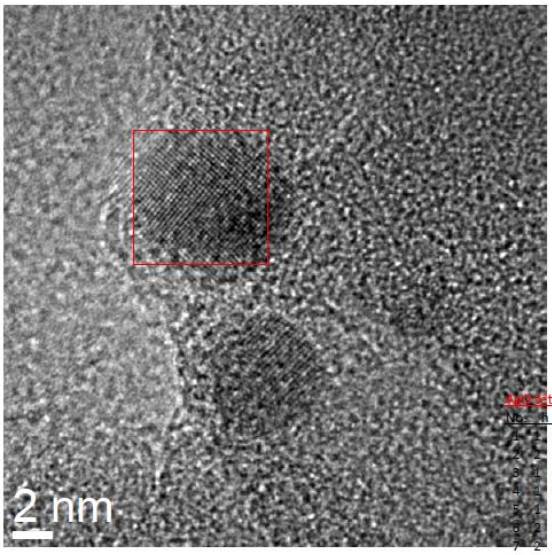


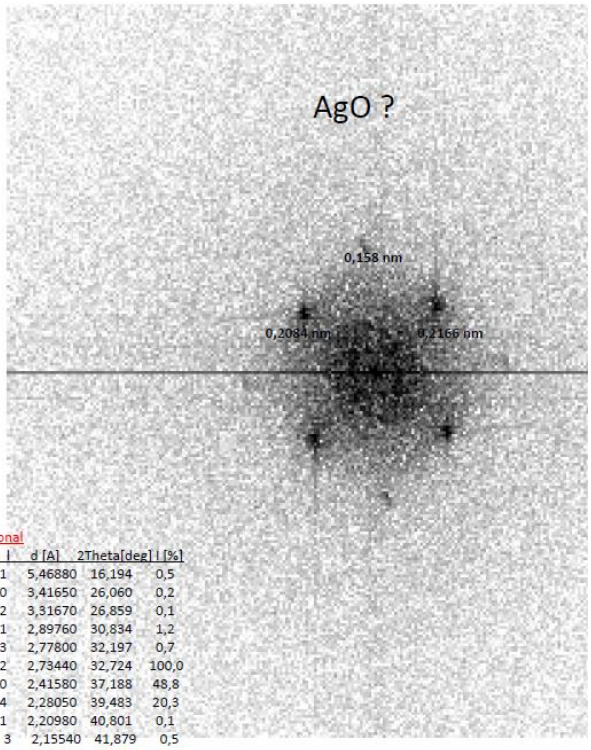


Fcc crystal in the [011] beam direction

Ag(II)Si2

AH326B-1j-x800000-11



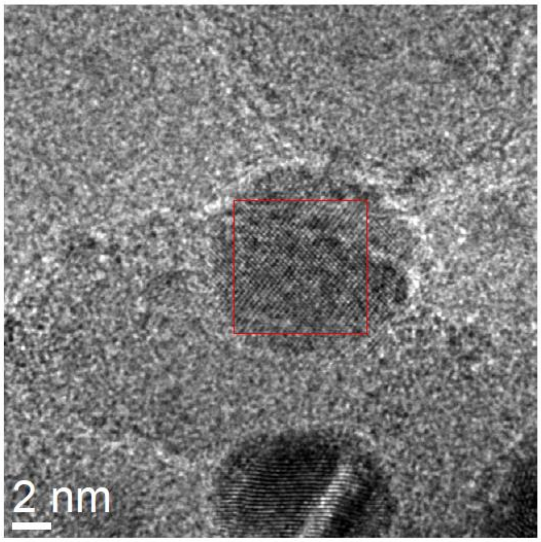


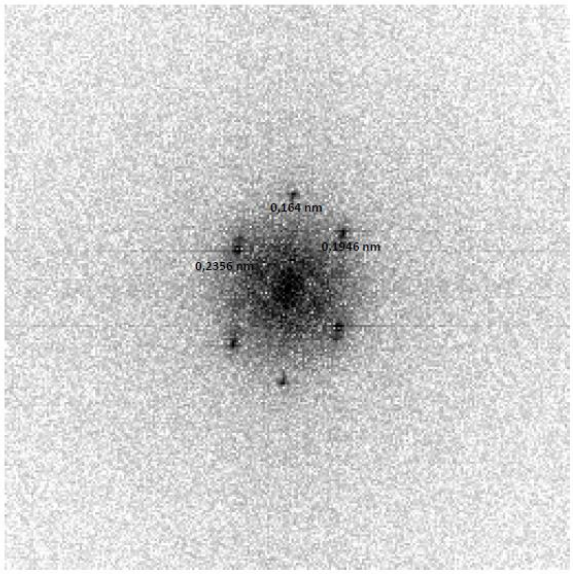
AgO Tetragonal

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	0	1	5,46880	16,194	0,5
2	0	0	0	3,41650	26,060	0,2
3	1	1	2	3,31670	26,859	0,1
4	1	2	1	2,89760	30,834	1,2
5	1	0	3	2,77800	32,197	0,7
6	2	0	2	2,73440	32,724	100,0
7	2	2	0	2,41580	37,188	48,8
8	0	0	4	2,28050	39,483	20,3
9	3	0	1	2,20980	40,801	0,1
10	2	1	3	2,15540	41,879	0,5
11	2	2	2	2,13480	42,302	0,1
12	1	1	4	2,06230	43,865	0,1
13	1	3	2	1,95270	46,467	0,2
14	2	0	4	1,89680	47,921	0,1
15	2	3	1	1,85550	49,057	0,2

Ag(II)Si2

AH326-14j-x800000-0017



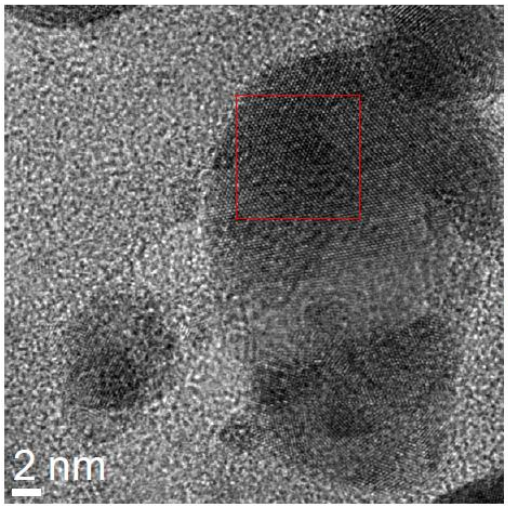


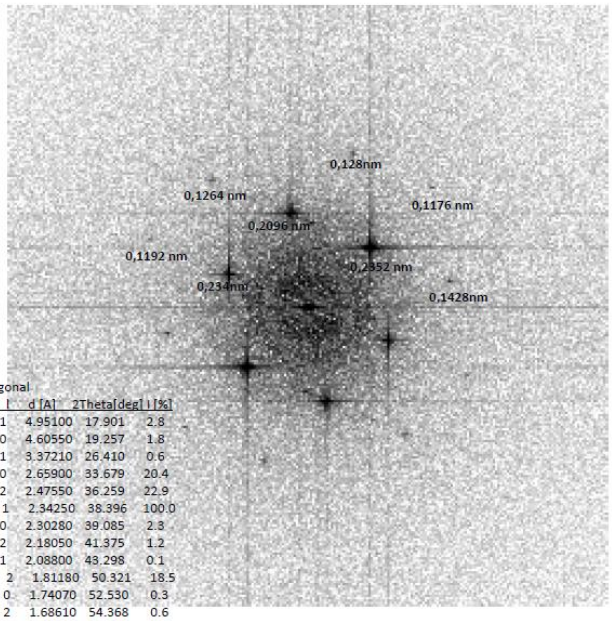
Ag Cubic

h	k	l	d [A]	2Theta[deg]	I [%]
1	1	1	2,35040	38,262	100,0
2	2	0	2,03550	44,473	45,1
3	2	2	1,43930	64,714	22,3
4	3	1	1,22740	77,745	22,1
5	2	2	1,17520	81,910	6,1
6	4	0	1,01780	98,371	2,6
7	3	3	0,93400	111,123	7,9

Ag(II)Si2

AH326-14j-x600000-0014





Ag3O Hexagonal

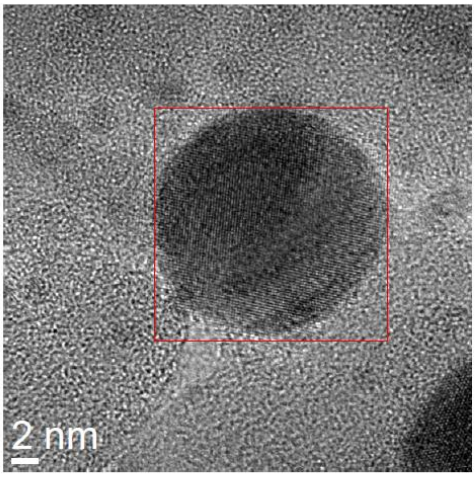
No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	0	0	1	4.95100	17.901	2.8
2	1	0	0	4.60550	19.257	1.8
3	1	0	1	3.37210	26.410	0.6
4	1	1	0	2.65900	33.679	20.4
5	0	0	2	2.47550	36.259	22.9
6	-1	-1	1	2.34250	38.396	100.0
7	2	0	0	2.30280	39.085	2.3
8	1	0	2	2.18050	41.375	1.2
9	2	0	1	2.08800	43.298	0.1
10	-1	-1	2	1.81180	50.321	18.5
11	2	1	0	1.74070	52.530	0.3
12	2	0	2	1.68610	54.368	0.6
13	0	0	3	1.65030	55.649	1.9
14	-2	-1	1	1.64220	55.947	3.4
15	3	0	0	1.53520	60.233	12.9
16	3	0	1	1.46630	63.382	0.4
17	-2	-1	2	1.42390	65.501	0.2
18	-1	-1	3	1.40220	66.645	11.2
19	2	0	3	1.34140	70.094	0.1
20	2	2	0	1.32950	70.815	1.3

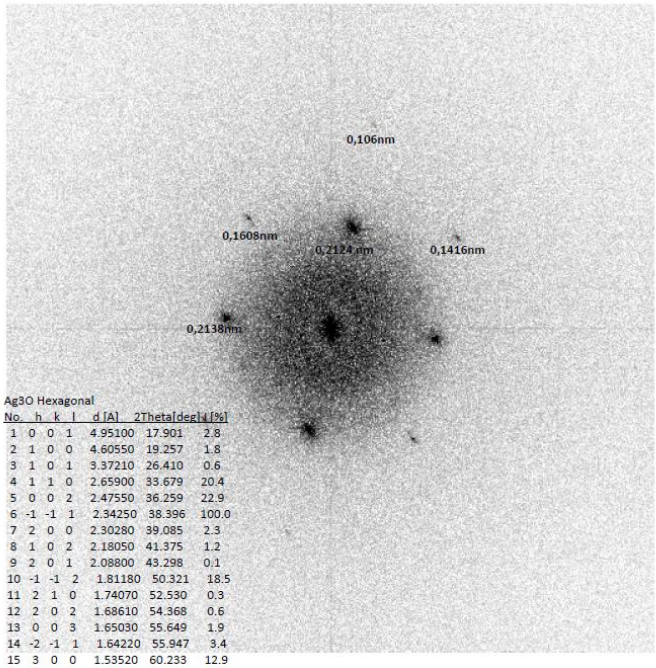
Ag Cubic

h	k	l	d [A]	2Theta[deg]	I [%]
1	1	1	2,35040	38,262	100,0
2	2	0	0	2,03550	44,473	45,1
3	2	2	0	1,43930	64,714	22,3
4	3	1	1	1,22740	77,745	22,1
5	2	2	2	1,17520	81,910	6,1
6	4	0	0	1,01780	98,371	2,6
7	3	3	1	0,93400	111,123	7,9

Ag(II)Si2

AH326-14j-x600000-0015



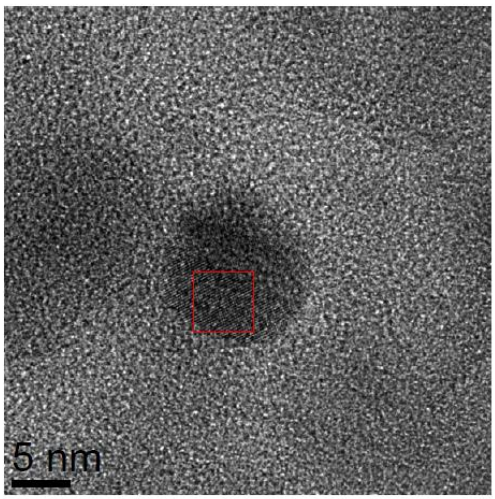


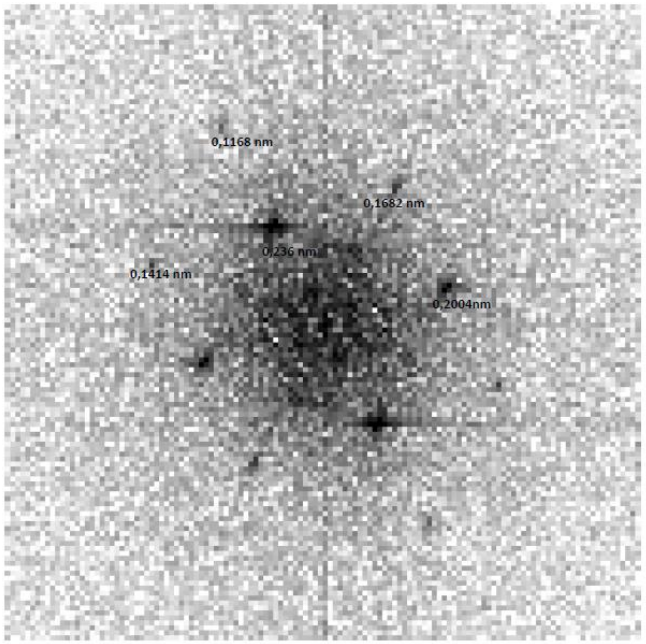
Ag3O Hexagonal

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	0	0	1	4.95100	17.901	2.8
2	1	0	0	4.60550	19.257	1.8
3	1	0	1	3.37210	26.410	0.6
4	1	1	0	2.65900	33.679	20.4
5	0	0	2	2.47550	36.259	22.9
6	-1	-1	1	2.34250	38.396	100.0
7	2	0	0	2.30280	39.085	2.3
8	1	0	2	2.18050	41.375	1.2
9	2	0	1	2.08800	43.298	0.1
10	-1	-1	2	1.81180	50.321	18.5
11	2	1	0	1.74070	52.530	0.3
12	2	0	2	1.68610	54.368	0.6
13	0	0	3	1.65030	55.649	1.9
14	-2	-1	1	1.64220	55.947	3.4
15	3	0	0	1.53520	60.233	12.9
16	3	0	1	1.46630	63.382	0.4
17	-2	-1	2	1.42390	65.501	0.2
18	-1	-1	3	1.40220	66.645	11.2
19	2	0	3	1.34140	70.094	0.1
20	2	2	0	1.32950	70.815	1.3

Ag(II)Si5

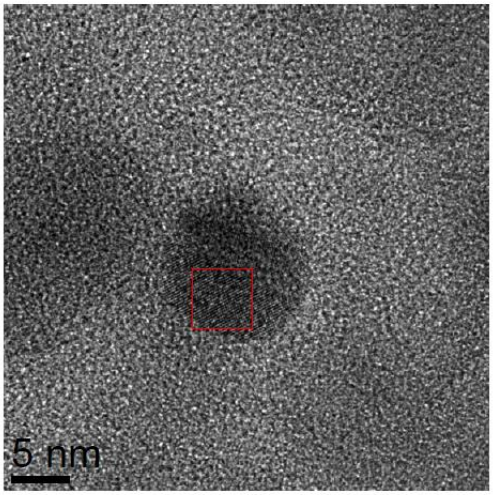
AH324-14j-x500000-0015

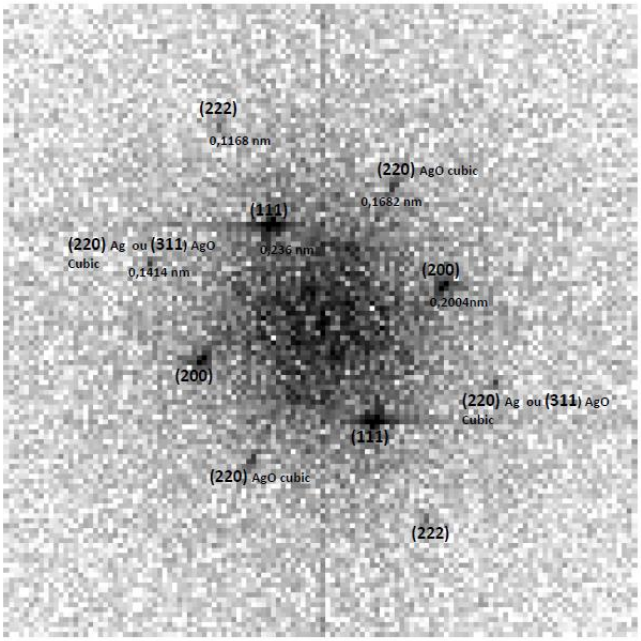




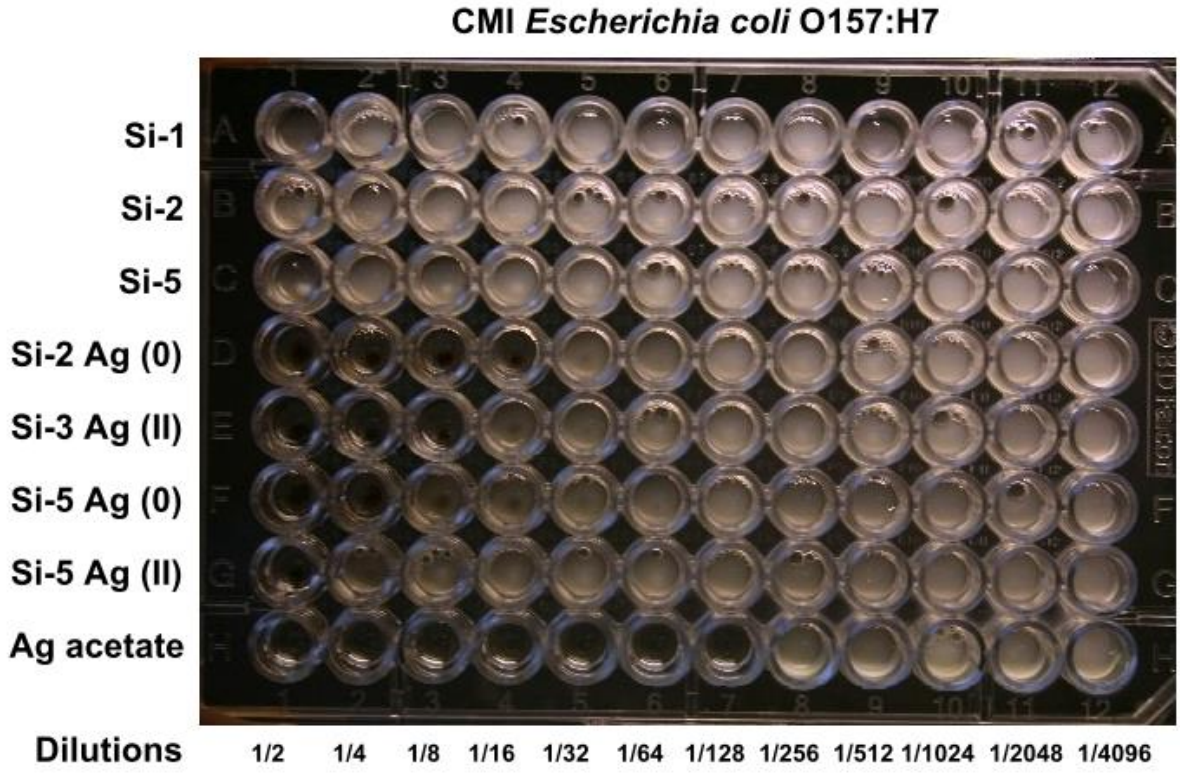
Ag(II)Si5

AH324-14j-x500000-0015





MIC picture for E. coli



MBC picture for E. coli