



Faculty of Science



Center for exolife sciences Workshop

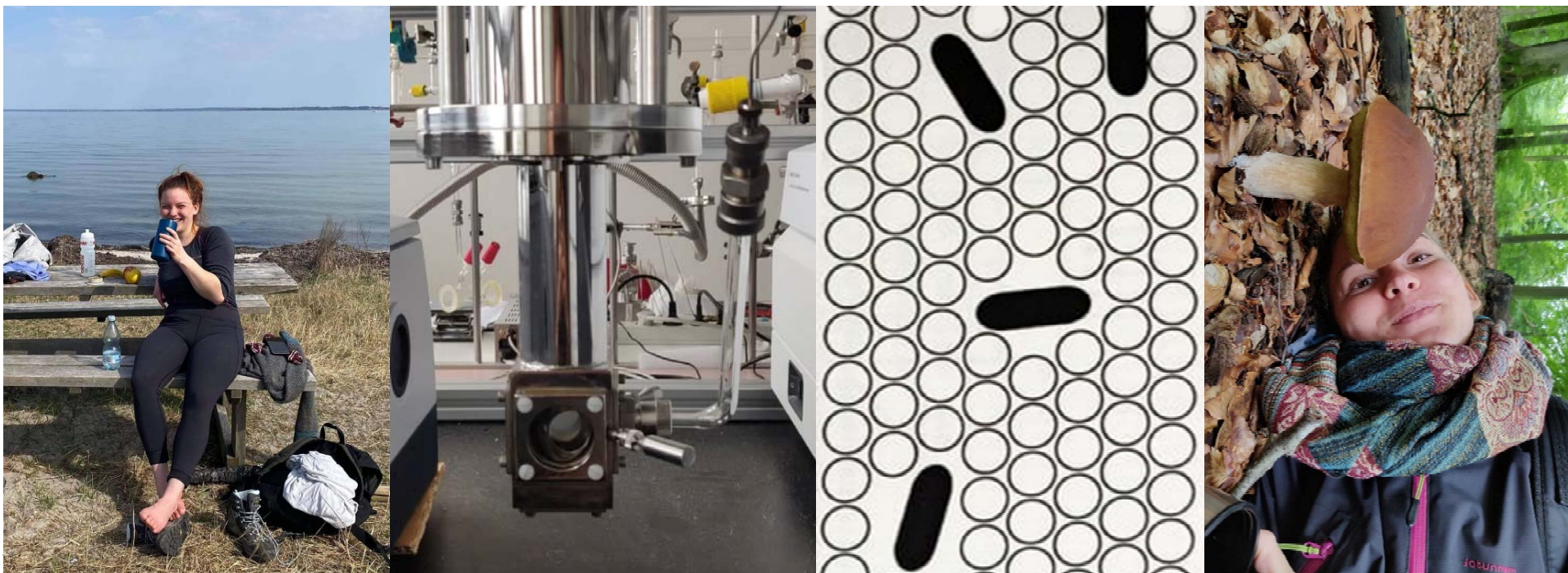
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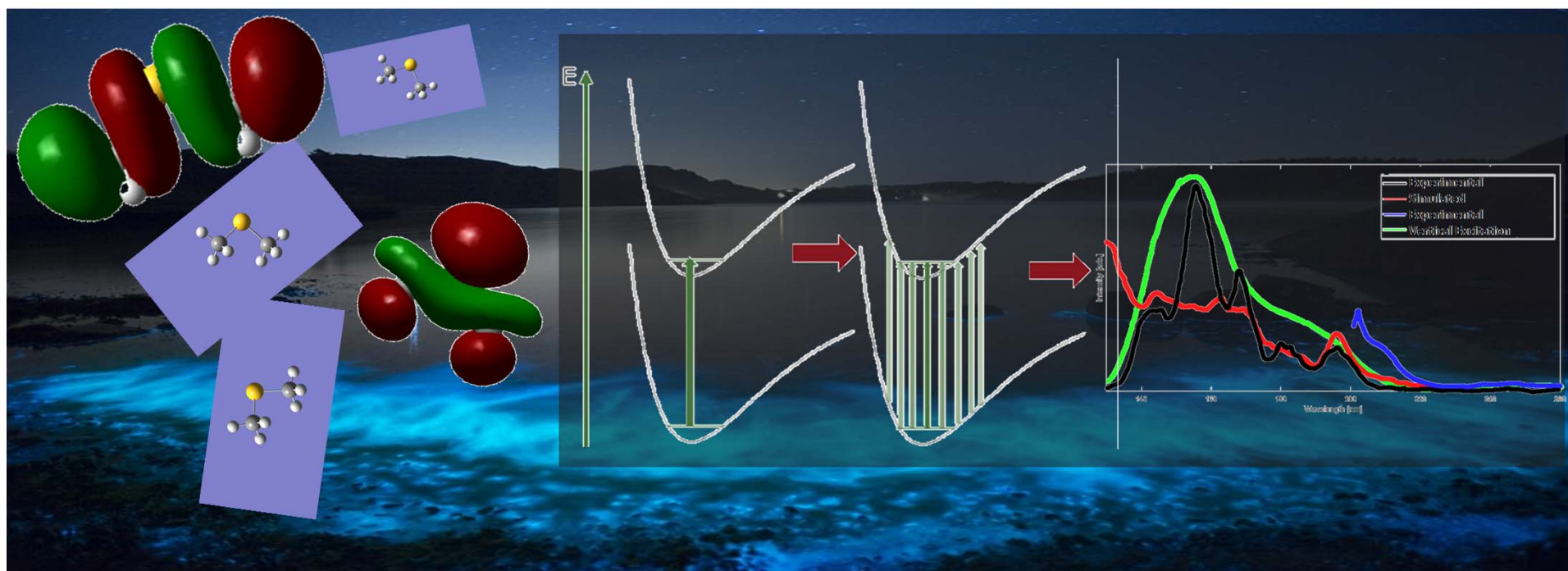
Who am I?

- Experiments I do:
 - Gas phase experiments
 - Matrix isolation experiments
- Calculations:
 - Spectroscopy: IR and UV-vis
 - Reactions



My research interests

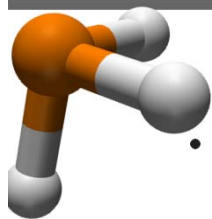
- Dynamic between life, atmospheric chemistry and spectroscopy
- The eyes we get from spectroscopy
- The use of theoretical spectroscopy to predict and understand spectroscopy



My current projects: Dimethyl Sulfides

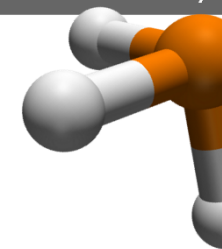
- Infrared, Raman and Electronic spectroscopy
- How do we tell them apart spectroscopically?
- Does their spectroscopy affect their atmospheric fate?





My current projects: Phosphine oxidation

- Is there a global atmospheric gaseous phosphorus cycle?
- What is the oxidation mechanism of phosphine in the atmosphere?
- Can the emission and following oxidation of phosphine influence cloud formation in the atmosphere?
- If Phosphine is a good biomarker, oxidation products and their spectral signatures should be known





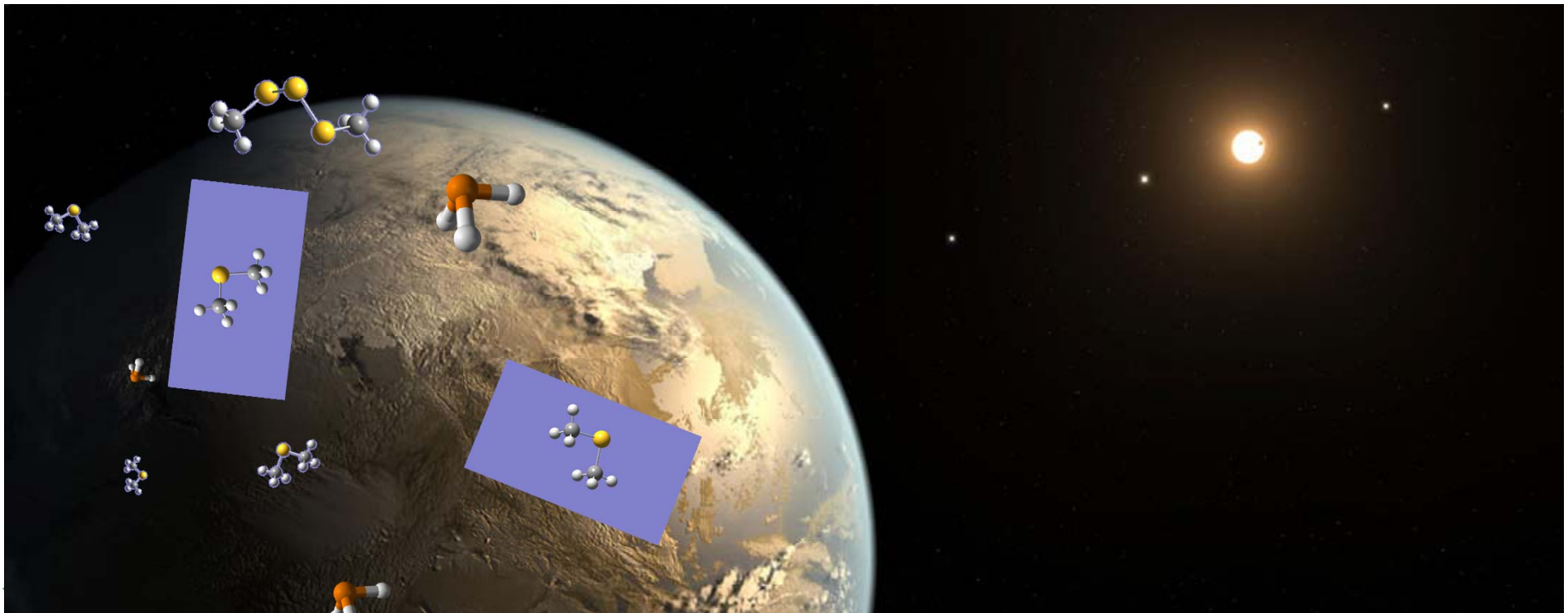
My current projects: Reactions using matrix isolation spectroscopy

- Matrix Isolation allows us to observe reactive compounds that would react immediately in the gas phase
- Currently, it is possible to perform microwave discharge before deposition → Plethora of products
- More selective methods are desired:
 - Selective hydroxyl radical formation
 - Laser to perform photodissociation reactions



How do my research interests work with CELS?

- We need accurate spectra of possible biomarkers
- We need to be able to tell compounds with similar spectral features apart
- We need information on the atmospheric fate of those biomarkers





Thank you for your attention!

