Contribution ID: **172** Type: **Poster Presentation**

# The formation of ordered phases in Pt-Mo coated systems

*Tuesday, 10 July 2012 17:30 (2 hours)*

## Abstract content <br>   (Max 300 words)

Z.M. KHUMALO 1,2, M. TOPIC2 and C. COMRIE1
1University of Cape Town, Private Bag X3, Rondebosch 7701, South Africa
2 Material Research Department, iThemba LABS, P O Box 722, Somerset West 7192, South Africa

The thermodynamical study of platinum binary systems has both the fundamental and applied aspects. It is due to the fact that the formation of ordered phases increases the strength and surface hardness and could also have an impact on surface activity and chemical properties [1]. The changes in mechanical, physical and chemical properties caused by annealing and plastic deformation could be of significant importance for application of platinum-based systems as catalysis, gas sensors and fuel cells, as superconductors, in optics, electronics and biomedical applications [2-4].
The phase transformation in subsequent formation of ordered phases in Pt-Mo coatings was studied by several complementary techniques, such as X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM) and Rutherford backscattering spectroscopy (RBS).

References
1. B.D. Cullity., Elements of X-ray Diffraction (Second edition)., by Addison-Wesley Publishing company (1978,1956).
2. D. Stojic, T. D. Grozdic, M. P. Marceta Kaninski, V. D. Stanic, International Journal of Hydrogen Energy, 32 (2007) 2314 – 2319.
3. D. Stojic, T. D. Grozdic, M. P. Marceta Kaninski, A. D. Maksic, N. D. Simic, International Journal of Hydrogen Energy, 31 (2006) 841 – 846.
4. G.L. Selman, Platinum Metals Rev., 11 (1967) 132-137.

## Apply to be<br> consider for a student <br>   award (Yes / No)?

no

## Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

no

**Primary author:** Mr KHUMALO, Zakhelumuzi (ithemba LABS)

**Presenter:** Mr KHUMALO, Zakhelumuzi (ithemba LABS)

**Session Classification:** Poster Session

**Track Classification:** Track A - Division for Condensed Matter Physics and Materials