

Abstract Submitted  
for the TS4CF08 Meeting of  
The American Physical Society

**Searching for Natures Missing Crystal Structure** THOMAS O. MC-  
CONKIE, DAVID D. ALLRED, GUS L.W. HART, Brigham Young University,  
BRIAN HICKS — A recent report in Nature Materials inferred the existence of  
a few binary crystal structures never before observed or created. The crystal struc-  
tures are simple derivative superstructures of the fcc lattice, with only 4 atoms/cell.  
One of these crystal structures, dubbed L1<sub>3</sub> by the author, has been predicted to  
exist in several binary intermetallic systems. To test these predictions, we used  
sputtering techniques to fabricate thin samples of Pt-Cd close to 3:1 stoichiometry.  
We analyzed the samples using electron diffraction and X-ray diffraction. We have  
found evidence of a new phase but are yet unable to confirm the exact ordering.

Thomas O. McConkie  
Brigham Young University

Date submitted: 23 Sep 2008

Electronic form version 1.4