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SPRING COLLEGE IN MATERIALS SCIENCE

ON

"METALLIC MATERIALS"

(11 May - 19 June 1987)

AUGER MICROSCOPY AND SPECTROSCOPY, PHOTOELECTRON SPECTROSCOPY

(Lecture III)

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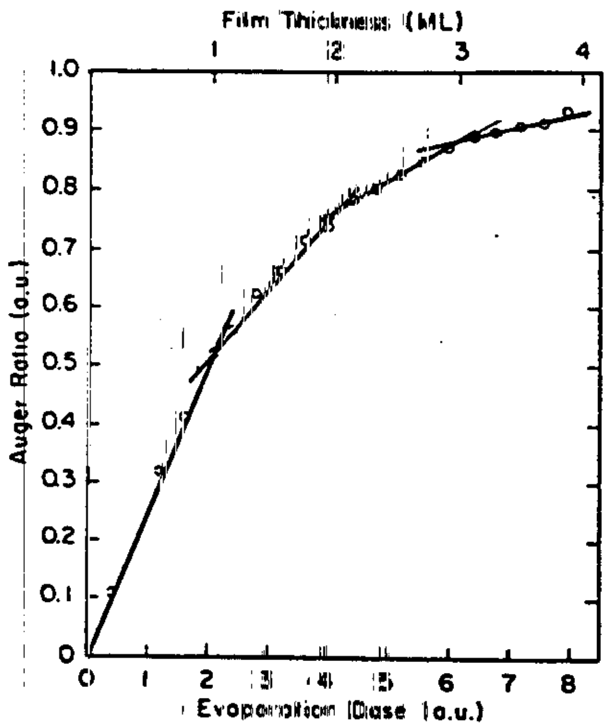
Growth of Co overlayer on Cu(001)



$$\text{Auger Ratio} \quad \frac{Co(656) + Co(716)}{Co(656) + Co(716) + Cu(845) + Cu(920)}$$

Pescia et al. P.R.L. 58, 933, 1987

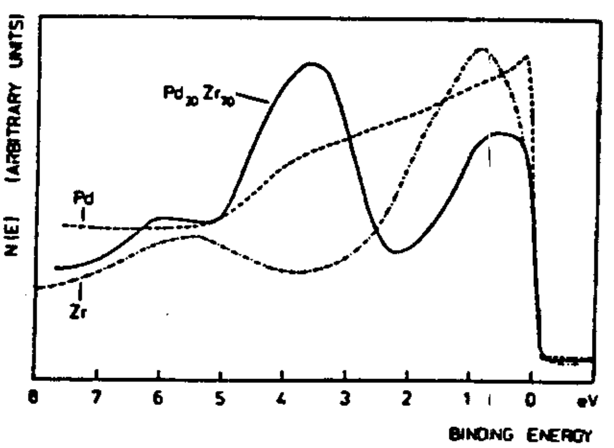


FIG. 1. Uncorrected (without background subtraction) UPS ($h\nu = 40.8$ eV) spectra of the metallic glass $Pd_{30}Zr_{70}$, polycrystalline Pd and Zr.

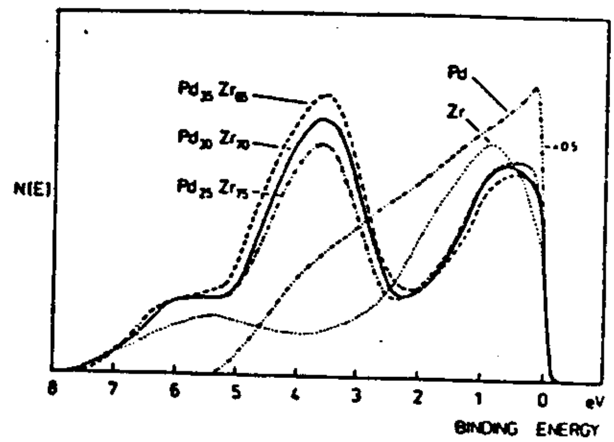


FIG. 2. UPS ($h\nu = 40.8$ eV) spectra of three glassy Pd-Zr alloy compositions, polycrystalline Pd and Zr. The spectra are normalized (see text).

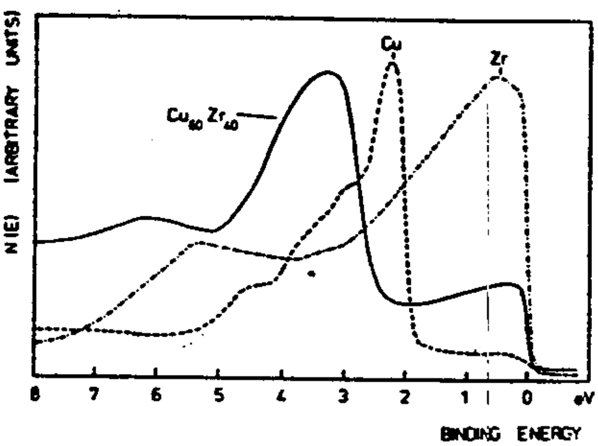


FIG. 3. Uncorrected (without background subtraction) UPS ($h\nu = 21.2$ eV) spectra of glassy $Cu_{60}Zr_{40}$, polycrystalline Cu and Zr.

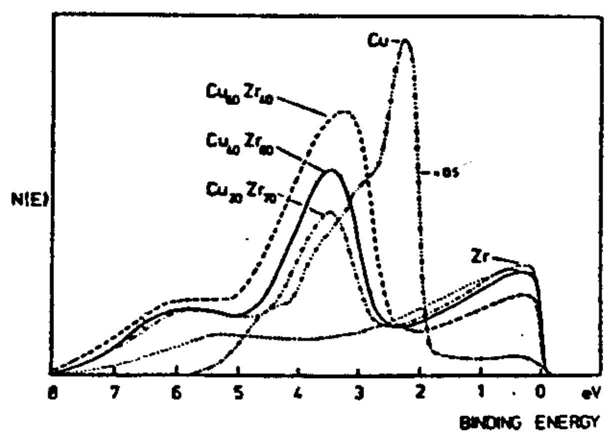


FIG. 4. UPS ($h\nu = 21.2$ eV) spectra of three Cu-Zr samples, polycrystalline Cu and Zr. The spectra are normalized (see text).

Gelhafen et al P.R.L. 43, 1134, 1979.

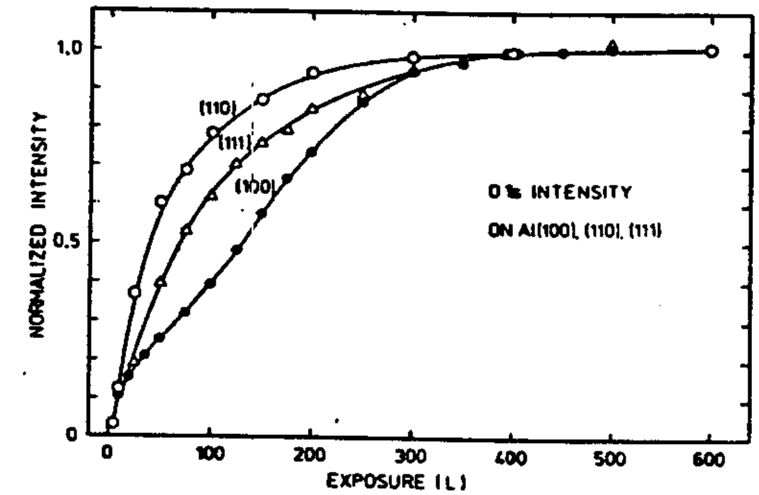


Fig. 2. Intensity change for the O 1s peak on the (100), (110) and (111) crystal faces as a function of oxygen exposure.

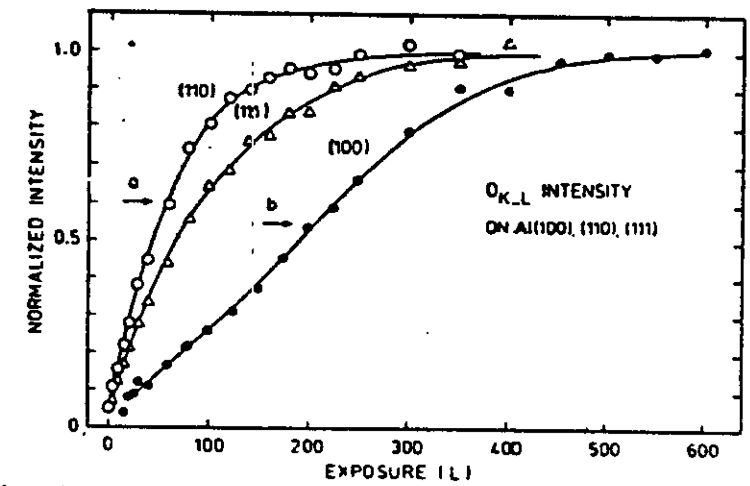
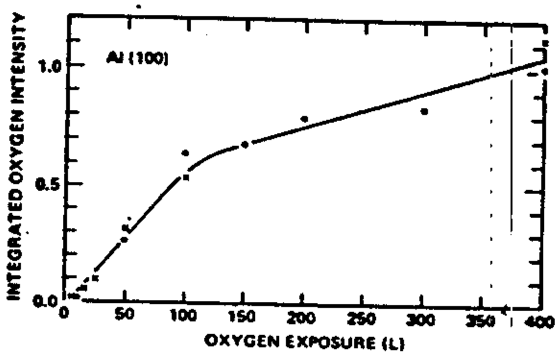
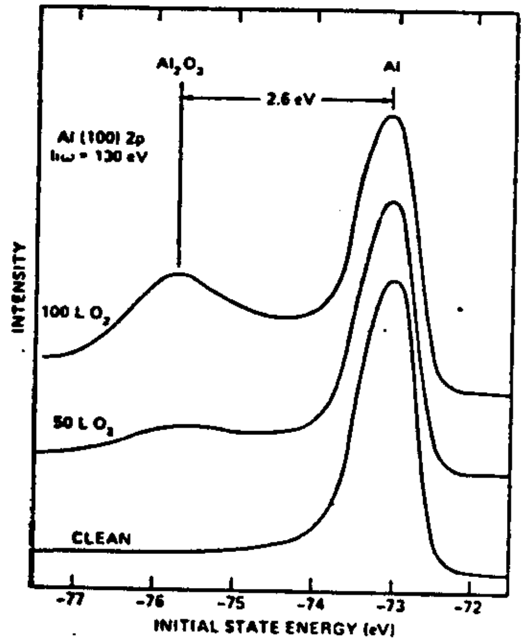


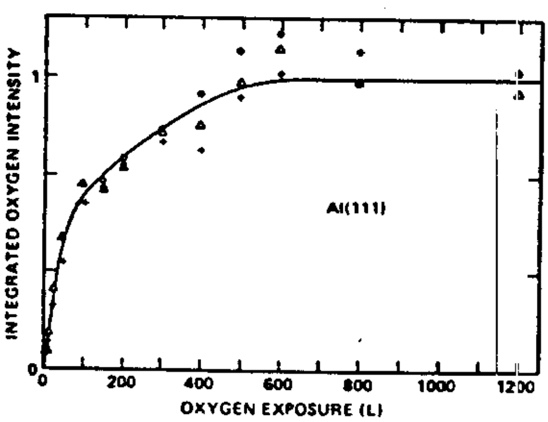
Fig. 1. Intensity change for the O_{KLL} peak on the (100), (110) and (111) crystal faces as a function of oxygen exposure. The disappearence of the LEED pattern from the (110) and (100) faces is indicated by arrows, a and b respectively.



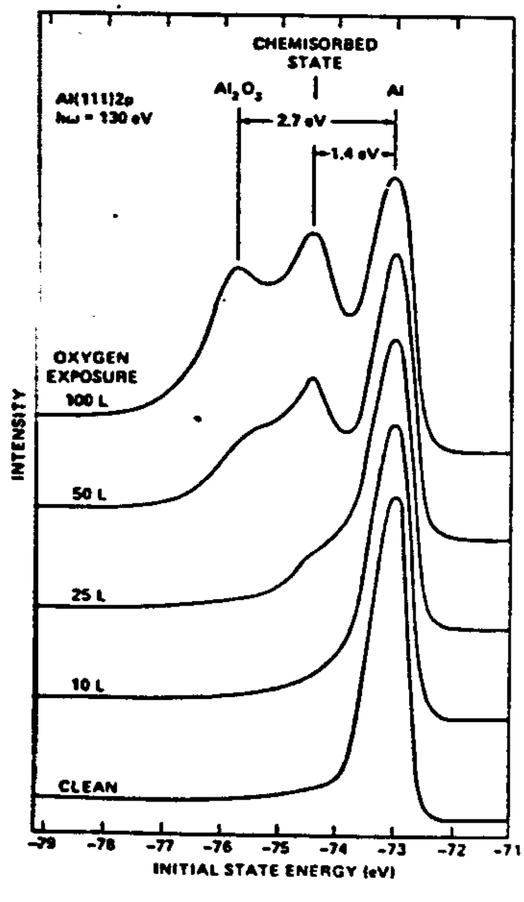
Integrated 2p O_2 intensity
Versus exposure for Al(001) surface.

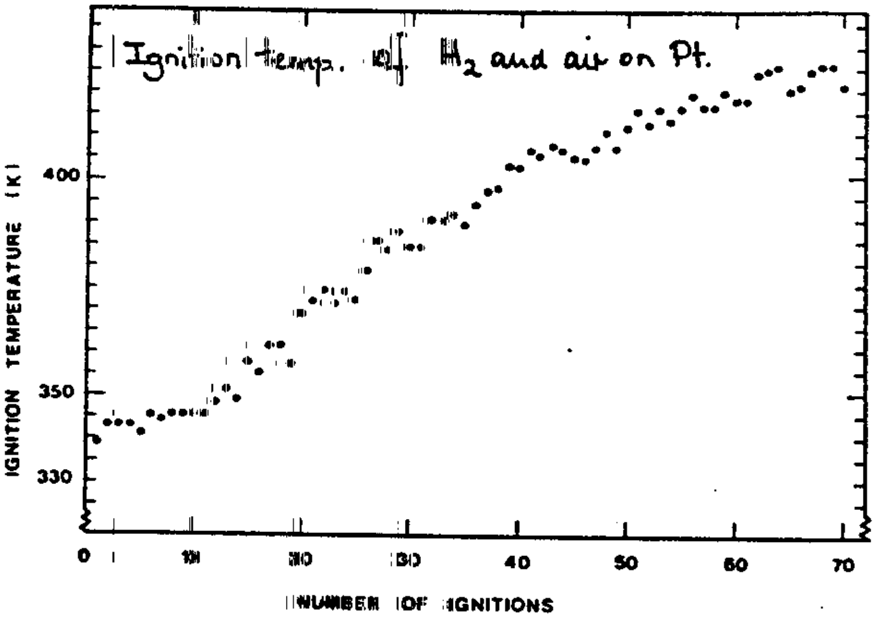


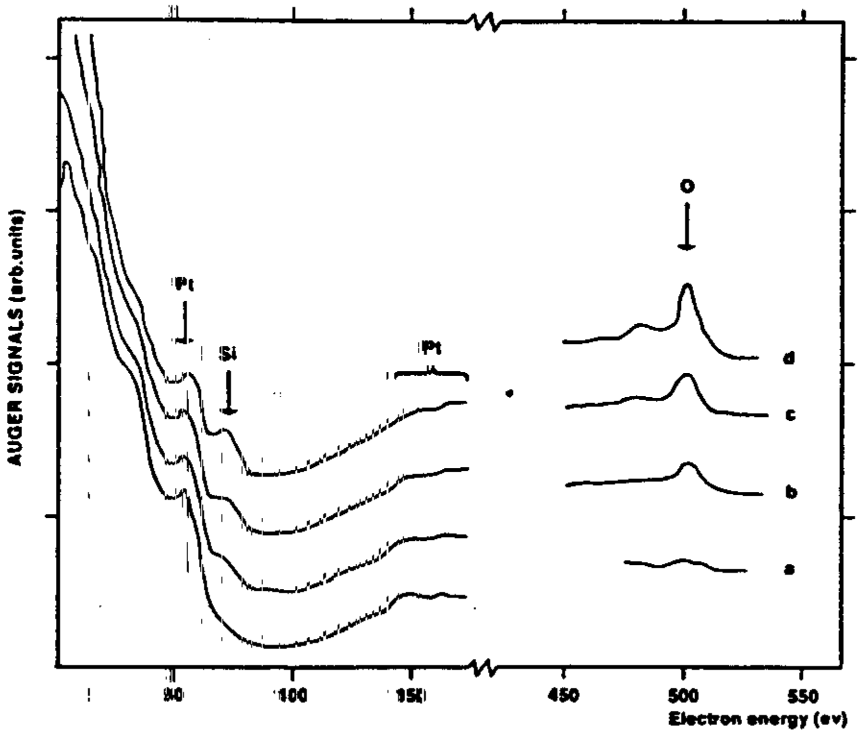
Al 2p spectra.

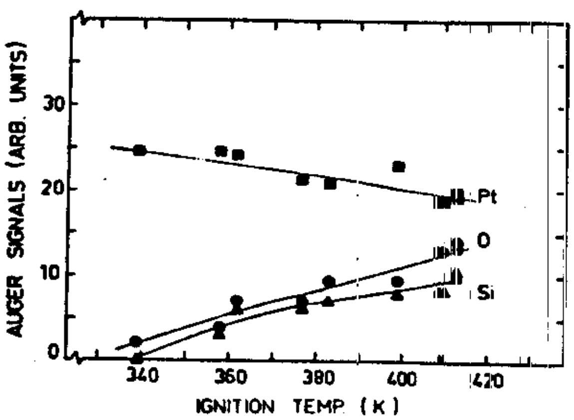


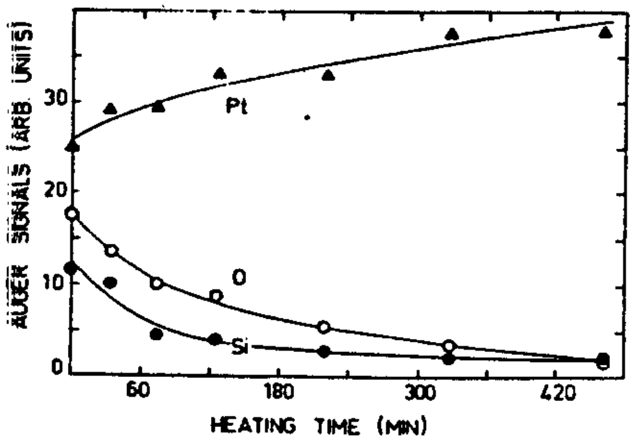
Al(111) surface



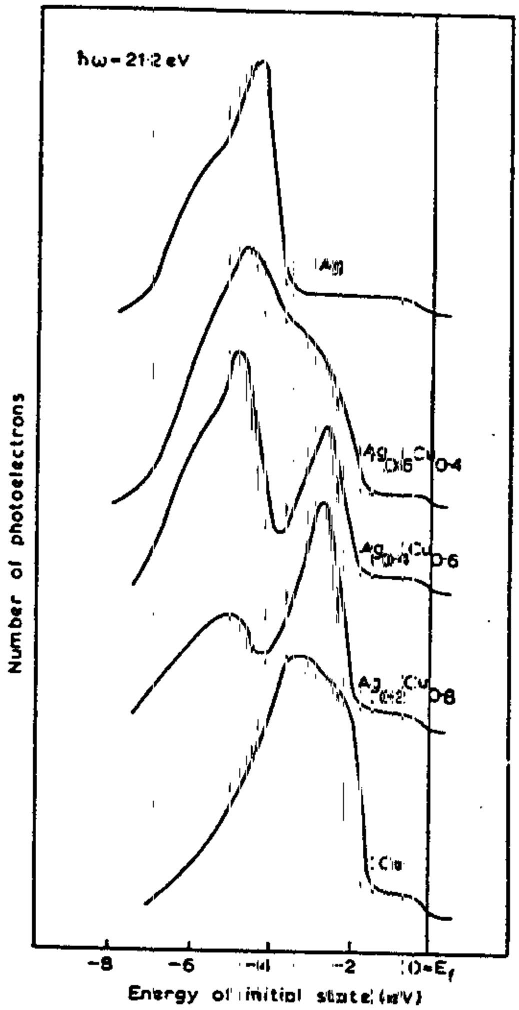

Ignition temp. of H_2 and air on Pt.
IGNITION TEMPERATURE (K)
400
350
330
0
10
20
30
40
50
60
70
NUMBER OF IGNITIONS


AUGER SIGNALS (arb.units)
O
Pt
Si
Pt
d
c
b
a
80
100
150
450
500
550
Electron energy (ev)


AUGER SIGNALS (ARB. UNITS)
30
20
10
0
Pt
O
Si
340
360
380
400
420
IGNITION TEMP. (K)

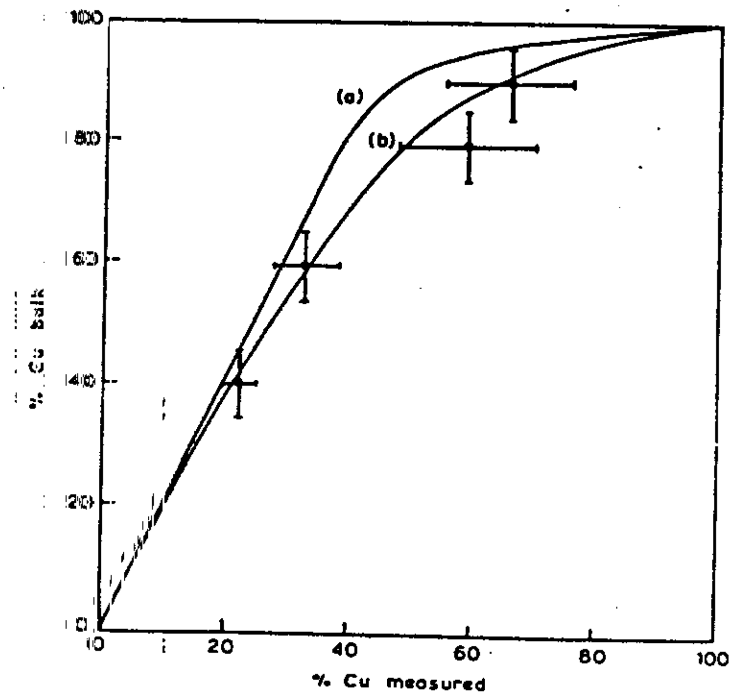

AUGER SIGNALS (ARB. UNITS)
30
20
10
0
Pt
O
Si
60
180
300
420
HEATING TIME (MIN)

6 -i



Surface Enrichm
in
Ag-Cu liquid a

Williams Norris Phil. Mag



Surface enrichment in Ag–Cu alloys. The experimental data are compared with a thermodynamics calculation using (*a*) no surface enthalpy relaxation, (*b*) surface enthalpy relaxation parameter $\delta = 0{\cdot}2$ (see text).