Journal Name

ARTICLE

V_2O_x-Based Hole-Selective Contacts for c-Si Interdigitated Back-Contacted Solar Cells

Received 00th January 20xx,
Accepted 00th January 20xx

DOI: 10.1039/x0xx00000x

www.rsc.org/

Gerard Masmitjà,*[a] Luís G. Gerling,[a] Pablo Ortega,[a] Joaquim Puigdollers,[a] Isidro Martín,[a] Cristóbal Voz[a] and Ramón Alcubilla[a]

Electronic Supplementary Information (ESI)

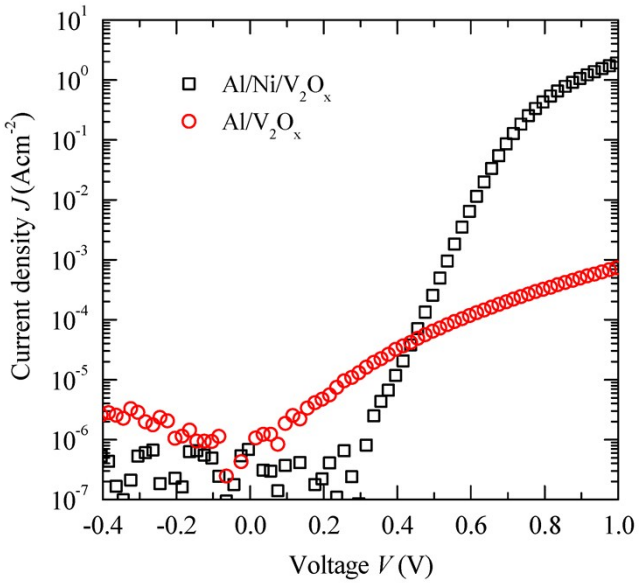

Fig. S1 Measured dark *J-V* characteristics for 40 nm thick V_2O_x on c-Si(n) diode test devices using nickel or aluminium as a capping material. The curves depict a great difference between a diode test device that utilize a Ni layer and another contacted directly with aluminium.

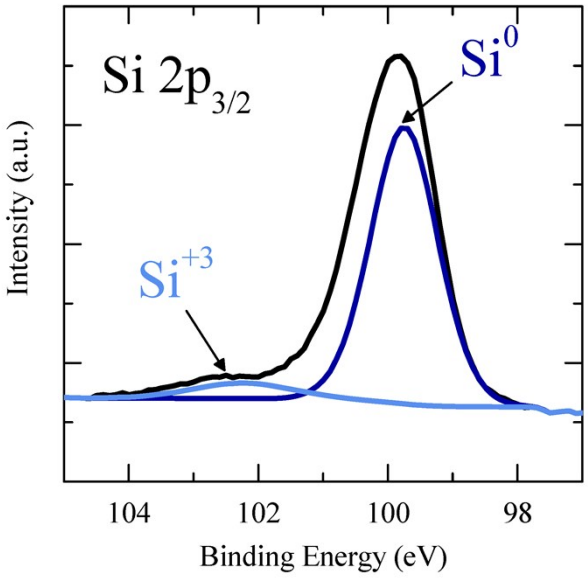

Fig. S2 XPS spectra of the Si 2p core level, showing Si^{+3} and Si^0 oxidation states.

[a] *Department of Electronic Engineering, Universitat Politècnica de Catalunya (UPC), c/ Jordi Girona 1-3, Modulo C-4, 08034 Barcelona, Spain. E-mail: gerard.masmitja@upc.edu*

† Electronic Supplementary Information (ESI) available: Additional *I-V* curve, HR-TEM image, EELS line scan. See DOI: 10.1039/x0xx00000x

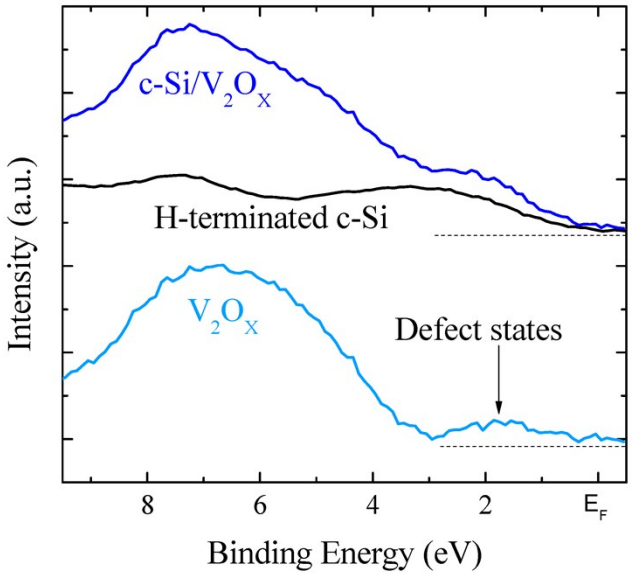

Fig. S3 Valence band spectra measured by XPS in the vicinity of the Fermi level (0 eV), where defect states are observed at ~2 eV.

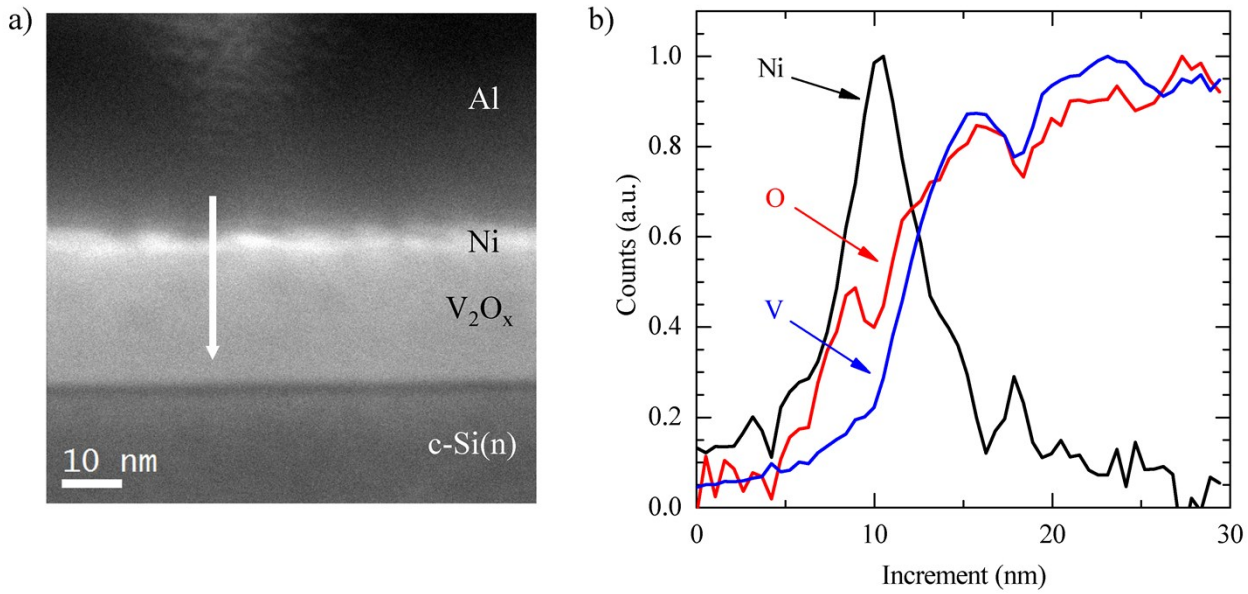

Fig. S4 **a)** High resolution transmission electron microscopy (HR-TEM) image and **b)** an electron energy loss spectroscopy (EELS) line scan across the Al/Ni/V_2O_x contact stack confirms the thin uniform nickel capping layer.