Erratum: “The role of defects in the electrical properties of NbO2 thin film vertical devices” [AIP Advances 6, 125006 (2016)]

This item was submitted to Loughborough University’s Institutional Repository by the/an author.


Additional Information:

• This is an Open Access Article. It is published by AIP Publishing under the Creative Commons Attribution 4.0 International Licence (CC BY). Full details of this licence are available at: http://creativecommons.org/licenses/by/4.0/

Metadata Record: https://dspace.lboro.ac.uk/2134/20907

Version: Published

Publisher: AIP Publishing © Author(s)

Rights: This work is made available according to the conditions of the Creative Commons Attribution 4.0 International (CC BY 4.0) licence. Full details of this licence are available at: http://creativecommons.org/licenses/by/4.0/

Please cite the published version.
Erratum: “The role of defects in the electrical properties of NbO$_2$ thin film vertical devices” [AIP Advances 6, 125006 (2016)]
Toyanath Joshi, Pavel Borisov, and David Lederman

Citation: AIP Advances 7, 019901 (2017); doi: 10.1063/1.4974747
View online: http://dx.doi.org/10.1063/1.4974747
View Table of Contents: http://aip.scitation.org/toc/adv/7/1
Published by the American Institute of Physics
Erratum: “The role of defects in the electrical properties of NbO$_2$ thin film vertical devices” [AIP Advances 6, 125006 (2016)]

Toyanath Joshi,$^1$ Pavel Borisov,$^1$ and David Lederman$^{1,2}$

$^1$Department of Physics and Astronomy, West Virginia University, Morgantown, West Virginia 26506, USA

$^2$Department of Physics, University of California, Santa Cruz, California 95064, USA

(Received 18 December 2016; accepted 5 January 2017; published online 18 January 2017)

[http://dx.doi.org/10.1063/1.4974747]

We noticed that Figures 1, 2, and 4(a) in the original publication were of poor quality due to formatting issues. This erratum provides corrected versions of those figures. The original results and discussions were not affected.

**FIG. 1.** $\theta - 2\theta$ x-ray diffraction spectrum of NbO$_2$ epitaxial film grown on GaN (0001)/AlN/Al$_2$O$_3$ (0001) substrate (top red curve) and GIXRD spectrum of the polycrystalline film grown on TiN/SiO$_2$/Si (bottom black curve) wafer. The vertical blue lines indicate the positions of the NbO$_2$ peaks from the PDF file. The Al$_2$O$_3$ (●), GaN (●), AlN (○), and NbO$_2$ (●) peaks are indicated in the epitaxial film scan. Left inset: RHEED patterns of the as-grown epitaxial film along [1-10] (top) and [001] (bottom) azimuths. Right inset: in-plane x-ray diffraction scan from (400) planes of film and (113) planes of the Al$_2$O$_3$(001) substrate (right).

**FIG. 2.** X-ray reflectivity of NbO$_2$ films with GenX fitting. Circular symbols represent raw data and solid curves represent the fits. Insets show corresponding AFM images of the surfaces of the films.
RHEED images in the inset to the Fig. 1 are now fully visible. Figure 2 shows now properly fitted frames for the AFM image with the correctly placed height scales. Figure 4(a) shows now a correctly presented block diagram for the effective measurement circuit.

**FIG. 4.** (a) IV measurements performed using a triangular waveform for the polycrystalline (○) and epitaxial (●) films. Output currents $I_{out}$ are normalized to $I_{peak} = 1.7$ mA and 12.3 mA for the polycrystalline and epitaxial films, respectively. Gray- and red-shaded areas indicate on and off states for the polycrystalline and epitaxial films. The inset shows the effective measurement circuit. For the IV measurements, $R_L = 0$, and $R_S = 51$ Ω. Input waveforms are shown for the rising side by the dotted lines.