

Industrial Master Thesis Project in Medicinal Chemistry focusing on Flow Chemistry

Join the *Bach Group* in collaboration with *Ferring Pharmaceuticals*

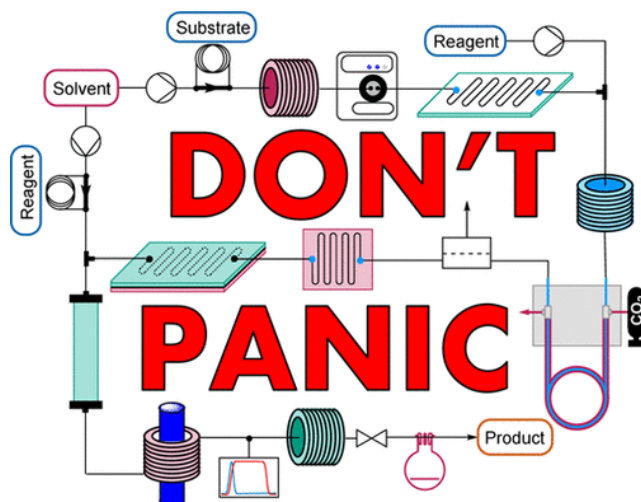


Figure from The Hitchhiker's Guide to Flow Chemistry (Chem. Rev. 2017, 117, 11796 – 11893)

Are you interested in
doing a master thesis
project within Research
and Development at a
Pharmaceutical
Company?

Flow Chemistry – what's that?

In **Flow Chemistry**, tubes are utilized to run chemical reactions in a continuous stream rather than in the traditional flasks used in batch chemistry.

This technique offers unique control of reaction parameters such as reagent stoichiometry, time, temperature and pressure which can improve the overall performance of a chemical reaction.

In some cases flow chemistry may provide access to chemistry which would otherwise be extremely challenging or too hazardous to be conducted via batch chemistry.

These advantages together with the scalability makes flow chemistry a very attractive chemical principle within the pharmaceutical industry as a complement to conventional batch chemistry.

Flow chemistry can as well be used in enhancing the overall **sustainability** of chemical reactions enabling **greener chemistry** as less solvent and reagent may be required.

About the Bach Group

In the **Bach Group** we develop biological active small-molecule inhibitors against protein-protein interactions involved in oxidative stress and inflammation. For this, we use **fragment-based drug discovery (FBDD)** whereby we evaluate the druggability of selected targets, identify novel chemical probes useful for pharmacological studies, and potentially develop lead compounds for drug development.

Synthetic organic chemistry is a fundamental part of our research, and we are interested in exploring novel and effective ways – such as Flow Chemistry - to perform typical reactions for medicinal chemistry purposes.

An Industrial Flow Chemistry MSc Project within Chemical Development at Ferring Pharmaceuticals

The **Chemical Development (CD)** department is part of **Ferring Pharmaceuticals R&D**. Here we strive to be at the cutting edge of chemical technology in our laboratories, implementing modern techniques and principles for our development projects.

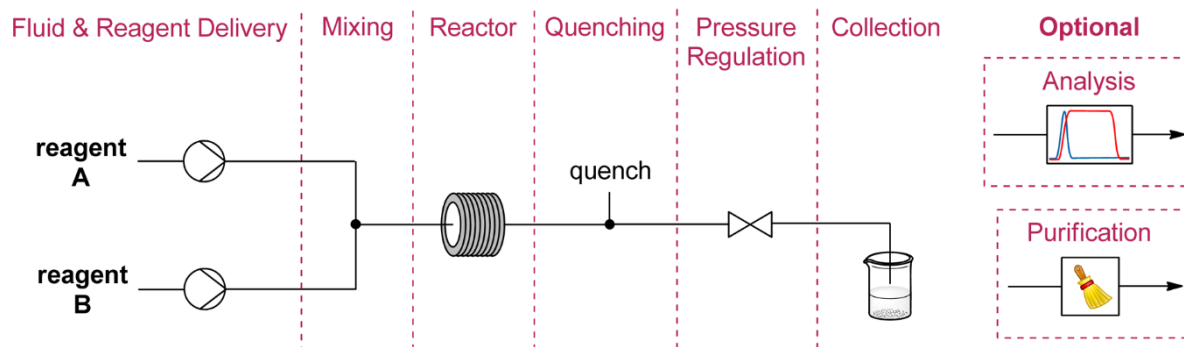
We are currently setting up state of the art flow chemistry equipment for organic synthesis projects at our labs in Kastrop and **want you to be a part of it!**

1. Setting up the equipment

Here, you will help setup brand new equipment for flow chemistry (and your future chemical workstation!) in the CD labs. You will learn to assemble and handle the individual modules within the workstation in order to develop the general understanding of flow chemistry as well as the key concepts of the principle.

2. Running chemical reactions in flow

You will be a part of implementing and testing a series of relevant chemical reactions in flow chemistry (e.g., hydrogenations, amide couplings, Suzuki couplings). For some reactions it may be relevant to compare reaction performance with batch chemistry. Here you will also have a chance to influence the direction the project depending on your chemical interests.



As a master student you will be part of the Bach Group and its on-going research as well as the Chemical Development team at Ferring Pharmaceuticals enabling **a sneak peek to the pharmaceutical industry**. The majority of the practical chemistry will take place in the labs at Ferring Pharmaceuticals in Kastrop. You will be guided by experienced scientists and technicians throughout the project.

Project Scope and Duration

This Master Thesis project has a planned weight of 60 ECTS with start September 2024.



For more information, contact **Professor Anders Bach** (Dept. Drug Design & Pharmacology, Medicinal Chemistry Research):

anders.bach@sund.ku.dk

<https://drug.ku.dk/research-sections/medicinal-chemistry/bach-group/>



Johan Bajtner

Lead Drug Substance Manager in Chemical Development
Ferring Pharmaceuticals