Erratum: “A quantitative analysis of surface deformation by stick/slip atomic force microscopy” [J. Appl. Phys. 82, 3763 (1997)]

J. Kerssemakers, and J. Th. M. De Hosson

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Erratum: “A quantitative analysis of surface deformation by stick/slip atomic force microscopy” [J. Appl. Phys. 82, 3763 (1997)]

J. Kerssemakers and J. Th. M. De Hosson a)

Department of Applied Physics, Materials Science Center, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands

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Some errors were made in the derivation of Eq. (A11). It is written

\[
\begin{align*}
C_{\text{eff}} = & \left[ -\frac{dF_\text{lat}}{dx} \right]^{-1} = \left[ -\frac{\cos(\alpha)}{H} \left( \sin(\alpha) - O_F \cos(\alpha) \right) \right]^{-1} \left( C_H \cos(\alpha) + C_{\theta_z} \right),
\end{align*}
\]

(A11)

with

\[
O_{\mu,\text{fixed}} = O_F = \frac{C_H \sin(\alpha) - C_{\theta_z} \cos(\alpha)}{C_z \cos(\alpha) - C_{\theta_z} H \sin(\alpha)}.
\]

(A12)

It should be

\[
C_{\text{eff}} = \left[ -\frac{dF_\text{lat}}{dx} \right]^{-1} = \left[ \frac{C_z \cos^2(\alpha) - 2 C_{\theta_z} H \sin \alpha \cos \alpha + C_H^2 \sin^2 \alpha}{C_H C_z H^2 - C_{\theta_z}^2 H^2} \right]^{-1}.
\]

(A11)

Because of this, Table I in the main text also changes. The center part reads

<table>
<thead>
<tr>
<th>Compliance</th>
<th>Value</th>
<th>Stiffness</th>
<th>Value</th>
<th>N/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>(C_z) = (L/Ewt^3)</td>
<td>(1.46 \times 10^8)</td>
<td>([C_H^2]^{-1})</td>
<td>(486 \pm 120)</td>
<td></td>
</tr>
<tr>
<td>(C_{\theta_z}) = (L^3/3Ewt^3)</td>
<td>(0.76)</td>
<td>([C_z]^{-1})</td>
<td>(1.31 \pm 0.33)</td>
<td></td>
</tr>
<tr>
<td>(C_{\text{eff}}) = (L^2/2Ewt^3)</td>
<td>(9.15 \times 10^3)</td>
<td>([C_g H]^{-1})</td>
<td>(29.1 \pm 7.3)</td>
<td></td>
</tr>
<tr>
<td>(C_{\text{eff}})</td>
<td>(2.18 \times 10^{-3})</td>
<td>([C_{\text{eff}}]^{-1})</td>
<td>(459 \pm 110)</td>
<td></td>
</tr>
</tbody>
</table>

This part should be written

<table>
<thead>
<tr>
<th>Compliance</th>
<th>Value</th>
<th>Stiffness</th>
<th>Value</th>
<th>N/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>(C_z) = (12L/Ewt^3)</td>
<td>(1.76 \times 10^9)</td>
<td>([C_H^2]^{-1})</td>
<td>(40 \pm 9)</td>
<td></td>
</tr>
<tr>
<td>(C_{\theta_z}) = (4L^3/3Ewt^3)</td>
<td>(9.16)</td>
<td>([C_z]^{-1})</td>
<td>(0.11 \pm 0.03)</td>
<td></td>
</tr>
<tr>
<td>(C_{\text{eff}}) = (6L^2/2Ewt^3)</td>
<td>(11.0 \times 10^4)</td>
<td>([C_g H]^{-1})</td>
<td>(2.4 \pm 0.6)</td>
<td></td>
</tr>
<tr>
<td>(C_{\text{eff}})</td>
<td>(7 \times 10^{-3})</td>
<td>([C_{\text{eff}}]^{-1})</td>
<td>(151 \pm 34)</td>
<td></td>
</tr>
</tbody>
</table>

Therefore, the calculated value of stiffness for TiS2 as it was calculated in the main text with the help of Eq. (3) changes. This value was given as \((1.1 \pm 2.0) \times 10^2\) N/m. It should be \((3.5 \pm 0.5) \times 10^1\) N/m. The conclusions as drawn from the derivations and calculations do not change.

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a) Author to whom all correspondence should be addressed; Electronic mail: hossonj@phys.rug.nl