



Dr. MAYURI SADOINE

PhD in Molecular Biophysics

- Düsseldorf, 40479
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Dedicated scientist with expertise in making biosensors to study plant-microbe interactions, seeking a new position to contribute to research & teaching in academia

EDUCATION

UNIVERSITE LIBRE DE BRUXELLES	Brussels (BE)
Master in Biochemistry, Molecular and Cellular Biology	Sept 2011
Thesis advisors: Prof. Bruno André and Prof. Martine Prevost	
UNIVERSITE LIBRE DE BRUXELLES	Brussels (BE)
Master in Public Health Methodology	Jun 2014
RWTH AACHEN UNIVERSITY	Aachen (DE)
PhD in Molecular Biophysics	Nov 2018
Thesis advisors: Prof. Jörg Fitter and Prof. Ulrich Schwaneberg	
QUALIFICATION CNU for Assistant Professor	National (FR)
Biochemistry and Molecular Biology	Feb 2024

RESEARCH EXPERIENCE

AIX MARSEILLE UNIV, 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	Dec 2017 –Mar 2024
Supervisor: Prof. Guido Grossmann	
Postdoctoral Researcher, Institute for Molecular Physiology	
Supervisor: Prof. Wolf B. Frommer	
FZJ JÜLICH	Jülich (DE)
Doctoral Researcher, Institute of Complex System 5 (ICS5)	Dec 2014 – Dec 2017
Supervisors: Prof. Jörg Fitter and Dr. Alexandros Katranidis	
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
Advisors: Prof. Wolf B. Frommer and Dr. Clara Bermejo	
UNIVERSITE LIBRE DE BRUXELLES	Brussels (BE)
Master in Biochemistry, Molecular and Cellular Biology	Sept 2010 - Sept 2011
Thesis advisors: Prof. Bruno Andre and Prof. Martine Prevost	

RESEARCH INTERESTS

Plant-microbe interactions, communications, signaling & transport under biotic/abiotic stresses

Engineering of fluorescent biosensors for nutrients, metabolites & signal molecules

Biosensors, single molecule techniques, click Chemistry, microfluidics & fluorescence imaging

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 preparation) ([§]corresponding authors)

Comparative analysis reveals calcium dependent regulation of bacterial motility in response to stress of Bacilli rhizobacteria. **Mayuri Sadoine**[§], Christian-Frederick Kaiser, Celine Weippert, Julia Engelhorn, Bruno Huettel, Ilka Bischofs, Thomas Hartwig[§], Guido Grossmann[§] (in preparation) ([§]corresponding authors)

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*. **Mayuri Sadoine**[§], Kambiz Hamadani[§], Jörg Fitter, Alexandros Katranidis[§] (invited review) ([§]corresponding authors)

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, 2023 (*equal contributions) ([§]corresponding authors)

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 ([§]corresponding authors)

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

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 ([§]corresponding authors)

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([§]corresponding authors)

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
([§]corresponding authors)

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
([§]corresponding author)

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 ([§]corresponding author)

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 ([§]corresponding author)

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 ([§]corresponding author)

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 ([§]corresponding author)

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 ([§]corresponding authors)

ACKNOWLEDGEMENT in

Serre, N.B., Wernerová, D., Vittal, P., Dubey, S.M., Medvecká, E., Jelínková, A., Petrášek, J., Grossmann, G. and Fendrych, M., 2023. The AUX1-AFB1-CNGC14 module establishes a longitudinal root surface pH profile. *Elife*, 12, p.e85193.

Kleist, T.J. and Wudick, M.M., 2022. Shaping up: Recent advances in the study of plant calcium channels. *Current Opinion in Cell Biology*, 76, p.102080.

Prigent, J., Herrero, A., Ambroise, J., Smets, F., Deblandre, G.A. and Sokal, E.M., 2015. Human progenitor cell quantification after xenotransplantation in rat and mouse models by a sensitive qPCR assay. *Cell Transplantation*, 24(8), pp.1639-1652.

Ghaddar, K., Krammer, E.M., Mihajlovic, N., Brohée, S., André, B. and Prévost, M., 2014. Converting the yeast arginine Can1 permease to a lysine permease. *Journal of Biological Chemistry*, 289(10), pp.7232-7246.

CONFERENCES, AWARDS, PRESENTATIONS & POSTERS

CEA-CNRS-Aix-Marseille Université Marseille (France)

L'Institut de Biosciences et biotechnologies d'Aix-Marseille (BIAM)

Invited talk: Exploring the Achilles' heels of stress adaptation in plant-microbe systems Mar 2024

CEA-CNRS-Aix-Marseille Université

L'Institut de Biosciences et biotechnologies d'Aix-Marseille (BIAM)

Mar 2024

Seminar : Retour d'expérience de l'utilisation d'eLAB: intérêt et points de vigilance

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)

SCHOLARSHIP & GRANT CONTRIBUTIONS

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 iGRAD-plant (PIs: Wolf B. Frommer, Mayuri Sadoine) 2019

Associated researcher ANR PHLOWZ (PIs: Helene Javot, Wolf B. Frommer) 2017-2023

Graduate scholarship UCLOUVAIN (Granted 1 year ≈25.000 euros) 2012-2013

FNRS scholarship UCLOUVAIN (Not granted- Grade: A-Very good to Excellent) 2012

Internship Carnegie Institution for Science 2011

TEACHING EXPERIENCE

HEINRICH HEINE UNIVERSITY DUESSELDORF Düsseldorf (DE)

Thesis so-supervisor and second reviewer: 2023

Clelia Sara Lolito: Visualization and comparison of stress-induced calcium signaling in *Arabidopsis thaliana* roots and leaves using genetically encoded fluorescence-based biosensors

Celine Weippert: Visualization of calcium signaling in *Bacillus rhizobacteria* during *Arabidopsis thaliana* root colonization using genetically encoded fluorescent biosensors

Thesis advisor: Bachelor, master and PhD levels 2019 –2023

M-4459: Biosensor Engineering: Principles and Strategies 2018 –2021

M-4457: Optogenetic Cell Control, Advanced Microscopy and Quantitative Imaging 2022 –2023

M-4473: Challenges and Opportunities of Translational Developmental Biology 2023

Lectures: Genetically encoded fluorophore-based biosensor engineering 2018 –2023

Lectures: Quantitative data analysis 2018-2021

Workshop: Fluorimetric analyses using the Tecan plate reader 2019
UNIVERSITY OF MALAGA Malaga (ES)
Thesis co-tutor & guest teacher: 2022-2023
Alfonso Gamaza Vico : Fluo-resce in the face of adversity: Design and use of sensors to understand Nitrogen (N) transport in plants

MEMBERSHIP AND SERVICE

Biophysical Society 2017 -
American Association for the Advancement of Science (AAAS) 2020 -
American Society for Biochemistry and Molecular Biology (ASBMB) 2020 -
American Society for Cell Biology 2017 (ascb) 2020 -
American Phytopathological Society (APS) 2020-
Microbiology Society 2022 -
International Society for Molecular Plant-Microbe Interactions (IS-MPMI) 2022 -
German Society for Plant Sciences (DBG) 2023-
Peer-review for international journals 2017 -
JACS Au
Plant Physiology
Planta
Bio-protocols
Current Biology
Nature communications
New phytologist

VOLUNTEERING, ADVOCACY & AMBASSADOR SERVICES:

EU funded Scola ULB: Tutor 2008-2009
AAAS: Community ambassador for women in STEM 2022-
APS bacteriology committee: Social media liaison 2022-
UN: volunteer 2023-

REFERENCES

Prof. Dr. Guido Grossmann

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Düsseldorf (DE)
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Dr. Hélène Javot

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Prof. Dr. Jörg Fitter

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