Contribution ID: **381** Type: **Poster Presentation**

Hydrogenation of Ti6Al4V alloy

Wednesday, 13 July 2011 17:00 (2 hours)

<p>Hydrogen is the lightest element and it has the highest energy content per unit of weight of any known element and thus, it can be used as a source of clean energy. Previous research studies on hydrogen storage show that storing hydrogen as a solid hydride is preferred compared to liquid and gas because of the very high pressures and low temperatures needed to maintain the system. Hydrogen storage in solid form offers the safest alternative for transportation and storage of hydrogen. Metal hydrides are known to possess high volumetric hydrogen densities (of the order of 3 to 8 wt.

The research interest of this project is placed on Ti6Al4V alloy as promising candidate for hydrogen storage. The changes in microstructure (volume fractions of alpha- and beta-phase) will be studied as a function of hydrogen concentration and pressure. X Ray Diffraction (XRD) will be used for phase analysis, while the hydrogen content and hydrogen depth profile will be determined by Electron Recoil Detection Analysis (ERDA) and Heavy Ions (ERDA) methods.

Level (Hons, MSc,
   PhD, other)?

MSc

Consider for a student
   award (Yes / No)?

No

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

No

Primary author: Ms SENTSHO, Zeldah (iThemba labs)

Presenter: Ms SENTSHO, Zeldah (iThemba labs)

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