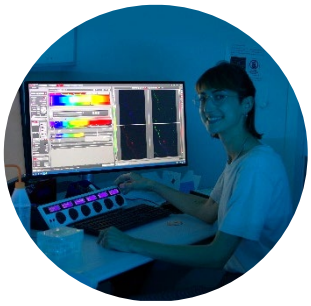

Isabelle Martinier, Ph.D.

Postdoctoral researcher

Regenerative Medicine Center – University Medical Center Utrecht (NL)

Phone: +33 6 77 21 41 43

LinkedIn: linkedin.com/in/isabelle-martinier

RESEARCH EXPERIENCE

Postdoctoral researcher in Regenerative Medicine - Urology	Regenerative Medicine Center Utrecht (RMCU), UMC Utrecht – funded by STRONG-UR (Horizon EU project) • Establishment of biomechanical properties of native urethral tissues, • Organoids culture in biomimetic materials, • Bioprinted materials for urethral reconstruction.	2025 – Current
University teacher	Utrecht University – Bachelor students Teacher for the Research and Design Analysis course	2025 – Current
Ph.D. in Physics and Chemistry of Materials	LCMCP, Sorbonne Université *Thesis title: "Collagen-based biomimetic tubular materials: from self-assembly mechanisms during fabrication to in vitro applications"* • Collaborate with scientists and surgeons from various fields (biologists, physicists, cardiovascular and thoracic surgeons), • Supervise junior PhD candidates and master students. *Thesis advisors:* Léa Trichet, PhD., and Assoc. Prof. Francisco M. Fernandes.	2020 – 2024
University teaching assistant	Sorbonne Université Teach and supervise practical research courses for 3 years for Bachelor and Master students in mechanics of materials, general chemistry, and spectroscopy.	2020 – 2024
Research Intern	LCMCP, Sorbonne Université *Title: Topotactic fibrillogenesis of tubular type I collagen constructs for clinical applications.* *Advisor*: Assoc. Prof. F.M.Fernandes.	2020

EDUCATION

Ph.D. in Physics and Chemistry of Materials	LCMCP, Sorbonne Université Obtained with highest grading (excellence). *Thesis title: "Collagen-based biomimetic tubular materials: from self-assembly mechanisms during fabrication to in vitro applications."* *Advisors*: Dr. L.Trichet and Assoc. Prof. F.M. Fernandes	2020 – 2024

MSci in Biomaterials for Health	University of Strasbourg	2019 – 2020
Chemical engineering degree in Materials and Environment	Ecole Nationale Supérieure de Chimie de Montpellier, Top-ranked French chemistry school. • Excellent mention, • Apprenticeship at Elkem Silicones (Lyon, FR), • Last semester at KTH Royal Institute of Technology (Stockholm, SE).	2016 – 2019
BSc in Chemistry	Université Lyon I	2014 – 2016

PUBLICATIONS

Unravelling the roles of texture and basal lamina composition on the endothelialisation of biomimetic type I collagen matrices. Bouabdallah, M., Martinier, I., Miyara, M., Trichet L.*, Fernandes, F.M.*. (under review, *Advanced Healthcare Materials*)

State diagrams of type I collagen for the rational design of biomimetic materials Martinier, I., Deville, S., Mosser, G., Trichet, L., Davidson, P.*, Fernandes, F.M.*. *Cell Biomaterials* (2025), DOI: 10.1016/j.celbio.2025.100127

Biomimetic model to study penile dysfunctions. Martinier, I., De Kort, L., De Graaf, P.* *News & Views - Nature Biomedical Engineering* (2025), DOI: 10.1038/s41551-025-01434-4

Biomimetic tubular materials: from native tissues to a unifying view of new vascular, tracheal, gastrointestinal, oesophageal, and urinary grafts. Martinier, I., Trichet, L.*, Fernandes, F.M.*. *Chemical Society Reviews* (2025), DOI: 10.139/D4CS00429A

Tunable biomimetic materials elaborated by ice templating and self-assembly of collagen for tubular tissue engineering. Martinier, I., Fage, F., Kakar, A., Castagnino, A., Saindoy, E., Frederick, J., Onorati, I., Besnard, V., Barakat, A., Dard, N., Martinod, E., Planes, C., Trichet, L.*, Fernandes, F.M.*, *Biomaterials Science* (2024), DOI:10.1039/D3BM01808C

Peer-reviewing	Number of reviewed articles: 2, *Small Journal*	2024-2025

PATENT

Porous collagen material and process for preparing the same by topotactic fibrillogenesis by Martinier, I., Fage, F., Kakar, A., Trichet, L. and Fernandes, F.M. PCT/FR2023/051232.

ABSTRACTS

Oral Presentations:

- "**Native-like biomaterials for organoid culture in a controlled environment**", *ISBF Conference 2025*.
- **"Collagen-based double layered biomimetic tubular materials for vascular and tracheal applications''**, *BIOMAT Conference 2025*.
- **"Immunomodulatory Biomimetic Collagen Scaffolds for Enhanced Tissue Regeneration'',** *BIOMAT Conference 2025*.
- **"Biomimetic collagen-based materials for vascular replacement",** *BIOMAT-MatSAN congress,* France. Awarded for the best oral communication.
- **"New understanding of type I collagen dense phases for the elaboration of biomimetic materials",** *ESB 2023*.

- **"Mimicking the extra-cellular matrix of arteries: an ice-templating approach",** *ESB 2023*.
- **"Using ice to mimic the extra-cellular matrix of arterial tissue: the role of topotactic fibrillogenesis",** *AERoGELS 2023***.**
- **"Biomimetic ice-templated collagen tubes for vascular applications". 2022.** Online webinar with the BIOMAT Association.
- **"Ice-templating: a tool to tailor biomimetic collagen scaffolds for arterial replacement",** *AERoGELS 2022*.

Poster Presentations:

- ***"Rabbit and human male urethra: how do they compare?",*** *STRONG-UR consortium 2025*.
- ***"Urethral organoids establishment and culture on biomimetic materials"***, *SupraLife conference 2025*.
- **"Biomimetic collagen tubular scaffolds for vascular applications",** *Hybrid Materials Conference 2022*.
- **"Tailored tubular collagen scaffolds through ice-templating for arterial replacement",** *ESB 2022*.

HONOURS AND AWARDS

Award of the best oral presentation	BIOMAT-MatSAN	2024
Travel grant	BIOMAT Association	2024
Travel grant	COST-Aerogels	2022
PhD award funding	Sorbonne Université 15 PhD fellowships/year are awarded by the Physics and Chemistry of Materials department. Selection criteria take into account academic excellence, research project, and individual assessment (written and oral).	2020

NETWORKS & MEMBERSHIPS

- Current:

- Board member of the RUPS society (Regenerative Medicine Utrecht Postdoc Society)
- BIOMAT French Biomaterials Society.

- 2021-2024:

- Board member of the Young researchers' section of BIOMAT from 2021 to 2024 (organizer and communication officer)
- EU COST Action CA18125 (AERoGELS).

ORGANISATIONAL SKILLS

- Organization of the annual STRONG-UR Consortium conference, Utrecht (NL), 2025
- Organization and chairing of invited speakers at the RMCU, 2025
- Volunteer and organization of workshops and festivities for young scientists at the European Society for Biomaterials conference 2022, Bordeaux (FR)
- Co-organizer of the Swiss French Biomaterials young researchers summer school 2023, Zurich (CH)
- Organizer of the weekly group meetings at the LCMCP - MatBio group (2020-2023)
- Co-chair of monthly webinars on Biomaterials - BIOMAT association