CURRICULUM VITAE

Part A. PERSONAL INFORMATION

First name	Thomas	**Email**	Thomas.lepetit@univ-nantes.fr
Family name	Lepetit	**Phone**	+33 (0)2 40 68 32 24
Gender	Male	**ORCID**	0000-0003-4010-2282
Birth date	28/09/1986	**Scopus Author ID**	23995772500

A.1. Current Position

Position	Institution	Address	Keywords
Director of the Preparatory Cycle	Nantes University – Polytech School of Engineering	Rue Christian Pauc, C.S. 50609, 44306 Nantes Cedex 3, France	Engineering school, Project-based learning, 350 students
Associate Professor in Thin-Film Photovoltaics	Institute of Materials of Nantes Jean Rouxel (IMN-UMR6502)	2 rue de la Houssinière, 44322 Nantes Cedex 3, France	Photovoltaics, Thin-film deposition and characterization

A.2. Education

Degree	Institution	Year
PhD in Material Sciences	Nantes University	2015
Master's Degree (M2) in New and Renewable Energies / Materials for Energy	Nantes University	2012
Master's Degree (M1) in Applied Physics / Electrical Engineering	Paris Sud-11 University	2009
Bachelor's Degree in Experimental Physics / Numerical Modeling	Paris Sud-11 University	2008
Academic training in Applied Physics Physics Agregation, option C, rank 2	ENS Cachan	2007-2012

Part B. RELEVANT MERITS

B.1. Publications

[Wan+23] Wands, J., Bothwell, A., Tsoulka, P., **Lepetit, T.**, Barreau, N., & Rockett, A. (2023). Stability of Cu(In_xGa_{1-x})Se_2 Solar Cells Utilizing RbF Postdeposition Treatment under a Sulfur Atmosphere. *Advanced Energy and Sustainability Research*, 4(11), 2300052. [DOI]

[Cho+23] Choubrac, L., Bertin, E., Pineau, F., Arzel, L., **Lepetit, T.**, Assmann, L., ... & Barreau, N. (2023). On the role of sodium and copper off-stoichiometry in Cu (In, Ga) S2 for photovoltaic applications: Insights from the investigation of more than 500 samples. *Progress in Photovoltaics: Research and Applications*, 31(10), 971-980. [DOI]

[Bot+23] Bothwell, A. M., Wands, J., Miller, M. F., Kanevce, A., Paetel, S., Tsoulka, P., **Lepetit, T.**, ... & Kuciauskas, D. (2023). Nonradiative Recombination Dominates Voltage Losses in Cu(In,Ga)Se_2 Solar Cells Fabricated using Different Methods. *Solar RRL*, 7(11), 2300075. [DOI]

[Pal+22a] Palmiotti, E., Tsoulka, P., Poudel, D., Marsillac, S., Barreau, N., Rockett, A., & **Lepetit, T.** (2022). Homogeneous $CuGaSe_2$ growth by the CuPRO process with In-Situ AgBr treatment. *Thin Solid Films*, 762, 139488. [DOI]

[Bar+22] Barreau, N., Bertin, E., Crossay, A., Durand, O., Arzel, L., Harel, S., **Lepetit, T.**, ... & Lincot, D. (2022). Investigation of co-evaporated polycrystalline Cu (In, Ga) S2 thin film yielding 16.0% efficiency solar cell. *EPJ Photovoltaics*, 13, 17. [DOI]

[Bel+22] Belfore, B., Poudel, D., **Lepetit, T.**, Palmiotti, E., Ashrafee, T., Rockett, A., ... & Marsillac, S. (2022). High-Rate and Low-Temperature Fabrication of Cu (In, Ga) Se 2 Solar Cells Using AgBr Induced Recrystallization. *IEEE Journal of Photovoltaics*, 12(6), 1406-1411. [DOI]

[Bel+21a] Belfore, B., Poudel, D., Karki, S., Soltanmohammad, S., Palmiotti, E., **Lepetit, T**., ... & Marsillac, S. (2021). Recrystallization of Cu(In,Ga)Se_2 Semiconductor Thin Films via $InCl_3$ Treatment. *Thin Solid Films*, *735*, 138897. [DOI]

[Pou+21] Poudel, D., Belfore, B., Ashrafee, T., Palmiotti, E., Karki, S., Rajan, G., **Lepetit, T.**, ... & Marsillac, S. (2021). In Situ Recrystallization of Co-Evaporated Cu(In,Ga)Se_2 Thin Films by Copper Chloride Vapor Treatment towards Solar Cell Applications. *Energies*, *14*(13), 3938. [DOI]

[Har+20] Harel, S., Arzel, L., **Lepetit, T.**, Zabierowski, P., & Barreau, N. (2020). Influence of sulfur evaporation during or after KF-Post deposition treatment on Cu(In,Ga)Se_2/CdS interface formation. *ACS Applied Materials & Interfaces*, *12*(41), 46953-

46962. [DOI]
[Har+19] Harel, S., Jonnard, P., **Lepetit, T.**, Arzel, L., & Barreau, N. (2019). Impact of KF-post deposition treatment on Cu(In,Ga)Se_2 surface and Cu(In,Ga)Se_2/CdS interface sulfurization. *Applied Surface Science*, 473, 1062-1065. [DOI]
[Nic+18] Nicoara, N., Harel, S., **Lepetit, T.**, Arzel, L., Barreau, N., & Sadewasser, S. (2018). Impact of KF Post-Deposition Treatment on Aging of the Cu(In,Ga)Se_2 Surface and Its Interface with CdS. *ACS Applied Energy Materials*, *1*(6), 2681-2688[DOI]
[Bar+17] Barreau, N., Frelon, A., **Lepetit, T.**, Gautron, E., Gautier, N., Ribeiro-Andrade, R., ... & Ouvrard, G. (2017). High efficiency solar cell based on Full PVD processed Cu(In,Ga)Se_2/$CdIn_2S_4$ heterojunction. *Solar RRL*, *1*(11), 1700140. [DOI]
[Lep+17] **Lepetit, T.**, Harel, S., Arzel, L., Ouvrard, G., & Barreau, N. (2017). KF post deposition treatment in co-evaporated Cu(In,Ga)Se_2 thin film solar cells: Beneficial or detrimental effect induced by the absorber characteristics. *Progress in Photovoltaics: Research and Applications*, *25*(12), 1068-1076. [DOI]
[Buf+17] Buffiere, M., **Lepetit, T.**, Khelifi, S., & El Mel, A. A. (2017). Interface engineering in $CuInSe_2$ solar cells using ammonium sulfide vapors. *Solar RRL, 1*(6), 1700067. [DOI]
[Nic+17] Nicoara, N., **Lepetit, T.**, Arzel, L., Harel, S., Barreau, N., & Sadewasser, S. (2017). Effect of the KF post-deposition treatment on grain boundary properties in Cu(In,Ga)Se_2 thin films. *Scientific reports*, 7(1), 1-7. [DOI]
[Lep+16] **Lepetit, T.**, Harel, S., Arzel, L., Ouvrard, G., & Barreau, N. (2016). Coevaporated $KInSe_2$: a fast alternative to KF postdeposition treatment in high-efficiency Cu(In,Ga)Se_2 thin film solar cells. *IEEE Journal of Photovoltaics*, *6*(5), 1316-1320. [DOI]
[Lep+15] **Lepetit, T.**, Mangin, D., Gautron, E., Tomassini, M., Harel, S., Arzel, L., & Barreau, N. (2015). Impact of DC-power during Mo back contact sputtering on the alkali distribution in Cu(In,Ga)Se_2-based thin film solar cells. *Thin Solid Films*, *582*, 304-307. [DOI]
[Rey+15] Reyes-Figueroa, P., Painchaud, T., **Lepetit, T.**, Harel, S., Arzel, L., Yi, J., ... & Velumani, S. (2015). Structural properties of In_2Se_3 precursor layers deposited by spray pyrolysis and physical vapor deposition for $CuInSe_2$ thin-film solar cell applications. *Thin Solid Films*, *587*, 112-116. [DOI]
[Bar+15] Barreau, N., Zabierowski, P., Arzel, L., Igalson, M., Macielak, K., Urbaniak, A., ... & Kessler, J. (2015). Influence of post-deposition selenium supply on Cu(In,Ga)Se_2-based solar cell properties. *Thin Solid Films*, *582*, 43-46. [DOI]

B.2. Research Projects

Project	Objective	Role	Budget IMN
PARACELSis M.ERA-NET Starting september2025	3T Si/CIGS tandem solar cells modularized in parallel	Work Package Leader (WP3). Supervision of a Post-doctoral researcher	€191k
IOTA PEPR-TASE 22-PETA-0005 2024, ongoing	Epitaxial growth of CIGS on Si via III-V interface.	Co-supervision of a PhD student	€230k
SIPHON ANR-JCJC-CE05 2024, ongoing	Stable inorganic thin-film photovoltaic devices for a sustainable Internet of Things	Principal Investigator Supervision of a Post-doctoral researcher	€280k
SITA HORIZON CL5-D3-02-04 2021-2025	Demonstration of a tandem module exceeding 30% efficiency.	Co-supervision of a PhD student	€250k
PASTEL ANR-PRCE CE05 2021-2025	Passivating and transparent selective contact for ultra-thin (≤400 nm) high-efficiency CIGSe solar cell.	Work Package Leader (WP2). Supervision of a Post-doctoral researcher	€215k

B.3. Teaching Projects

Project	Objective	Total budget
IDEFI-AVOSTTI 2012-2021	Development of engineering education pathways for specific audiences (high-level athletes, post-PACES students, students from technological fields)	€9M
OpenING 2021-2023	Development of national pedagogical resources (open-source)	€1M
WidenING 2022-2023	Deployment of previously developed resources across the entire Polytech network.	€1M