Junior Research Group AG Pigaleva
Macromolecular Interactions in
Complex Environments




Dr. Marina Pigaleva

Research&Drinks 12.11.2025
Berlin

- **Stamer, Katherina**, BSc, MSU, 10/19-06/22, “Features of creating composites based on chitosan biopolymer and copper nanoparticles in carbonic acid solutions under high pressure carbon dioxide”

- **Komyagina, Arina**, BSc, MSU, 10/19-06/22, “Mechanical-strength and structural features of chitosan sponges obtained from solutions in carbonic acid under high pressure of carbon dioxide”

- **Novikov, Ilya**, BSc&MSc, MSU, 10/14-06/19, “Biocompatible composite materials for medical applications produced using high pressure carbon dioxide” -> “Creation of functional composites based on biopolymers in carbonic acid solutions under high pressure”

- **Cherepanova, Janna**, MSc, MSU, 09/17-06/19, “Using supercritical fluid technology to clean, sterilize and modify bacterial cellulose films”

- **Vasiliev, Gleb**, BSc, MSU, 09/17-06/19, „Regularities of chitosan depolymerization in biphase media containing carbon dioxide under high pressure“

- **Zarate, Ricardo Martin**, MSc, FU, 08/24-11/24, “Interaction of HMGB1 with Polyelectrolytes”

- **Brumby, Niels Constantin**, BSc, FU, 03/24-05/24, „Interaction of HMGB1 with polyelectrolytes”

- **Krehan, Leon**, BSc, FU, 09/23 – 11/23, „Interaction of HMGB1 and Heparin“

- **Ponomareva, Polina**, PhD, FU, 03/24-ongoing, „ Molecular patterns and interactions in mucus-like hydrogel systems elucidated by EPR spectroscopy”

- **Watson, John,** MSc, FU, 11/25 – ongoing, “Thermodynamic properties, binding, and stability of protein complexes with glycosaminoglycans elucidated by nano dynamic scanning fluorimetry”

- **Ulugol, Ece,** MSc, FU, 05/25 – 10/2025, “Pepsin stability and activity in water, saturated with CO2 under high pressure.”

- **Elisavet, Georgiadou,** BSc, FU, 10/2025 – ongoing, ”Molecular patterns and interactions in mucus-like hydrogel systems elucidated by EPR spectroscopy.”

- **Yeom, Seungeun**, MSc, FU, 06/25 – 09/25, “Molecular patterns and interactions in mucus-like hydrogel systems elucidated by EPR spectroscopy.”

- **Caliskan, Zisan,** MSc, FU, 04/25 – ongoing, “Cationic Polymers Solubility and Materials Synthesis in Carbonic Acid Solutions under High CO_2 Pressure.”

- **Saboo, Vaishnavi,** MSc, FU, 03/2025 – 06/2025, “Molecular patterns and interactions in mucus-like hydrogel systems elucidated by EPR spectroscopy.”

- **Klumpp, Anna,** BSc, FU, 03/25 – ongoing, “Glycosilation of HMGB1” (internship), “HMGB1 interaction with RAGE receptor: a spectroscopic perspective” (thesis)

- **Weichert, Felix Maximillian**, BSc, FU, 01/25 – 04/25, “Interaction of HMGB1 with immune signaling proteins”

PREVIOUS RESEARCH PATH

Lomonosov Moscow State University

PhD in polymer science (2013 - 2015)

Staff scientist (2015 - 2022)
PI of several research grants
Teaching and supervision

Freie Universität Berlin

Postdoc in AG Risse (2023 - 2024)

Gast Dozentin (2024 - 2028)
PI in CRC1449 (just renewed)
IRTG1449 Spokesperson
PI in IRTG2662
PI in SupraFAB seed-grants
Teaching and supervision

PROJECTS

CRC 1449

Z01: Molecular patterns and interactions in mucus-like hydrogel systems elucidated by EPR spectroscopy.

SupraFAB

Seed Grant: Pepsin stability and activity in water, saturated with CO_2 under high pressure.

SupraFAB

Seed Grant: Lignin-NH_2 and lignin/chitosan hydrogels design in the carbonic acid solutions under high CO_2 pressure.

GRK 2662

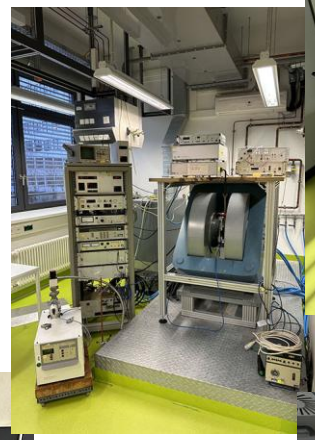
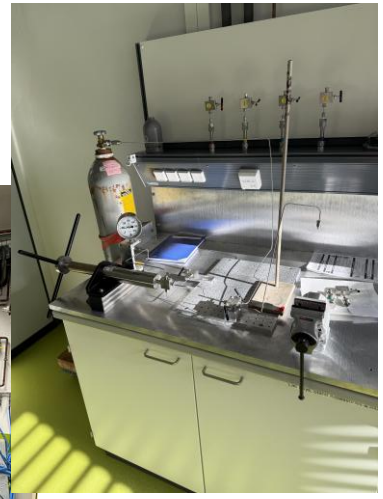
A1: Thermodynamics of Polyelectrolyte Protein Interactions

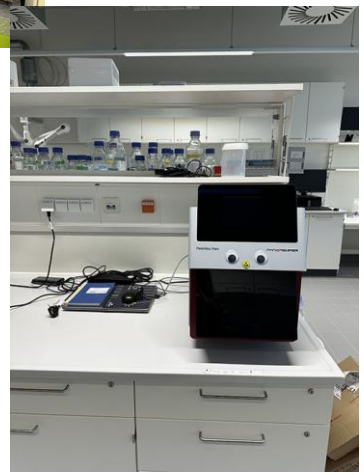
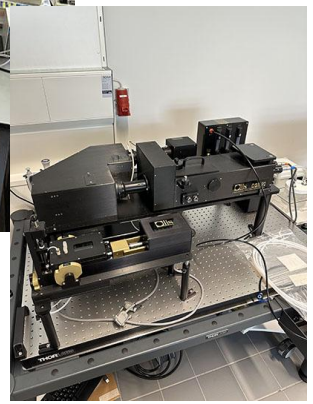
AG Risse

GRK 2662

EPR/BIOCHEMISTRY

EQUIPMENT

COLLABORATIONS




AG Risse **Prof. Ballauff** **AG Haag** **Prof. Hermann**



AG Koksch **AG Pagel** **AG Dernedde Charité – Universitätsmedizin Berlin**

AG Seitz
HU Berlin

AG Delbianco
Max Planck Institute of Colloids and Interfaces

SUPPORT, GROWTH AND FUN