

## RETRACTION

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View Journal | View IssueCite this: *J. Mater. Chem. C*, 2025,  
13, 2535**Retraction: Low energy loss (0.42 eV)  
and efficiency over 15% enabled  
by non-fullerene acceptors containing  
N-bis(trifluoromethyl)phenylbenzotriazole  
as the core in binary solar cells**María Privado,<sup>a</sup> Beatriz Donoso,<sup>b</sup> Kanupriya Khandelwal,<sup>c</sup> Rahul Singhal,<sup>c</sup>  
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Ganesh D. Sharma<sup>\*c</sup> and Fernando Langa<sup>\*a</sup>

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Retraction of 'Low energy loss (0.42 eV) and efficiency over 15% enabled by non-fullerene acceptors containing N-bis(trifluoromethyl)phenylbenzotriazole as the core in binary solar cells' by María Privado *et al.*, *J. Mater. Chem. C*, 2022, **10**, 13174–13182, <https://doi.org/10.1039/D2TC02289C>.

The Royal Society of Chemistry, with the agreement of the authors below, hereby wholly retracts this *Journal of Materials Chemistry C* article due to concerns with the reliability of the data.

The TEM images of the optimized P1:TOCR1 and P1:TOCR2 films in Fig. 6 show overlap with TEM images showing different materials in ref. 1. The authors have not been able to provide the raw data or an acceptable explanation for the overlap between the images.

Given the significance of these concerns, the Editor has lost confidence that the findings presented in this paper are reliable. This retraction supersedes the information provided in the Expression of Concern related to this article.

The authors were informed about the retraction of the article. Fernando Langa and Pilar de la Cruz have agreed with the decision, Ángel Díaz-Ortiz does not agree with the retraction and the other authors have not responded.

Signed: Fernando Langa, Pilar de la Cruz

Date: 17th December 2024

Retraction endorsed by Michaela Mühlberg, Executive Editor, *Journal of Materials Chemistry C*

**References**

1. M. L. Keshtov, S. A. Kuklin, A. R. Khokhlov, Z. Xie, V. G. Alekseev, H. Dahiya, R. Singhal and G. D. Sharma, *Macromol. Rapid Commun.*, 2022, **43**, 2100839.

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