

Stanford Electronics Laboratory  
Stanford University  
Stanford, California 94305

March 30, 20XX

Professor W. Walker  
Department of Physics  
Northwestern University  
Evanston, Illinois 59894

Dear Professor Walker:

I am writing to inquire about the availability of postdoctoral positions in your laboratory. My thesis advisor, Professor W. Jones, who suggested that I write to you, informs me that you are initiating a research program in spin-resolved-photoemission spectroscopy, and I would be interested in participating in this research. I am currently a graduate student, and expect to receive my doctorate by this September. My dissertation work is an electron spectroscopic, UHV study of metal interfaces with GaInP.

This work comprised a study of the Schottky barrier formation and morphology of metal overlayers on GaInP. The nature of the metal/GaInP interface of fundamental interest, as it is a prototypical example of a metal interface to a pseudo-binary alloy for which the two cation-anion bonds differ greatly in stability. Since very little work had previously been done in this area, my dissertation work investigated, in detail, specific interfaces with various metals expected to show a wide range of behavior on GaInP. With this information, I examined trends in interface behavior with respect to the properties of the overlayer metal to gain insight into the driving forces determining interface morphology and surface Fermi level motion for the metal/GaInP interface in general. I found that the weak Hg bond plays a critical role in the interface formation, resulting in drastically non-stoichiometric interface morphologies not seen for such binary semiconductors as GaAs.

As noted in my curriculum vitae, before joining Professor Jones' group, I worked for a short time with magnetic surfaces and interfaces, and am especially interested in resuming work on this topic, using spin-resolved-photoemission probe. I believe the postdoctoral position in your lab will provide me with the support and challenge for which I am looking as I continue this work.

A copy of my curriculum vitae is enclosed. Letters of recommendation are available from: Career Development Center, Stanford University, Stanford, CA 94305-3081, (650) 723-1548.

I am looking forward to hearing from you.

Sincerely,

Mark Arnold  
(650) 723-1427 (lab)  
(650) 854-6844 (home)

**An appointment at the CDC can help!**  
(650) 723-3963