# Mr Nicolas Fauré

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## Current Activity

**Ph. D. Student in Chemistry and Physics of Atmospheric Aerosols** September 2021-
*University of Gothenburg, Gothenburg, Sweden*
Supervisor: Pr. Erik S. Thomson
Co-supervisor: Dr. Xiangrui Kong

## Membership of Scientific Societies

**Nordic Society for Aerosol Research (NOSA) early career scientist board member** 2022-

## Education

**Master 2 in Atmospheric Sciences (Excellent)** 2020-2021
*University of Lille, Lille, France*

**Master 1 in Climate Environment Application and Research (Excellent)** 2019-2020
*University of Paris Saclay, Orsay, France*

**Bachelor's degree in chemistry and Biology (Excellent)** 2016-2019
*University of Strasbourg, Strasbourg, France*

## Previous research activities

**Master 2 Thesis in Atmospheric Chemistry** January 2021-June 2021
*University of Helsinki, Helsinki, Finland*
Focus: Detection of Highly Oxygenated Molecules (HOM) from a-pinene and $O_3$ reaction.
Supervisor : Pr. Mikael Ehn

**Master 1 Thesis in Atmospheric Chemistry** March 2020-June 2020
*University of Helsinki, Helsinki, Finland*
Focus: Bibliographic work (due to Covid-19) on aerosols' aqueous chemistry.
Supervisor : Pr. Mikael Ehn

## Presentations at conferences and seminars

January 2025 - **Nordic Society for Aerosol Research (NOSA) Symposium**
*Aarhus, Denmark*
Poster: What can a drop from the Arctic Ocean tell us about surface chemistry on primary marine aerosol surfaces below deliquescence?

October 2024 - **Gothenburg Air Quality and Climate Biennial**
*Gothenburg, Sweden*
Poster: Formation of Sodium Chloride on the Surface of a Sulfate-Rich Gobi Desert salt in Response to Water Adsorption

May 2024 - **Swedish Climate Symposium**
*Norrköping, Sweden*
Poster: Can surfactants act as surfaces for ice nucleation in the atmosphere?

April 2024 - **Molecular Level Understanding of Atmospheric Aerosol**
*Corsica, France*
Poster: Formation of Sodium Chloride on the Surface of a Sulfate-Rich Gobi Desert salt in Response to Water Adsorption

October 2023 - **Gothenburg Air Quality and Climate Seminar**
*Gothenburg, Sweden*
Oral: ARTofMELT expedition

March 2022 - **Nordic Society for Aerosol Research (NOSA) Symposium**
*Oslo, Norway*
Poster: How do salts' surfaces behave in the presence of water vapor?

December 2022 - **9th Atmospheric Pressure X-ray Photoelectron Spectroscopy Workshop**
*Baden, Switzerland*
Poster: How do salts' surfaces behave in the presence of water vapor?

October 2022 - **Gothenburg Air Quality and Climate Biennial**
*Gothenburg, Sweden*
Poster: How do salts' surfaces behave in the presence of water vapor?

June 2022 - **Southern Ocean Observing System Workshop**
*Gothenburg, Sweden*
Oral: Investigation of the Ice Nucleation ability of Marine Aerosols.

May 2022 - **Molecular Level Understanding of Atmospheric Aerosol**
*Los Angeles, USA*
Poster: What can salt and water vapor interactions tell us about Martian water?

May 2022 - **The Cryosphere and Atmospheric Chemistry Workshop**
*Online*
Poster: What can salt and water vapor interactions tell us about Martian water?

## Participation in international courses and schools

October 2023 - **Microbes at the Interface of Land-Atmosphere Feedbacks (MILAF)**
*University of Aarhus,* Sandbjerg, *Denmark*

November 2022 - **Arctic in a Changing Climate**
*University of Gothenburg, Gothenburg, Sweden*

## Beamtime participations

June 2024 - **Aerosol in-flight X-ray Photoelectron Spectroscopy (XPS)**
*MAX IV, Lund, Sweden*

May 2024 - **Ambient Pressure X-ray Photoelectron Spectroscopy (APXPS)**
*SOLEIL, Gif-sur-Yvette, France*

April 2024 - **Ambient Pressure X-ray Photoelectron Spectroscopy (APXPS)**
*MAX IV, Lund, Sweden*

September 2023 - **Ambient Pressure X-ray Photoelectron Spectroscopy (APXPS)**
*Swiss Light Source, Paul Scherrer Institute, Switzerland*

April 2023 - **Ambient Pressure X-ray Photoelectron Spectroscopy (APXPS)**
*MAX IV, Lund, Sweden*

March 2023 - **Scanning Transmission X-ray Microscopy (STXM)**
*UVSOR, Okazaki, Japan*

March 2023 - **X-ray Absorption Spectroscopy (XAS) in liquid cell**
*UVSOR, Okazaki, Japan*

February 2023 - **Ambient Pressure X-ray Photoelectron Spectroscopy (APXPS)**
*MAX IV, Lund, Sweden*

December 2022 - **Ambient Pressure X-ray Photoelectron Spectroscopy (APXPS)**
*Swiss Light Source, Paul Scherrer Institute, Switzerland*

May 2022 - **Ambient Pressure X-ray Photoelectron Spectroscopy (APXPS)**
*Swiss Light Source, Paul Scherrer Institute, Switzerland*

September 2021 - **Ambient Pressure X-ray Photoelectron Spectroscopy (APXPS)**
*Swiss Light Source, Paul Scherrer Institute, Switzerland*

## Participation in field campaigns and expeditions

May 2023 - **Atmospheric Rivers and the onseT of sea ice MELT (ARTofMELT)**
*Arctic Ocean*

## List of Publications

**N. Fauré** et al. (2024), Formation of Sodium Chloride on the Surface of Sulfate-Rich Gobi Desert Salt in Response to Water Adsorption, Environmental Science & Technology Air.
https://doi.org/10.1021/acsestair.4c00092

X. Kong, I. Gladich, **N. Fauré**, E. Thomson, J. Chen, L. Artiglia, M. Ammann, T. Bartels-Rausch, Z. Kanji, and J. B. C. Pettersson (2023), Adsorbed Water Promotes Chemically Active Environments on the Surface of Sodium Chloride, Journal of Physical Chemistry Letters.
https://doi.org/10.1021/acs.jpclett.3c00980

**N. Fauré**, J. Chen, L. Artiglia, M. Ammann., T. Bartels-Rausch, J. Li, W. Liu, S. Wang, Z. Kanji, J. B. C. Pettersson, I. Gladich, E. Thomson and X. Kong (2023), Unexpected Ion-selective Surface Enhancement on Martian Salts Analogues upon Surface Solvation, American Chemical Society Earth Space Chemistry. https://doi.org/10.1021/acsearthspacechem.2c00204.

E. Häkkinen, J. Zhao, F, Graeffe, **N. Fauré**, J. Krechmer, D. Worsnop, H. Timonen, M. Ehn and J. Kangasluoma (2023), Online measurement of highly oxygenated compounds from organic aerosol, Atmospheric Measurement Techniques. https://doi.org/10.5194/amt-16-1705-2023

## Grants funded

**Åforsk fundation, Sweden** – 20 000 SEK 2024
**Adlerbertska Stipendier, Sweden** – 20 000 SEK 2023
**Travel Grant MILAF** – 5 000 SEK 2023
**Stiftelsen Ymer-80** – 20 000 SEK 2023
**Travel Grant 9th APXPS Workshop, Switzerland** – 500 CHF 2022
**Adlerbertska Stipendier, Sweden** – 20 000 SEK 2022
**University of Lille Mobility Grant, France** – 3000 Euro 2021
**University Paris Saclay Excellence Mobility Grant, France** – 4000 Euro 2020

## Teaching Assistant

**KEM 720 Aerosol – Master´s degree**
*Gothenburg University*
Laboratories: (1) Introduction to aerosols, (2) aerosol analysis with XRF spectroscopy and (3) formation of SOA with PAM chamber and SMPS analysis

**KEM 040 Physical Chemistry – Bachelor´s degree**
*Gothenburg University*
Laboratories: (1) IR spectroscopy and (2) kinetics

**KEM 011 General Chemistry – Bachelor´s degree**
*Gothenburg University*
Laboratories: (1) Crystallization and (2) redox reactions
Exercise Session: Entire program of "Chemical Principles" book, Zumdahl Decost

**KER 210 Analytical Pharmaceutical Chemistry – Bachelor´s degree**
*Gothenburg University*
Laboratories: (1) Crystallization and (2) redox reactions
Exercise Session: Half program of "Chemical Principles" book, Zumdahl Decost

**High School**
*Gothenburg*
Project: Measurement of PM2.5 in Gothenburg