Marcel **Bajdel**

PhD Candidate · Nuclear Physicist

Frankfurter Strasse 2, 64293, Darmstadt, Germany

+4917641526879 | mbajdel@gmail.com | Mrcl3 | marcel-bajdel-917197142/

Education

Goethe University — *Frankfurt am Main, Germany*

PhD Candidate — *05.2019 - present*

- PhD Thesis - supervisors - prof. Joachim Stroth, Hans Rudolf Schmidt
  Development of Detector Control System for the Silicon Tracking System in the Compressed Baryonic Matter Experiment

University of Warsaw — *Warsaw, Poland*

M.S. in Nuclear Power Engineering and Nuclear Chemistry Specialization in Nuclear Physics — *10.2016 - 2018*

- Master's thesis - supervisors - dr hab. Agnieszka Korgul (UW), dr. Krzysztof Andrzejewski (NCNR), Łukasz Koszuk (NCNR)
  Physical aspects of implementation of thorium in PWR reactors
  - Modelling of the thorium fuel with SCALE
  - Performance evaluation of the thorium fuel in a PWR

Warsaw, Poland

B.S. in Nuclear Power Engineering and Nuclear Chemistry — *2012 - 2015*

- Bachelor's thesis - supervisor - dr hab. Marek Karny (UW)
  Calculation of decay heat in dependence on working time and power of the nuclear reactor
- The thesis was based on writing a programme in C++ language to perform simulations

Experience

GSI Helmholtz Centre for Heavy Ion Research — *Darmstadt, Germany*

PhD student — *05.2019 - present*

- Development of EPICS based containerized detector control system for the mSTS at the mCBM experiment
- Implementation of the Control System for the Thermal Demonstrator
- Development of Fiber Bragg Grating fiber optic humidity sensor for high energy physics

GSI Helmholtz Centre for Heavy Ion Research — *Darmstadt, Germany*

CBM Collaboration member — *03.2019 - present*

- Participation in developing the Silicon Tracking System
  - work in a laboratory with ASICs and FPGA based boards
  - operating commercial cooling devices - climatic chambers, chillers
  - mechanical aspects of experimental setup construction
  - instrumentation (temperature sensors, humidity sensors etc.)

JINR, Joint Institute for Nuclear Research — *Dubna, Russia*

Internship — *15.07 - 5.08.2018*

- Project title - supervisor - dr Marcin Bielewicz
  Experimental Measurement of the Level of Transmutation and Neutron Flux Density in Subcritical Nuclear Reactors ADS
- Analysis of data from QUINTA experiment
- Radioactive sources measurements employing HPGe detector

TAURON Manufacture — *Jaworzno, Poland*

Internship in Power Plant — *1.08 - 31.08.2017*

- Involvment in daily tasks considering maintenance of energy production in conventional power plant
- Improvement of knowledge considering design and operation of machinery

Institute of Plasma Physics and Laser Microfusion — *Warsaw, Poland*

Employee as Specialist Researcher and Technician — *1.11 - 31.06.2016*

- Development of software (in Python) used for the analysis of gamma spectrum
- Data analysis from ongoing experiments
- Participation in experiment on PF-1000 device

Institute of Plasma Physics and Laser Microfusion — *Warsaw, Poland*

Internship in research group leaded by S. Jednorog — *1.07 - 31.09.2015*

- Measurements of radioactive samples using HPGe detector
- Data analysis from ongoing experiments

Conferences

CBM Collaboration meeting highlight talk — *Online*
Prototyping a scalable detector control system for STS – experiences and prospects — *October 2021*

DPG 2022 online talk — *Online*
The mSTS as a pathfinder for the Detector Control System of the STS in the CBM experiment — *March 2022*

Quark Matter 2022 poster — *Cracow, Poland*
Solutions for humidity and temperature monitoring in the Silicon Tracking System of Compressed Baryonic Matter Experiment: Sensors, Testing and DCS integration — *April 2022*

FAIRness 2022 poster — *Paralia Katerinis, Greece*
Solutions for humidity and temperature monitoring in the Silicon Tracking System of Compressed Baryonic Matter Experiment — *May 2022*

FDTM 2022 poster — *Frascati, Italy*
Solutions for humidity and temperature monitoring in the Silicon Tracking System of Compressed Baryonic Matter Experiment — *June 2022*

EPICS Collaboration Meeting 2022 talk — *Ljubljana, Slovenia*
Containerized EPICS-based Detector Control System for the mini-Compressed Baryonic Matter(mCBM) experiment — *September 2022*

Attendee — *Online*
pyHEP workshop 2021, Zyimanyi 2021, EPICS Collaboration Meeting 2020/2021, ICALEPCS 2021, VCI 2022

Publications

Publications and conference papers

- S. Jednorog, B. Bienkowska, M. Bajdel et al., *Radioyttrium monitor of D-D fusion*, Proceedings of International Conference on Research and Application of Plasmas (2015)
- M. Chernyshova, S. Jednorog, M. Bajdel et al., *GEM detectors development for radiation environment: neutron tests and simulations*, Proceedings of the SPIE, Volume 10031, id. 100313X 8 pp. (2016)
- S. Jednorog, E. Laszynska, M. Bajdel et al., *A new concept of fusion neutron monitoring for PF-1000 device*, NUKLEONIKA 62(1):17-22 (2017)
- M.Bajdel, P. Zumbruch, F. Feldbauer, P. Klaus, *The Containerized Detector Control System for mSTS in mCBM*, CBM Progress Report 2020, DOI:10.15120/GSI-2021-00421
- M.Bajdel, K. Agarwal, U. Frankenfeld1, J. M. Heuser, P. Koczon, S. Mehta, P. Zumbruch, and H. R. Schmidt, *Towards humidity and temperature monitoring of the STS*, CBM Progress Report 2020, DOI:10.15120/GSI-2021-00421
- M. Bajdel, the STS team, K. Kozlova, A. Sokolov, and P. Zumbruch, *EPICS based test setups on the way to the Silicon Tracking System's Detector Control System*, CBM Progress Report 2021, DOI:10.15120/GSI-2022-00599

Skills

Programming	Python, C++, VB, Matlab, Scale (NEWT, KENO), LaTeX
Languages	native Polish, C1 English, C1 German, basics in Portuguese, French and Spanish
Controls related	TI Portal, PLC programming, EPICS, LabView, Control System Studio
Other	Kafka, Docker
Soft Skills courses	HGS-HIRe Basic Course II: Leading Teams in a Research Environment, HGS-HIRe Basic Course I: Making an Impact as an Effective Researcher

Educational trips and other activities

1 week, 2013	CERN
1 week, 2014	JINR
1 week, 2014	Nuclear Power Plant in Leibstadt
2019 - present	Member of GRADE - Goethe Graduate Academy
2019 - present	Member of HGS HIRE - Helmholtz Graduate School for Hadron and Ion Research