A. AUTHORS, INSTITUTIONS, OVERVIEW

Status: Electronic Submission created by ECF v0.98c.1 (beta)

A- 1. TITLE:
CuCO_3 by XPS

A- 2. AUTHORS:
~~No Authors~~ on file. R P Vasquez

A- 3. ABSTRACT:

X-ray photoemission measurements of CuCO_3 are presented. XPS studies of Cu compounds in this laboratory are motivated by the need to identify species on chemically-etched high temperature superconductor surfaces (R. P. Vasquez, M. C. Foote, and B. D. Hunt, J. Appl. Phys. 66, 4866 (1989)).

A- 4. CORRESPONDING AUTHOR:

NAME:	Richard P. Vasquez
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A- 5. TECHNIQUE
XPS

A- 6. # OF DIGITALLY SUBMITTED SPECIMEN SPECTRA FOR SSS PUBLICATION: 6
 # OF DIGITALLY SUBMITTED SPECIMEN SPECTRA FOR ELECTRONIC DATABASE ONLY: 0
 # OF DIGITALLY SUBMITTED CALIBRATION SPECTRA: 0

TOTAL # OF DIGITALLY SUBMITTED SPECTRA (Should be sum of above): 6

A- 7. PUBLISH AUGER DERIVATIVE SPECTRA:
N/A

A- 8. KEY WORDS:
copper carbonate; copper compounds; photoemission; XPS

A- 9. SPECTRA CATEGORY:
comparison

A-10. REFERENCES:

1. H. Seidel, K. Viswanathan, W. Johannes, and H. Ehrhardt, Z. Anorg. Chem. 410, 138 (1974).

A. *AUTHORS, INSTITUTIONS, OVERVIEW*

A-11. ACKNOWLEDGMENTS:
The work described in this paper was performed by the Center for Space Microelectronics Technology, Jet Propulsion Laboratory, California Institute of Technology and was sponsored by the National Aeronautics and Space Administration, Office of Space Science.

B. SPECIMEN DESCRIPTION (specimen 1 of 1)

Specimen #: 1, SSS Accession #

B- 1. HOST MATERIAL:
copper carbonate

B- 2. CAS REGISTRY NUMBER:
1184-64-1

B- 3. MATERIAL DESIGNATION CODE AND ORGANIZATION:

B- 4. HOST COMPOSITION:
CuCO_3

B- 5. CHEMICAL NAME:
carbonic acid, copper (2+) salt (1:1)

B- 6. SPECIMEN MANUFACTURER/SUPPLIER:
J. T. Baker

B- 7. SPECIMEN FORM:
powder

B- 8. LOT NUMBER:
ST-4163

B- 9. STRUCTURAL FORMULA:
monoclinic, a=0.6092 nm, b=0.4493 nm, c=0.703 nm, {beta}=101.34 {deg} (Ref. 1).

B-10. HOMOGENEITY:
homogeneous

B-11. PHASE:
Powder

B-12. CRYSTALLINITY:
unknown crystallinity

B-13. ELECTRICAL CHARACTERISTICS:
dielectric

B-14. MATERIAL FAMILY:
inorganic compound

B-15. SPECIAL MATERIAL CLASSES:
powder

B. SPECIMEN DESCRIPTION (specimen 1 of 1)

B-16. HISTORY AND SIGNIFICANCE:

B-17. AS RECEIVED CONDITION:
reagent grade basic powder

B-18. ANALYZED REGION:
same as host material

B-19. EX SITU PREPARATION AND MOUNTING:
The specimen bottle was unsealed in the ultrahigh purity nitrogen atmosphere of a glove box which encloses the load lock area. The powder was pressed into 99.95% In foil and clipped to the sample holder.

B-20. IN SITU PREPARATION:
none

B-21. SPECIMEN TEMPERATURE DURING ANALYSIS:
300 K

B-22. MAXIMUM CHAMBER PRESSURE DURING ANALYSIS:
1x10^{-7} Pa

B-23. PRE-ANALYSIS BEAM EXPOSURE:
none

B-24. CHARGE CONTROL CONDITIONS AND PROCEDURES:
90% transmitting fine mesh proximity screen, flood gun set to minimize peak widths and asymmetry (2 eV, 950 mA filament current).

C. OVERALL INSTRUMENT DESCRIPTION

C- 1. SPECTROMETER MANUFACTURER:
Surface Science Instruments

C- 2. MANUFACTURER MODEL #:
SSX100-501

C- 3. ANALYZER TYPE:
spherical sector

C- 4. NON-STANDARD ANALYZER OR LENS:
N/A

C- 5. ACCEPTANCE ANGLE FROM ANALYZER AXIS:
0 degrees

C- 6. ANALYZER MODE:
constant pass energy

C- 7. INSTRUMENT THROUGHPUT FUNCTION:
1

C- 8. INSTRUMENT THROUGHPUT FUNCTION COMMENT:
No value supplied

C- 9. EXCITATION SOURCE LABEL:
Al Ka (monochromated)

C-10. EXCITATION SOURCE WINDOW OR FILTER:
Au-coated Mylar

C-11. DETECTOR DESCRIPTION:
position sensitive detector

C-12. NUMBER OF DETECTOR ELEMENTS:
128

C-13. ION GUN MANUFACTURER AND MODEL:

C-14. SPUTTERING CURRENT MEASUREMENT METHOD:

C-15. ION GUN OPERATING PARAMETERS:

ENERGY (IN EV):	No value supplied
CURRENT VALUE:	No value supplied
CURRENT UNITS:	No value supplied
SPUTTERING SPECIES:	No value supplied
SPUTTERING CHARGE:	No value supplied

C. OVERALL INSTRUMENT DESCRIPTION

C-16. ION GUN SPOT SIZE (NORMAL TO SOURCE), uM:

C-17. ION GUN RASTER PARAMETERS (NORMAL TO SOURCE):

RASTERED?	No value supplied
X-RASTER (uM):	No value supplied
Y-RASTER (uM):	No value supplied

C-18. SPUTTERING COMMENTS:

C-19. ANGLES (IN Degrees) FOR THE SUBMISSION:

EMISSION ANGLE	: 0
INCIDENT ANGLE	: 71
SOURCE-TO-ANALYZER ANGLE	: 71
SPECIMEN AZIMUTHAL ANGLE	: 0
SPUTTER SOURCE INCIDENT ANGLE	: No value supplied
SPUTTER SOURCE POLAR ANGLE	: No value supplied
SPUTTER SOURCE AZIMUTHAL ANGLE	: No value supplied

C-20. ANGULAR GEOMETRY COMMENTS:

D. CALIBRATION INFORMATION

D- 1. CALIBRATION SUMMARY

Line	ID #	TRANSITION (note)	PEAK ENERGY	PEAK WIDTH	PEAK AMP	SENS. FACTOR	CONCEN-TRATION
1		Au 4f_{7/2}	84.0+/-0.1	0.85			
2		Cu 2p_{3/2}	932.5+/-0.1	1.1			

Peak Assignments:

None on file

Peak Comments:

None on file

COMMENTS TO CALIBRATION SUMMARY TABLE:

E. VARIABLE INSTRUMENT PARAMETERS (set 1 of 3)

E- 1. PARAMETER SET #:
1

E- 2. SOURCE ENERGY:
1486.6 eV

E- 3. SOURCE STRENGTH VALUE AND UNITS:
200 watts

E- 4. SOURCE BEAM SIZE:
X VALUE (uM): 1000
Y VALUE (uM): 1000

E- 5. SOURCE RASTER:
No

E- 6. SOURCE BEAM SIZE AT SPECIMEN SURFACE:
X VALUE (uM): 1743
Y VALUE (uM): 1000

E- 7. RASTER FRAME RATE

E- 8. ANALYZER RESOLUTION:
1.5 eV

E- 9. ANALYZER CONSTANTS
Pass Energy: 150

E-10. ANALYZER WIDTHS

WAS THE ANALYZER WIDTH CONSTANT WITH ENERGY? No
X VALUE (uM): 2000
Y VALUE (uM): 2000
IF ENERGY DEPENDENT, MEASURED AT (eV): 1000

E-11. ANALYZER ANGULAR ACCEPTANCE WIDTH
WAS THE ANALYZER ANGULAR ACCEPTANCE ANGLE CONSTANT WITH ENERGY? Yes
X ANGLE (degrees): 30
Y ANGLE (degrees): 30
IF ENERGY DEPENDENT, MEASURED AT (eV): N/A

E. VARIABLE INSTRUMENT PARAMETERS (set 2 of 3)

E- 1. PARAMETER SET #:
2

E- 2. SOURCE ENERGY:
1486.6 eV

E- 3. SOURCE STRENGTH VALUE AND UNITS:
50 watts

E- 4. SOURCE BEAM SIZE:
X VALUE (uM): 300
Y VALUE (uM): 300

E- 5. SOURCE RASTER:
No

E- 6. SOURCE BEAM SIZE AT SPECIMEN SURFACE:
X VALUE (uM): 523
Y VALUE (uM): 300

E- 7. RASTER FRAME RATE

E- 8. ANALYZER RESOLUTION:
0.25 eV

E- 9. ANALYZER CONSTANTS
Pass Energy: 25

E-10. ANALYZER WIDTHS

WAS THE ANALYZER WIDTH CONSTANT WITH ENERGY? No
X VALUE (uM): 2000
Y VALUE (uM): 2000
IF ENERGY DEPENDENT, MEASURED AT (eV): 1000

E-11. ANALYZER ANGULAR ACCEPTANCE WIDTH
WAS THE ANALYZER ANGULAR ACCEPTANCE ANGLE CONSTANT WITH ENERGY? Yes
X ANGLE (degrees): 30
Y ANGLE (degrees): 30
IF ENERGY DEPENDENT, MEASURED AT (eV): N/A

E. VARIABLE INSTRUMENT PARAMETERS (set 3 of 3)

E- 1. PARAMETER SET #:
3

E- 2. SOURCE ENERGY:
1486.6 eV

E- 3. SOURCE STRENGTH VALUE AND UNITS:
100 watts

E- 4. SOURCE BEAM SIZE:
X VALUE (uM): 600
Y VALUE (uM): 600

E- 5. SOURCE RASTER:
No

E- 6. SOURCE BEAM SIZE AT SPECIMEN SURFACE:
X VALUE (uM): 1046
Y VALUE (uM): 600

E- 7. RASTER FRAME RATE

E- 8. ANALYZER RESOLUTION:
1 eV

E- 9. ANALYZER CONSTANTS
Pass Energy: 100

E-10. ANALYZER WIDTHS

WAS THE ANALYZER WIDTH CONSTANT WITH ENERGY? No
X VALUE (uM): 2000
Y VALUE (uM): 2000
IF ENERGY DEPENDENT, MEASURED AT (eV): 1000

E-11. ANALYZER ANGULAR ACCEPTANCE WIDTH
WAS THE ANALYZER ANGULAR ACCEPTANCE ANGLE CONSTANT WITH ENERGY? Yes
X ANGLE (degrees): 30
Y ANGLE (degrees): 30
IF ENERGY DEPENDENT, MEASURED AT (eV): N/A

F. SPECTRUM PARAMETERS (spectrum 1 of 6)

F- 1. SPECTRUM #:
1

F- 2. SUGGESTED PUBLICATION STATUS OF THIS SPECTRUM:
Print in SSS

F- 3. SPECTRUM FILE NAME:
CuCO3_1

F- 4. IS THIS A SPECIMEN OR CALIBRATION SPECTRUM?
specimen

F- 5. PARAMETER SET # TO USE:
1

F- 6. DATE:
2/10/89

F- 7. SPECIES LABELS: / F- 8. TRANSITION LABELS:
survey

F- 9. SPECTRAL REGION COMMENT:

F-10. ABSCISSA LABEL:
binding

F-11. ABSCISSA VALUES (eV):
STARTING VALUE: 1100
INCREMENT VALUE: -1.074

F-12. ORDINATE LABEL:
intensity

F-13. ORDINATE UNITS (may be changed from original submission -- please see the enclosed "Database Proof Notes"):
counts

F-14. NUMBER OF DATA CHANNELS:
1024

F-15. NUMBER OF SCANS:
1

F-16. SIGNAL MODE:
multichannel direct

F-17. DETECTOR WIDTH

F. SPECTRUM PARAMETERS (spectrum 1 of 6)

F-18. TOTAL SIGNAL ACCUMULATION TIME (Seconds):
480

F-19. TOTAL ELAPSED TIME (Seconds):
480

F-20. SIGNAL INTENSITY CORRECTION:
No

F-21. SIGNAL INTENSITY CORRECTION COMMENT (If YES to F-20):

F-22. SIGNAL MODULATION METHOD:
none

F-23. LOCK-IN PARAMETERS:
PEAK-TO-PEAK AMPLITUDE: UNITS:
MODULATION FREQUENCY (HZ):
TIME CONSTANT OF LOCK-IN AMPLIFIER (Seconds):

F. SPECTRUM PARAMETERS (spectrum 2 of 6)

F- 1. SPECTRUM #:
2

F- 2. SUGGESTED PUBLICATION STATUS OF THIS SPECTRUM:
Print in SSS

F- 3. SPECTRUM FILE NAME:
CuCO3_2

F- 4. IS THIS A SPECIMEN OR CALIBRATION SPECTRUM?
specimen

F- 5. PARAMETER SET # TO USE:
2

F- 6. DATE:
2/10/89

F- 7. SPECIES LABELS: / F- 8. TRANSITION LABELS:
Cu 2p_{3/2}

F- 9. SPECTRAL REGION COMMENT:

F-10. ABSCISSA LABEL:
binding

F-11. ABSCISSA VALUES (eV):
STARTING VALUE: 945
INCREMENT VALUE: -0.156

F-12. ORDINATE LABEL:
intensity

F-13. ORDINATE UNITS (may be changed from original submission -- please see the enclosed "Database Proof Notes"):
counts

F-14. NUMBER OF DATA CHANNELS:
128

F-15. NUMBER OF SCANS:
20

F-16. SIGNAL MODE:
multichannel direct

F-17. DETECTOR WIDTH

F. SPECTRUM PARAMETERS (spectrum 2 of 6)

F-18. TOTAL SIGNAL ACCUMULATION TIME (Seconds):
1200

F-19. TOTAL ELAPSED TIME (Seconds):
1200

F-20. SIGNAL INTENSITY CORRECTION:
No

F-21. SIGNAL INTENSITY CORRECTION COMMENT (If YES to F-20):

F-22. SIGNAL MODULATION METHOD:
none

F-23. LOCK-IN PARAMETERS:
PEAK-TO-PEAK AMPLITUDE: UNITS:
MODULATION FREQUENCY (HZ):
TIME CONSTANT OF LOCK-IN AMPLIFIER (Seconds):

F. SPECTRUM PARAMETERS (spectrum 3 of 6)

F- 1. SPECTRUM #:
3

F- 2. SUGGESTED PUBLICATION STATUS OF THIS SPECTRUM:
Print in SSS

F- 3. SPECTRUM FILE NAME:
CuCO3_3

F- 4. IS THIS A SPECIMEN OR CALIBRATION SPECTRUM?
specimen

F- 5. PARAMETER SET # TO USE:
2

F- 6. DATE:
2/10/89

F- 7. SPECIES LABELS: / F- 8. TRANSITION LABELS:
Cu 2p

F- 9. SPECTRAL REGION COMMENT:

F-10. ABSCISSA LABEL:
binding

F-11. ABSCISSA VALUES (eV):
STARTING VALUE: 975
INCREMENT VALUE: -0.195

F-12. ORDINATE LABEL:
intensity

F-13. ORDINATE UNITS (may be changed from original submission -- please see the enclosed "Database Proof Notes"):
counts

F-14. NUMBER OF DATA CHANNELS:
256

F-15. NUMBER OF SCANS:
50

F-16. SIGNAL MODE:
multichannel direct

F-17. DETECTOR WIDTH

F. SPECTRUM PARAMETERS (spectrum 3 of 6)

F-18. TOTAL SIGNAL ACCUMULATION TIME (Seconds):
6000

F-19. TOTAL ELAPSED TIME (Seconds):
6000

F-20. SIGNAL INTENSITY CORRECTION:
No

F-21. SIGNAL INTENSITY CORRECTION COMMENT (If YES to F-20):

F-22. SIGNAL MODULATION METHOD:
none

F-23. LOCK-IN PARAMETERS:
PEAK-TO-PEAK AMPLITUDE: UNITS:
MODULATION FREQUENCY (HZ):
TIME CONSTANT OF LOCK-IN AMPLIFIER (Seconds):

F. SPECTRUM PARAMETERS (spectrum 4 of 6)

F- 1. SPECTRUM #:
4

F- 2. SUGGESTED PUBLICATION STATUS OF THIS SPECTRUM:
Print in SSS

F- 3. SPECTRUM FILE NAME:
CuCO3_4

F- 4. IS THIS A SPECIMEN OR CALIBRATION SPECTRUM?
specimen

F- 5. PARAMETER SET # TO USE:
2

F- 6. DATE:
2/10/89

F- 7. SPECIES LABELS: / F- 8. TRANSITION LABELS:
O 1s

F- 9. SPECTRAL REGION COMMENT:

F-10. ABSCISSA LABEL:
binding

F-11. ABSCISSA VALUES (eV):
STARTING VALUE: 537
INCREMENT VALUE: -0.117

F-12. ORDINATE LABEL:
intensity

F-13. ORDINATE UNITS (may be changed from original submission -- please see the enclosed "Database Proof Notes"):
counts

F-14. NUMBER OF DATA CHANNELS:
128

F-15. NUMBER OF SCANS:
20

F-16. SIGNAL MODE:
multichannel direct

F-17. DETECTOR WIDTH

F. SPECTRUM PARAMETERS (spectrum 4 of 6)

F-18. TOTAL SIGNAL ACCUMULATION TIME (Seconds):
1200

F-19. TOTAL ELAPSED TIME (Seconds):
1200

F-20. SIGNAL INTENSITY CORRECTION:
No

F-21. SIGNAL INTENSITY CORRECTION COMMENT (If YES to F-20):

F-22. SIGNAL MODULATION METHOD:
none

F-23. LOCK-IN PARAMETERS:
PEAK-TO-PEAK AMPLITUDE: UNITS:
MODULATION FREQUENCY (HZ):
TIME CONSTANT OF LOCK-IN AMPLIFIER (Seconds):

F. SPECTRUM PARAMETERS (spectrum 5 of 6)

F- 1. SPECTRUM #:
5

F- 2. SUGGESTED PUBLICATION STATUS OF THIS SPECTRUM:
Print in SSS

F- 3. SPECTRUM FILE NAME:
CuCO3_5

F- 4. IS THIS A SPECIMEN OR CALIBRATION SPECTRUM?
specimen

F- 5. PARAMETER SET # TO USE:
3

F- 6. DATE:
2/10/89

F- 7. SPECIES LABELS: / F- 8. TRANSITION LABELS:
Cu LMM

F- 9. SPECTRAL REGION COMMENT:

F-10. ABSCISSA LABEL:
binding

F-11. ABSCISSA VALUES (eV):
STARTING VALUE: 590
INCREMENT VALUE: -0.195

F-12. ORDINATE LABEL:
intensity

F-13. ORDINATE UNITS (may be changed from original submission -- please see the enclosed "Database Proof Notes"):
counts

F-14. NUMBER OF DATA CHANNELS:
256

F-15. NUMBER OF SCANS:
20

F-16. SIGNAL MODE:
multichannel direct

F-17. DETECTOR WIDTH

F. SPECTRUM PARAMETERS (spectrum 5 of 6)

F-18. TOTAL SIGNAL ACCUMULATION TIME (Seconds):
2400

F-19. TOTAL ELAPSED TIME (Seconds):
2400

F-20. SIGNAL INTENSITY CORRECTION:
No

F-21. SIGNAL INTENSITY CORRECTION COMMENT (If YES to F-20):

F-22. SIGNAL MODULATION METHOD:
none

F-23. LOCK-IN PARAMETERS:
PEAK-TO-PEAK AMPLITUDE: UNITS:
MODULATION FREQUENCY (HZ):
TIME CONSTANT OF LOCK-IN AMPLIFIER (Seconds):

F. SPECTRUM PARAMETERS (spectrum 6 of 6)

F- 1. SPECTRUM #:
6

F- 2. SUGGESTED PUBLICATION STATUS OF THIS SPECTRUM:
Database only

F- 3. SPECTRUM FILE NAME:
CuCO3_6

F- 4. IS THIS A SPECIMEN OR CALIBRATION SPECTRUM?
specimen

F- 5. PARAMETER SET # TO USE:
3

F- 6. DATE:
2/10/89

F- 7. SPECIES LABELS: / F- 8. TRANSITION LABELS:
C 1s

F- 9. SPECTRAL REGION COMMENT:

F-10. ABSCISSA LABEL:
binding

F-11. ABSCISSA VALUES (eV):
STARTING VALUE: 293
INCREMENT VALUE: -0.117

F-12. ORDINATE LABEL:
intensity

F-13. ORDINATE UNITS (may be changed from original submission -- please see the enclosed "Database Proof Notes"):
counts

F-14. NUMBER OF DATA CHANNELS:
128

F-15. NUMBER OF SCANS:
10

F-16. SIGNAL MODE:
multichannel direct

F-17. DETECTOR WIDTH

F. SPECTRUM PARAMETERS (spectrum 6 of 6)

F-18. TOTAL SIGNAL ACCUMULATION TIME (Seconds):
600

F-19. TOTAL ELAPSED TIME (Seconds):
600

F-20. SIGNAL INTENSITY CORRECTION:
No

F-21. SIGNAL INTENSITY CORRECTION COMMENT (If YES to F-20):

F-22. SIGNAL MODULATION METHOD:
none

F-23. LOCK-IN PARAMETERS:
PEAK-TO-PEAK AMPLITUDE: UNITS:
MODULATION FREQUENCY (HZ):
TIME CONSTANT OF LOCK-IN AMPLIFIER (Seconds):

No Part G records on file for this Submission.

H. ANALYSIS METHODS

H- 1. ENERGY SCALE CORRECTION:
Corrected binding energies are referenced to the C 1s at 284.6 eV, resulting in a shift of +2.25 eV.

H- 2. RECOMMENDED ENERGY-SCALE SHIFT:
+2.25 eV

H- 3. INTENSITY SCALE CORRECTION:
none

H- 4. PEAK SHAPE AND BACKGROUND METHODS:
Shirley background subtraction is used in the least squares fitting. Peak positions and widths are determined from least squares fitting using the standard SSI software. The peak shape is fixed to a mix of 80% Gaussian-20% Lorentzian with an asymmetry parameter of 0.

H- 5. QUANTITATION METHOD:
Sensitivity factors are from the standard SSI software. The peak positions and widths are from the least squares fits of the high resolution spectra, while the peak areas are the areas above the linear background from the survey spectrum. The composition was calculated from the standard SSI software.

I. SPECTRAL FEATURES DESCRIPTIONS

I- 1. MAJOR ELEMENTS:
Cu, O, C

I- 2. MINOR ELEMENTS:
none

I- 3. PEAK AMPLITUDE METHOD:
peak area

I- 4. PEAK AMPLITUDE UNITS:
counts

I- 5. CONCENTRATION UNITS:
atomic percent

I- 6. TABLE OF SPECTRAL FEATURES:

Line	ID #	TRANSITION (note)	PEAK ENERGY	PEAK WIDTH	PEAK AMP	SENS. FACTOR	CONCEN-TRATION
1	2	Cu 2p_{3/2}	934.0	3.8			
2	4	O 1s	530.75	2.7			
3	6	C 1s	289.1	2.8			
4	6	C 1s	284.6	3.0			
5	1	Cu 2p_{3/2}			38081	9.748	14.1
6	5	Cu LMM	569.45				
7	1	Cu 2p_{3/2}			49517	9.748	27.07
8	1	O 1s			25798	2.494	55.12
9	1	C 1s			3343	1.000	17.81

Peak Assignments:

3. carbonate
4. adventitious carbon

Features Table Footnotes:

None on file

COMMENTS TO TABLE OF SPECTRAL FEATURES:

J. PUBLICATION OPTIONS

Table of Publication Options

Spect. ID #	Transition(s) (as entered on Part F)	Author's File Name	Print in SSS/ Database only	Specimen/ Calibration
1.	survey	CuCO3_1	Print in SSS	specimen
2.	Cu 2p_{3/2}	CuCO3_2	Print in SSS	specimen
3.	Cu 2p	CuCO3_3	Print in SSS	specimen
4.	O 1s	CuCO3_4	Print in SSS	specimen
5.	Cu LMM	CuCO3_5	Print in SSS	specimen
6.	C 1s	CuCO3_6	Database only	specimen

Comments for the Editors:
!! Error. Key not found for table d\submit!

Checklist - A complete submission must include the following:

(X) Completed ECF entry, extracted to zip file on diskette by choosing Tools | Submit to SSS from the ECF menu, PLUS 3 copies of the printed ECF proof.
(X) Hard copies of all spectra (3 copies), annotated with any special requests, and with peaks labeled precisely as you wish them to appear in publication.
(X) Digitized raw data on magnetic disk.

Reviewer Recommendations:
!! Error. Key not found for table d\submit!
!! Error. Key not found for table d\submit!
!! Error. Key not found for table d\submit!

Digitized data disk medium (e.g. high-density 3.5" floppy):
!! Error. Key not found for table d\submit!

Data Format (e.g. PHI: .DIF files):
!! Error. Key not found for table d\submit!

Data Files Source (e.g. MS-DOS, HP BASIC):
!! Error. Key not found for table d\submit!

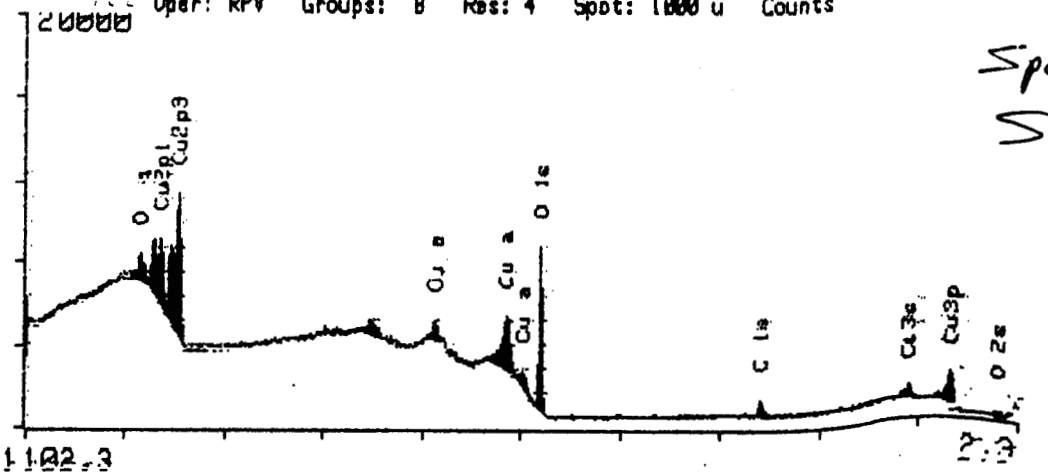
***** END, SSS ELECTRONIC CONTRIBUTOR'S PROOF *****

Thursday 1/20/1994
13:17:23
CuCO3 pressed into In

(1) CuCO3_1

# of Scans 1
Flood Gun 0.0
eV 1101.18
Counts 4905

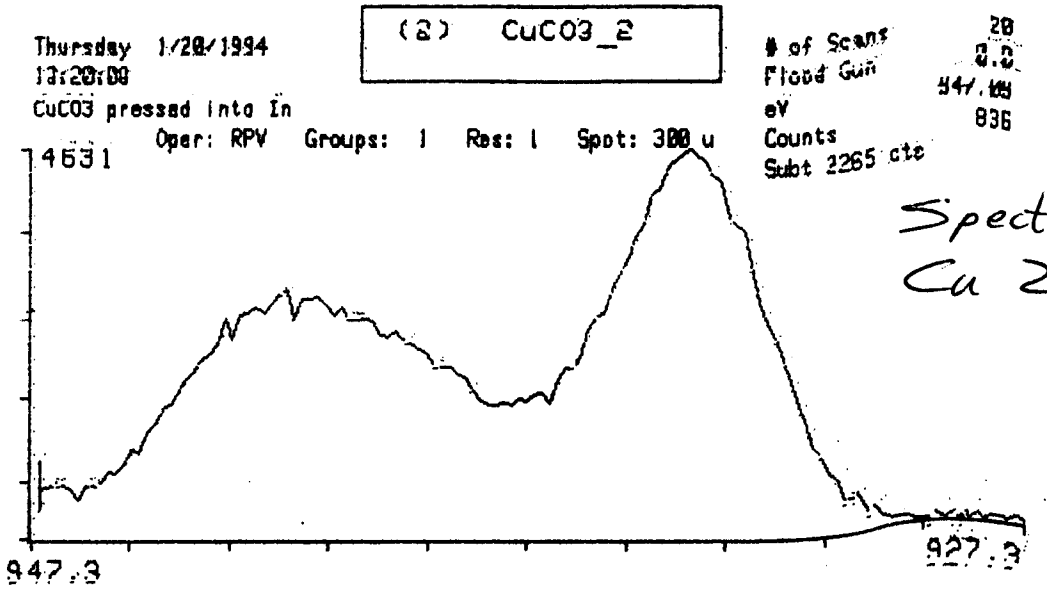
Oper: RPV Groups: 8 Res: 4 Spot: 1000 u



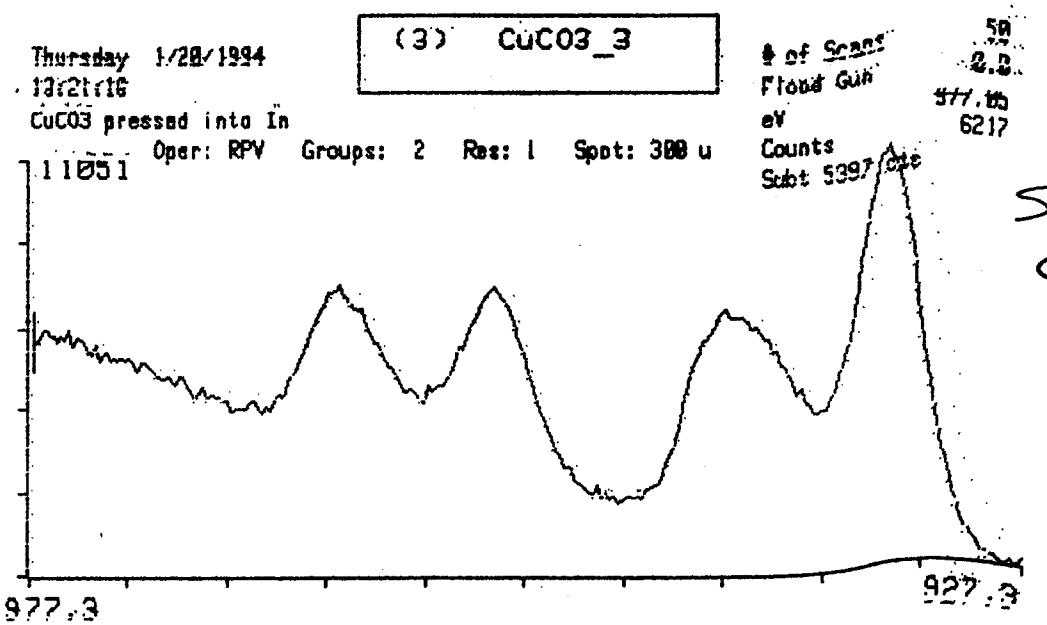
Spectrum #1
Survey

SURFACE COMPOSITION TABLE
CuCO3_1
CuCO3 pressed into In

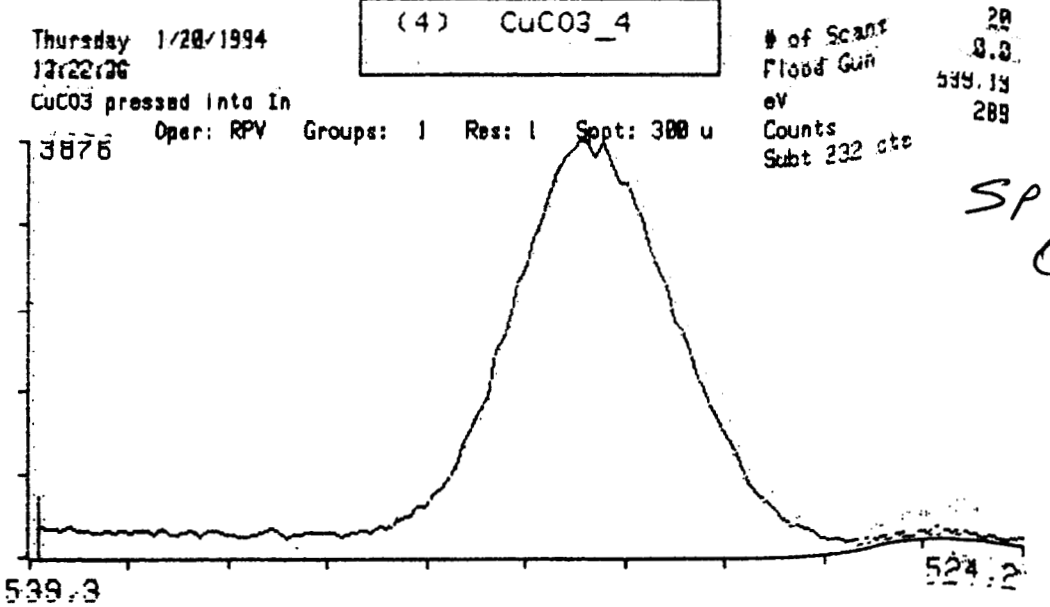
Elem	Corr'd BE	Flood Gun	Delta BE	Sens Factor	# of Scans	eV/ group	Area	Relative Area	Atom %
C 1s	288.34	0.0	-3.74	1.000	1	137.5	3343	359111	17.81
O 1s	530.40	0.0	1.60	2.494	1	137.5	25798	1111390	55.12
Cu2p3	934.46	0.0	-3.46	9.748	1	137.5	49517	545696	27.07



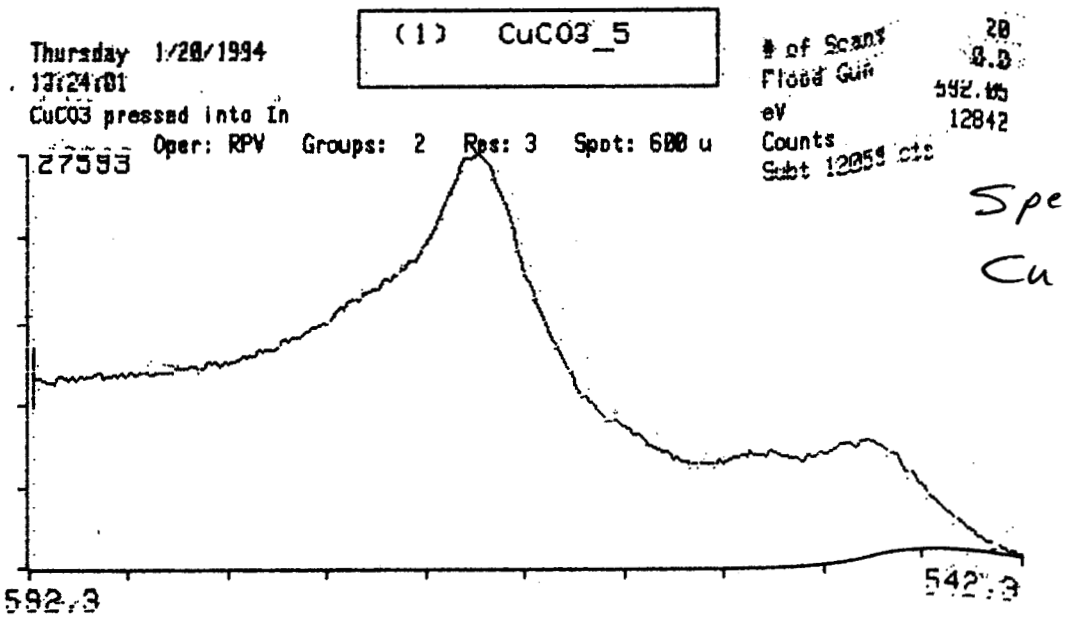
Spectrum #2
Cu $2p_{3/2}$



Spectrum #3
Cu 2p



Spectrum #4
O 1s



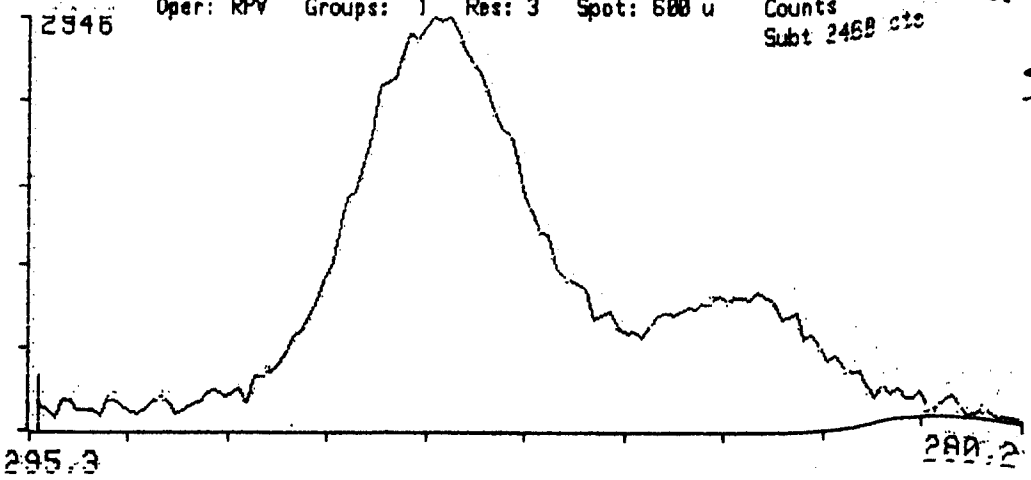
Spectrum #5
Cu LMM

Thursday 1/20/1994
13:25:01
CuCO3 pressed into In

(2) CuCO3_6

Oper: RPV Groups: 1 Res: 3 Spot: 600 u

# of Scans 10
Flood Gun 0.0
eV 295.13
Counts 181
Subt 2468 cts



Spectrum #6
C 1s