

Document Version

Final published version

Citation (APA)

Saitta, F. (2026). *Modeling and TCOs Engineering for Thin-Film Photovoltaic Technologies*. [Dissertation (TU Delft), Delft University of Technology]. <https://doi.org/10.4233/uuid:b2f4e011-f147-4ca3-90ca-627920002092>

Important note

To cite this publication, please use the final published version (if applicable).
Please check the document version above.

Copyright

In case the licence states "Dutch Copyright Act (Article 25fa)", this publication was made available Green Open Access via the TU Delft Institutional Repository pursuant to Dutch Copyright Act (Article 25fa, the Taverne amendment). This provision does not affect copyright ownership.
Unless copyright is transferred by contract or statute, it remains with the copyright holder.

Sharing and reuse

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

Takedown policy

Please contact us and provide details if you believe this document breaches copyrights.
We will remove access to the work immediately and investigate your claim.

Propositions

accompanying the dissertation

Modeling and TCOs Engineering for Thin-Film Photovoltaic Technologies

by

Federica Saitta

1. Decoupling optical and electrical functions through a bilayer TCO front electrode architecture enables greater design flexibility in solar cells than single layer TCOs. (This thesis)
2. In room temperature sputtered SnO₂-based films, optoelectrical performance is governed primarily by defect chemistry and gas phase control rather than crystallinity. (This thesis)
3. Increased physical complexity and computational cost in an optical model do not necessarily translate into more accurate predictions of light scattering at realistic interface morphologies. (This thesis)
4. The employment of temporary metal carrier foils, enabling high temperature processing of barrier layers, TCOs and charge transport layers, does not limit the technological development, unlike the conventional route of PET/ITO substrate in flexible perovskite solar cells. (This thesis)
5. It is hard to break the efficiency record in single junction c-Si solar cells without using a-Si layers.
6. Modeling determines what is worth testing. Experiments determine what is worth believing.
7. The advancement of science depends as much on failed experiments as on successful ones, and both should be openly published.
8. Effective supervision means guiding students forward without walking the path for them.
9. What is considered acceptable for women's appearance shifts with context, a standard that rarely applies to men.
10. Innovation should include risk as no one queues for flat rollercoasters.

These propositions are regarded as opposable and defensible, and have been approved as such by the promotor Prof. dr. ir. A. H. M. Smets and copromotor Dr. ir. R. Santbergen.