Accepted Manuscript

Nanostructural approach to the thickening behavior and oxidation of calciumstabilized aluminum foams

Behzad Nayebi, Mehdi Mehrabian, Mehdi Shahedi Asl, Mohammadreza Shokouhimehr

PII: S0254-0584(18)30768-5

DOI: 10.1016/j.matchemphys.2018.09.017

Reference: MAC 20946

To appear in: Materials Chemistry and Physics

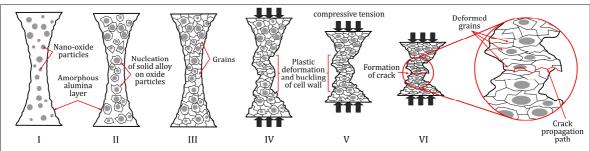
Received Date: 1 June 2018
Revised Date: 27 July 2018

Accepted Date: 2 September 2018

Please cite this article as: B. Nayebi, M. Mehrabian, M. Shahedi Asl, M. Shokouhimehr, Nanostructural approach to the thickening behavior and oxidation of calcium-stabilized aluminum foams, *Materials Chemistry and Physics* (2018), doi: 10.1016/j.matchemphys.2018.09.017.

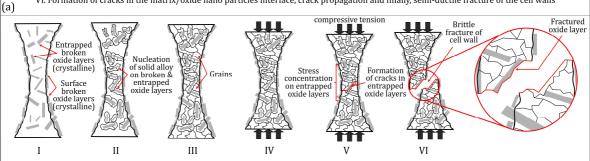
This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.





- I. Formation of cell walls due to bubble stabilization as a result of viscosity increase, derived by entrapped oxide particles
 II. Heterogenous nucleation of solid crystals on the oxide nano-particles
 III. Fine-grained solidified cell wall including oxide nano-particles surrounded by grains

- IV. Applied pressure (Compression test)
- V. Buckling of the cell walls due to fine grained microstructure including spheriodal nano-particles
- $VI.\ Formation\ of\ cracks\ in\ the\ matrix/oxide\ nano\ particles\ interface,\ crack\ propagation\ and\ finally,\ semi-ductile\ fracture\ of\ the\ cell\ walls\ propagation\ and\ finally,\ semi-ductile\ fracture\ of\ the\ cell\ walls\ propagation\ and\ finally\ propagation\ and\ finally\ propagation\ and\ finally\ propagation\ and\ finally\ propagation\ propagation$



- Formation of cell walls due to bubble stabilization as a result of viscosity increase, derived by entrapped and oxide layers
- Heterogenous nucleation of solid crystals on the broken oxide layers
- III. Fine-grained solidified cell wall including broken oxide layers surrounded by grains

(b)

- IV. Applied pressure (Compression test)
 V. Brittle fracture of the entrapped oxide layer in cell wall
- VI. Rapid propagation of crack which leads to brittle fracture of the cell wall

Download English Version:

https://daneshyari.com/en/article/10135586

Download Persian Version:

https://daneshyari.com/article/10135586

<u>Daneshyari.com</u>