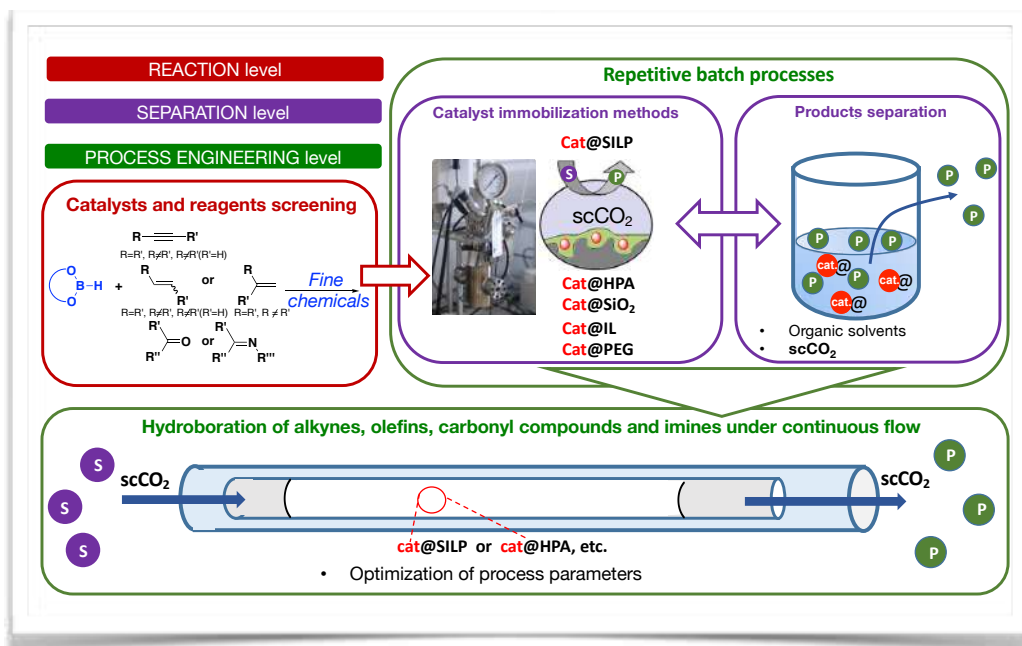


# PROJECT SONATA BIS 9

**The new approach to hydroboration reactions of the unsaturated carbon-carbon and carbon-heteroatom bonds in repetitive batch and continuous flow systems**

**2 PhD scholarships (2x36 months), studies available from October 2020**

**Adam Mickiewicz University in Poznan, Center for Advanced Technology**



**SONATA BIS 9**

UMO-2019/34/E/ST4/00068

Principal investigator:  
**prof. UAM dr hab. eng.  
Jędrzej Walkowiak**

Hosting institution:  
**Adam Mickiewicz University  
in Poznan  
Center for Advanced  
Technology**



State of the art equipped  
interdisciplinary scientific  
center co-financed in 85%  
by the EU (63 mln Euro)

## The proposition of 2 PhD scholarships

in the Center for Advanced Technology and Faculty of Chemistry at Adam Mickiewicz University in Poznan, for carrying out research during 36 (+12) months in the framework of SONATA BIS 9 project financed by the National Science Centre (Narodowe Centrum Nauki).

The scholarships are addressed to **ambitious, young chemists**, who are open to scientific challenges in **catalysis, organometallic (especially hydroboration processes) and green chemistry** aiming at developing a future carrier in the excellent equipped AMU Center for Advanced Technology. The fellows should possess a good background in catalysis, organometallic and green chemistry or enantioselective synthesis. They should be able to work in a group, taking initiative and carry out research independently. Good English speaking and writing skills are also expected.



**1**

### SEND E-MAIL TO PI

If you are looking for further information or want to share your CV I will be glad to answer your questions.  
[jedrzej.walkowiak@amu.edu.pl](mailto:jedrzej.walkowiak@amu.edu.pl)

**2**

### RECRUITMENT AT AMU

to the Doctoral School, the scholarships financed from SONATA BIS 9 project Recruitment will be carried out on September 2020.

**3**

### RESEARCH START

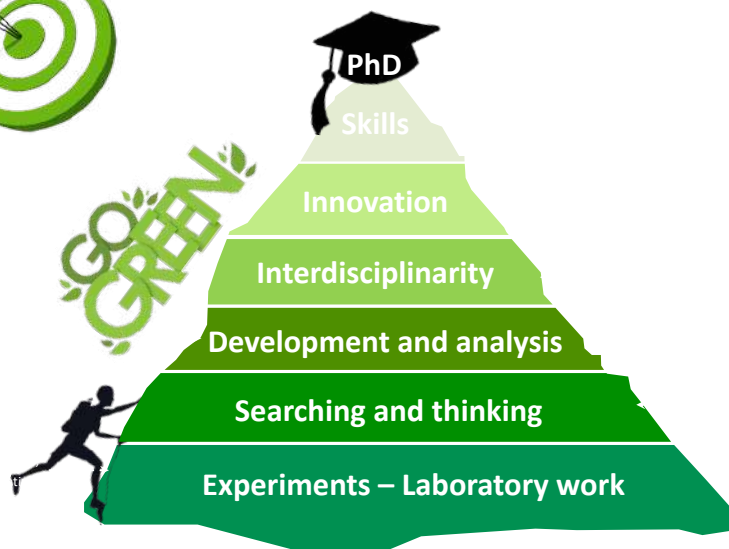
The beginning of the PhD studies and challenging research is planned on the 1<sup>st</sup> of October 2020 in SONATA BIS 9 project.



## The research project objectives

Development of new, effective, sustainable and environmentally friendly methods of synthesis of organoboron compounds *via* hydroboration reactions of olefins, carbonyl compounds and imines. The goals will be achieved by:

- 1) Effective immobilization of catalysts (transition metal complexes, main group elements catalysts and nanoparticles) in green solvents: ILs, PEGs, on a solid support, heteropolyacids or SILP.
- 2) Application of new green solvents (ILs, scCO<sub>2</sub> e.g) as reaction media and mobile phase for carrying out processes under repetitive batch and continuous flow systems and simplify the products separation methods.
- 3) Integration of the reaction and separation steps with inline analysis of products stream; possibilities for catalyst reuse.
- 4) Intensification of the process in terms of its productivity, TON and TOF values and catalyst stability by the application of continuous flow and repetitive batch hydroboration.



## Selected tasks for PhD students

- Development of new catalytic systems for selective hydroboration reactions,
- Synthesis of chiral ligands and chiral catalysts,
- Effective immobilization of the catalysts for repetitive batch and continuous flow hydroboration,
- Optimization of hydroboration of olefins, carbonyl compounds and imines in conventional and green reaction media,
- Carrying out processes under repetitive batch and continuous flow systems,
- Characterization of obtained products with various analytic techniques,
- Synthesis of *fine organoboron chemicals*.



## WHAT ARE WE OFFERING

- A challenging project with high innovative potential in catalysis and green chemistry,
- Working in an ambitious and fast-developing research team,
- Excellent facilities and access to the state of the art equipment at CAT AMU,
- Possibilities for self-development and broadening of horizons in various branches of chemistry,
- Possibilities to build your scientific career
- International conferences and trainings.

## OUR LATEST PAPERS

- ACS Sustain. Chem. Eng. **2018**, 6, 10980-10988.  
 ACS Catal. **2018**, 8, 3297-3303.  
 Adv. Synth. Catal. **2018**, 360, 2966-2974.  
 J. Catal. **2019**, 376, 219-227.  
 J. Org. Chem. **2019**, 84, 2358-2365.  
 Adv. Synth. Catal. **2020**, 362, 177-183.

## CONTACT

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