CURRICULUM VITAE – February 2026

Pedro MECÊ, PhD

CNRS Research Scientist
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ACADEMIC PROFILE

Pedro Mecê is a CNRS Research Scientist at Institut Langevin (CNRS/ESPCI Paris – PSL), where he co-leads the CLARITY Research Group. His research lies at the interface of optical physics and biomedical imaging, focusing on the development of interferometric and phase-contrast retinal imaging architectures for structural and functional investigation of neuronal and vascular dynamics in vivo.

He has authored 25 peer-reviewed publications and 3 invited book chapters. His work has led to 9 international patent applications related to full-field and adaptive optics retinal imaging and has been translated toward clinical deployment through the co-founding of the start-up SharpEye.

CURRENT POSITION(S)

Since 2022 CNRS Research Scientist – Institut Langevin, CNRS, ESPCI Paris, Université PSL, Paris (France)

PREVIOUS POSITIONS

2021 – 2022 Research Scientist, ONERA (Department of Optics and Associated Techniques)

2018 – 2020 Postdoctoral Researcher, Institut Langevin – ESPCI Paris (France)

2015 – 2018 PhD Candidate (CIFRE contract between ONERA and Quantel Medical)

EDUCATION

2018 PhD in Biomedical Optics, Université Sorbonne Paris-Cité (France)

2015 Master of Science (MSci) “Laser, Optics and Matter”, Université Paris-Saclay (France)

2014 Double Engineering Degree (Electrical & Optical Engineering), University of Campinas (Brazil) & Institut d’Optique Graduate School (France)

RESEARCH FUNDING (PRINCIPAL INVESTIGATOR)

- **ERC Starting Grant (European Research Council, 2026–2031)**
  MIRACLE-AD – 1.76 M€
  Multimodal retinal imaging for neurovascular coupling characterization in Alzheimer’s disease.

- **ANR JCJC (2023–2027)**
  BRAINS – 456 k€
  Development of novel retinal imaging architectures for neuronal and vascular functional investigation.

SELECTED PUBLICATIONS

1. P. Senée, L. Krafft, I. Loukili, D. Castro Farias, O. Thouvenin, M. Atlan, M. Paques, S. Meimon, **P. Mecê**[*], "Revealing neurovascular coupling at a high spatial and temporal resolution in the living human retina." *Science Advances* 11.26 (2025): eadx2941.
2. Y. Cai, O. Martinache, M. Bertrand, C. Callet, O. Thouvenin, K. Grieve, **P. Mecê**[*], "Wide-field cellular-resolution retinal imaging using deformable mirror-based sensorless adaptive optics time-domain full-field OCT." *Biomedical optics express* 16.12 (2025): 5179-5196.
3. J. Scholler, K. Groux, K. Grieve, C. Boccara, and **P. Mecê**[*], "*Adaptive-glasses time-domain FFOCT for wide-field high-resolution retinal imaging with increased SNR*." *Opt. Lett*. **45**, 5901-5904 (2020).
4. L. Krafft, P. Senée, E. Gofas, O. Thouvenin, M. Atlan, M. Paques, S. Meimon and **P. Mecê**[*]. "Multimodal high-resolution retinal imaging using a camera-based DMD-integrated adaptive optics flood-illumination ophthalmoscope." *Opt. Lett.*, 48(14), 3785-3788 (2023).
5. **P. Mecê**[*], E. Gofas-Salas, Y. Rui, M. Zhang, J.A. Sahel, and E. Rossi. "Spatial-frequency-based image reconstruction to improve image contrast in multi-offset adaptive optics ophthalmoscopy." *Optics letters*, 46(5), 1085-1088 (2021).

INNOVATION & TECHNOLOGY TRANSFER

- 9 PCT patent applications (5 published) related to full-field and adaptive optical retinal imaging systems.
- Co-founder and associate of **SharpEye** (since 2021), a start-up dedicated to the clinical translation of full-field OCT technology. Recipient of national innovation awards including iLab (2022).

AWARDS & RECOGNITION

- Recipient of the SPIE Pascal Rol Ophthalmic Technology Award (2021) and 3 nominations as senior author (2021–2026).
- ARVO MIT Outstanding Poster Awards (2021, 2024) as first author and senior author.
- Pierre Favard Thesis Award (French Society of Microscopy).
- Innovation Thesis Award (French Society of Engineering in Medicine & Biology).

EDITORIAL & SCIENTIFIC SERVICE

- Associate Editor, *Biomedical Optics Express* (since 2025).
- Reviewer for leading journals including *Optica*, *Optics Letters*, *Optics Express*, and *Biomedical Optics Express*.
- External reviewer for ERC, ANR, NOW (Dutch Research Council), and NSERC Canada.
- Organizer and committee member for major international conferences including SPIE Ophthalmic Technologies (since 2026) and OPTICA Congresses (since 2023).
- Co-founder and member of organizing committee of the Adaptive Optics European Summer School (since 2020)

INVITED PRESENTATIONS (SELECTED)

Invited speaker at major international conferences and institutions including SPIE Photonics West, OPTICA Biophotonics Congress, ICTER (Poland), ISER (Australia), ONERA, and Bascom Palmer Eye Institute (USA).

SUPERVISION & MENTORSHIP

9 PhD students, 2 PostDocs, 1 Research Engineer, 6 Master students.