

Abstract Submitted
for the TSF05 Meeting of
The American Physical Society

Auger Parameter of Aluminum¹ RICHARD MILLER, A. CHOURASIA, GEORGE NIXON, Texas A&M University-Commerce — X-ray photoelectron spectroscopy has been employed to determine the Auger parameter of aluminum using the 1s core level. For this purpose the zirconium anode (energy = 2042 eV) has been employed. XPS spectra in the aluminum 1s core level and the X-ray excited Auger region were recorded in a high resolution mode. The modified Auger parameter is defined as the energy difference between the XPS core level and the intense line in the Auger region plus the energy of the x-rays. This parameter then becomes independent of the x-ray source used and provides a powerful tool to identify the chemical states. In this investigation we have studied elemental aluminum, aluminum oxide, aluminum halides, aluminum boride, and aluminum carbide. The Wagner plots for these materials have been constructed. The importance of the Auger parameter in determining the bonding characteristics of aluminum will be discussed.

¹Faculty Research Enhancement Grants, TAMU-Commerce

Anil Chourasia
Texas A&M Univ.-Commerce

Date submitted: 15 Sep 2005

Electronic form version 1.4