

Prof. Dr. MAYURI SADOINE

PhD in Natural Sciences (Biology)

Principal investigator aspiring to foster innovative research & high-quality teaching

EDUCATION

QUALIFICATION CNU for Assistant Professor	National (FR)
Biochemistry and Molecular Biology	Feb 2024
RWTH AACHEN UNIVERSTITY	Aachen (DE)
PhD in Natural Sciences (Biology)	Nov 2018
Thesis advisors: Prof. Jörg Fitter and Prof. Ulrich Schwaneberg	
UNIVERSITE LIBRE DE BRUXELLES	Brussels (BE)
MAS in Public Health Methodology	Jun 2014
UNIVERSITE LIBRE DE BRUXELLES	Brussels (BE)
MSc in Biochemistry, Molecular and Cellular Biology	Sept 2011
UNIVERSITE LIBRE DE BRUXELLES	Brussels (BE)
BSc in Biological Sciences	Jun 2009

RESEARCH EXPERIENCE

UNIVERSITE DE LYON, UCBL, CNRS, INSA	Lyon (FR)
Group Lead	Jun 2025 –
Head of the SPMIR Research Team	
UNIVERSITE DE LYON, UCBL, CNRS, INSA	Lyon (FR)
Chair de Professeur Junior (CPJ)	Dec 2024 –
Tenure-Track position to Professeur des Universités	
UNIVERSITE D'AIX-MARSEILLE, CEA, CNRS	Marseille (FR)
Visiting Sr Postdoctoral Researcher	Feb 2024 – Mar 2024
HEINRICH HEINE DÜSSELDORF UNIVERSITY	Düsseldorf (DE)
Sr Postdoctoral Researcher, Institute of Cell and Interaction Biology	Apr 2022 –Mar 2024
Postdoctoral Researcher, Institute for Molecular Physiology	Dec 2017-Mar 2022
FZJ JÜLICH	Jülich (DE)
Doctoral Researcher, Institute of Complex System 5 (ICS5)	Dec 2014 – Dec 2017
UNIVERSITE CATHOLIQUE DE LOUVAIN	Brussels (BE)
Research Assistant, IREC	Jan 2012 – Sep 2013
CARNEGIE INSTITUTION FOR SCIENCE	Stanford (US)
Intern, Department of Plant Biology	Apr 2011 – Jun 2011
UNIVERSITE LIBRE DE BRUXELLES	Brussels (BE)
Master in Biochemistry, Molecular and Cellular Biology	Sept 2010 - Sept 2011

RESEARCH INTERESTS

Plant-microbe interactions, communications, signaling & transport under abiotic stresses
Engineering of fluorescent biosensors for nutrients, metabolites & signal molecules

PUBLICATIONS

Genetically encoded biosensors reveal unique stress-induced shoot-to-root calcium signatures in plant-rhizobacteria interactions. **Mayuri Sadoine**[$], Milan Župunski, Christian-Frederick Kaiser, Clelia Lolito, Réjane Carron, Tonni Grube Andersen, Guido Grossmann[$] (in prep.)

Calcium dynamics are associated with salt stress-induced motility-to-biofilm transitions in plant-associated *Bacillus subtilis*. Celine Weippert, Lydia Hamek, Marine Breuilly, Christian-Frederick Kaiser, Julia Engelhorn, Bruno Huettel, Ilka Bischofs, Thomas Hartwig, Guido Grossmann[$], **Mayuri Sadoine**[$] (in prep.)

Tag-and-modify click chemistries for the most demanding applications: single molecule FRET detection of large macromolecular conformational dynamics *in vitro* and membrane protein transport dynamics *in cellulo*. Kambiz Hamadani[$], Jörg Fitter, Alexandros Katranidis[$], **Mayuri Sadoine**[$] (in prep.)

Single-molecule FRET reveals mechanistic details about LEA proteins. Alida Meyer[*], Vanessa Castro-Rodríguez[*], Emmanuel Margeat, Robert Quast, Joerg Fitter[$], **Mayuri Sadoine**[$] (in prep.)

Change of binding-site composition by deletion of a single amino acid in protein sequences – proof by the comparison of two ATP-binding isoforms. Alexander Krah[*$], Bethel D. Tadesse[*], Priya Ragunathan[*], Peter J. Bond, Gerhard Grüber, **Mayuri Sadoine**[$] (in prep.)

Genetically Encoded Fluorescent Metal-Ion Biosensors for Live Subcellular Imaging *in Planta*. Jessica Marion, Lydia Hamek**,** Sébastien Thomine, **Mayuri Sadoine**[$]. Invited protocol chapter for Methods in Molecular Biology, volume Heavy Metals and Metalloids Detection and Detoxification in Plants, Springer Nature. (invited chapter, in prep.)

Calcium as a marker of cellular vulnerability to viral infection: from eukaryotic viruses to bacteriophages. Amandine Achard*****, Bethel D. Tadesse*****, Lydia Hamek, Inès Rougis, Manuel Peralta, Renata C. Matos, Franck Bertolla[$], **Mayuri Sadoine**[$] (in prep.)

The Conversation: Bidirectional Signaling Between Plants and Microbes in response to environmental changes. Lydia Hamek[*], Théo Perche[*], Manuel Peralta, Bethel D. Tadesse, Amandine Achard, Vanessa Castro-Rodrigez, **Mayuri Sadoine**[$] (in prep.)

Integrating nano-biosensors into plants: A smart approach for plant disease management to enhance agricultural resilience. Vanessa Castro-Rodríguez[$], **Mayuri Sadoine**[$]. in : Nano-Delivering Plant Biostimulants and Anti-Pathogenic Agents. Elsevier, 2026. p. 533-560.

A critical role of *sux* cistron-mediated sucrose uptake for virulence of the rice blight pathogen *Xanthomonas oryzae* pv. *Oryzae*. Nora R. Zöllner[*], Juying Long[*], Congfeng Song[*], Jacob Sharkey, Michael M. Wudick, Eliza P.I. Loo, **Mayuri Sadoine**, Violetta Applegate, Astrid Höppner, Sander H.J. Smits, Bing Yang[$], and Wolf B. Frommer[$]. PNAS Nexus 2026

Biosensors development for ratiometric fluorescence imaging in microbes. Erdem Sunal, Vanessa Castro-Rodríguez[$], **Mayuri Sadoine**[$]. JOVE, vol. 222, no. e68339, 2025 ([$]correspond.) A Monochromatically Excitable Green–Red Dual-Fluorophore Fusion Incorporating a New Large Stokes Shift Fluorescent Protein J. Obinna Ejike[*], **Mayuri Sadoine**[*], Yi Shen[*], Yuuma Ishikawa[*], Erdem Sunal, Sebastian Hänsch, Anna Hamacher, Wolf B. Frommer[$], Michael M. Wudick, Robert Campbell[$], Thomas Kleist. Biochemistry ACS Publications, 2024

Monitoring nutrients in plants with sensors: Achievements and perspectives. **Mayuri Sadoine**[$], Roberto De Michele, Milan Župunski, Guido Grossmann, Vanessa Castro-Rodríguez[$]. Plant Physiology, Oxford Academic Journals, 2023

OzTracs: Optical Osmolality Reporters Engineered from Mechanosensitive Ion Channels. Thomas J. Kleist[*], I Winnie Lin[*], Sophia Xu, Grigory Maksaev, **Mayuri Sadoine,** Elizabeth S. Haswell, Wolf B. Frommer, Michael M. Wudick[$]. Biomolecules, vol. 12, no. 6, 2022, p. 787. ([*]equal)

Designs, applications, and limitations of genetically encoded fluorescent sensors to explore plant biology. **Mayuri Sadoine**, Yuuma Ishikawa, Thomas J Kleist, Michael M Wudick, Masayoshi Nakamura, Guido Grossmann, Wolf B Frommer[$], Cheng-Hsun Ho[$]. Plant Physiology, Oxford Academic Journals, 2021

Affinity Series of Genetically Encoded Förster Resonance Energy-Transfer Sensors for Sucrose. **Mayuri Sadoine**, Mira Reger, Ka Man Wong, Wolf B Frommer[$]. ACS sensors, ACS Publications, 2021

Sensors for the quantification, localization and analysis of the dynamics of plant hormones. Reika Isoda, Akira Yoshinari, Yuuma Ishikawa, **Mayuri Sadoine**, Rüdiger Simon, Wolf B Frommer[$], Masayoshi Nakamura[$]. The Plant Journal, Wiley Online Library, 2021, pp. 542—557

Affinity Purification of GO-Matryoshka Biosensors from *E. coli* for Quantitative Ratiometric Fluorescence Analyses. **Mayuri Sadoine**[$], Vanessa Castro-Rodriguez, Tobias Poloczek, Helene Javot, Erdem Sunal, Michael M Wudick, Wolf B Frommer. Bio-protocol, 2020, pp. e3773--e3773

Preparation of Cell-free Synthesized Proteins Selectively Double Labeled for Single-molecule FRET Studies. **Mayuri Sadoine**, Michele Cerminara, Jörg Fitter, Alexandros Katranidis[$]. Bio-protocol, 2018, pp. e2881-e2881

Cotranslational incorporation into proteins of a fluorophore suitable for smFRET studies. **Mayuri Sadoine**, Michele Cerminara, Michael Gerrits, Jörg Fitter[$], Alexandros Katranidis[$]. ACS synthetic biology, ACS Publications, 2018, pp. 405-411

Selective double-labeling of cell-free synthesized proteins for more accurate smFRET studies. **Mayuri Sadoine**, Michele Cerminara, Noémie Kempf, Michael Gerrits, Jörg Fitter[$], Alexandros Katranidis[$]. Analytical chemistry, ACS Publications, 2017, pp. 11278-11285

Cell-Free Synthesis of Site-Specifically Double-Labeled Proteins for More Accurate Single-Molecule FRET Studies. **Mayuri Sadoine**, Michele Cerminara, Noemie Kempf, Alexandros Katranidis, Jörg Fitter[$]. Biophysical Journal, Elsevier, 2017, pp. 31a

Differential regulation of glucose transport activity in yeast by specific cAMP signatures. Clara Bermejo, Farzad Haerizadeh, **Mayuri Sadoine**, Diane Chermak, Wolf B. Frommer[$]. Biochemical Journal, Portland Press Ltd., 2013, pp. 489-497 ([$]correspond.)

CONFERENCES, AWARDS, PRESENTATIONS & POSTERS

BootCampStart(S)her — Lyon (France)
Award: The Project That Breaks New Ground — Oct 2026

ImaBio Thematic Group on Photosynthetic Organisms — Angers (France)
Talk: Imaging plant–microbe communication under environmental stress with next-generation fluorescent biosensors. — Mar 2026

Bayer Crop Science — Lyon (France)
Invited talk: Developing biosensors for high resolution fluorescence imaging in plant-microbe systems — Oct 2025

INRAE LIPME — Toulouse (France)
Invited talk: Identifying Critical Breakpoints in Plant Resilience to Pathogen Attacks — Sept 2025

Malaga University — Malaga (Spain)
Invited talk: Beyond the Threshold: Resilience in Plant-Microbe Systems — May 2025

12th Conference of the French Society for Phytopathology. — Bordeaux (France)
Poster: Friends and Foes? Exploring Stress-Induced Calcium Signaling in *Plant*-Microbe Systems to Identify the Limits of Stress Adaptation. Celine Weippert, Clelia Sara Lotito, Christian-Frederic Kaiser, Milan Župunski, Tonni Grube Andersen, Guido Grossmann, **Mayuri Sadoine** — May 2025

ENS Lyon RDP Lyon (France)
Invited talk: Under Pressure: Identifying Adaptation Limits in Plant-Microbe Systems. Mar 2025
Charles University Prague (Czech Republic)
Invited talk: Exploring the Chink in the Armor: Insights into Plant-Rhizobacteria Adaptation to Stress Jun 2024
CEA-CNRS-Aix-Marseille Université (BIAM) Marseille (France)
Invited talk: Exploring the Achilles' heels of stress adaptation in plant-microbe systems Mar 2024
Seminar : Retour d'expérience de l'utilisation d'eLAB: intérêt et points de vigilance Mar 2024
CNU Qualification for Assistant Professor/Lecturer (FR) National (France)
Biochimie et Biologie Moléculaire Feb 2024
PLANT PEPTIDES AND RECEPTORS MEETING 2023 Lyon (France)
Poster: Stress-induced calcium signaling in *Arabidopsis thaliana*-Bacillus rhizobacteria interactions. **Mayuri Sadoine**[$], Christian-Frederic Kaiser, Milan Župunski, Celine Weippert, Clelia Sara Lotito, Tonni Grube Andersen, Thomas Hartwig, Ilka B. Bischofs, Guido Grossmann[$]
PLANT BIOLOGY EUROPE MEETING 2023 Marseille (France)
PLANT SYNTHETIC BIOLOGY CONFERENCE 2022 Barcelona (ES)
Poster: Microfluidics-based sensor imaging for microbial communities and plant-microbe interactions. Christian Frederic Kaiser*, **Mayuri Sadoine***, Tristan Yunquian Wang, Milan Župunski, Ilka M. Axmann, Ilka B. Bischofs, Guido Grossmann[$]
POF-MEETING 2018 Jülich (DE)
Poster: Cell-free synthesis of proteins for site-specific double labeling allows more accurate smFRET studies. **Mayuri Sadoine,** Michele Cerminara, Noemie Kempf, Joerg Fitter, Alexandros Katranidis[$] ([$]corresponding)
BIOPHYSICAL SOCIETY MEETING 2017 New Orleans (US)
Talk: Double site-specific labeling of cell-free synthesized proteins for more accurate smFRET studies. **Mayuri Sadoine**, Michele Cerminara, Noemie Kempf, Joerg Fitter[$], Alexandros Katranidis[$] ([$]corresponding)
PRINTEMPS DES SCIENCES 2009: ÉVOLUTION(S) RÉVOLUTION(S) Brussels (BE)
Posters : Méthode de Sanger. Nouvelles méthodes de séquencage du génome. Histoire du séquençage de l'ADN. **Mayuri Sadoine**, Maxime Steisel, Laurène Viviani

RESEARCH NETWORKS & SCIENTIFIC COLLABORATIONS

GDR ImaBio CNRS- WG Biosensors 2026-
Member of the Local Organizing Committee
Groupe Régional de Recherche en Microbiologie des Interactions (G-RRMI) 2026-
Member & Committee Representative
PHYBILY- Member 2025–
European Cooperation in Science and Technology COST Action CA22157 – RECROP 2025–
Member, WG1, WG2, WG4
European Cooperation in Science and Technology COST Action CA22142 – ROOT- 2025–
BENEFIT Member, WG2
European Cooperation in Science and Technology COST Action CA22158 – 2025–
MiCropBiomes- Member WG3, WG5
French Research Federation FR BioEEnVis 2025–
FRENCH NETWORK ON XANTHOMONADS (FNX) 2025–

SCHOLARSHIP & GRANT CONTRIBUTIONS

Project Coordinator & Co-Principal Investigator in FR BioEnviS PHARE Grant 2026
Principal Investigator in ANR grant 2024-2029

Associated Researcher in SFBs, CEPLAS (PIs: Wolf B. Frommer, Guido Grossmann) 2019-2024
Associated Researcher in B&M Gates Healthy Crops (PI: Wolf B. Frommer) 2019-2022
Associated PI in NEXTplant (PIs: Wolf B. Frommer, Mayuri Sadoine) 2019
Associated Researcher ANR PHLOWZ (PIs: Helene Javot, Wolf B. Frommer) 2017-2023
Graduate Scholarship UCLouvain 2012-2013
FNRS Scholarship UCLOUVAIN (Not granted- Grade: A-Very good to Excellent) 2012
Internship Carnegie Institution for Science 2011

TEACHING EXPERIENCE

Lectures, courses and Workshops

Biotechnology and Cellular Imaging 2026-
Molecules of Life and Digital Tools 2025-
Applied Ecology 2025-
Protein Engineering 2025-
Synthetic Biology 2025-
M-4457: Optogenetic Cell Control, Advanced Microscopy and Quantitative Imaging 2022 –2023
M-4473: Challenges and Opportunities of Translational Developmental Biology 2023
M-4459: Biosensor Engineering: Principles and Strategies 2018 –2021
Lectures: Genetically encoded fluorophore-based biosensor engineering 2018 –2023
Lectures: Quantitative data analysis 2018-2021
Workshop: Fluorimetric analyses using the Tecan plate reader 2019

Theses

Thesis co-supervisor: Bachelor, Master and PhD levels 2019 –
Thesis supervisor: Doctoral level 2025-2028
Théo perche
Thesis supervisor: Master Level
Lydia Hamek; Amandie Achard 2026
Thesis co-supervisor and second reviewer: Bachelor level 2023
Clelia Sara Lolito; Celine Weippert
Thesis co-tutor & guest teacher: Master level 2022-2023
Alfonso Gamaza Vico
Thesis co-supervisor: 2019-2022
Yunqian Wang; Erdem Sunal

VOLUNTEERING, ADVOCACY & AMBASSADOR SERVICES:

GDR ImaBio CNRS Biosensors: co-organizer 2027
Fêtes de la sciences 2026-
Femmes et Sciences: Member & Mentor 2025-
PCI Plants: Editorial Recommender 2025-
CPJ Network France: Founder 2025-
Peer-review for international journals 2017–

- JACS Au
- Plant Physiology
- Planta
- Bio-protocols
- Current Biology
- Nature communications
- New phytologist
- JXB

AAAS: Community ambassador for women in STEM 2022-2025
APS bacteriology committee: Social media liaison 2022-
EU funded Scola ULB: Tutor 2008-2009