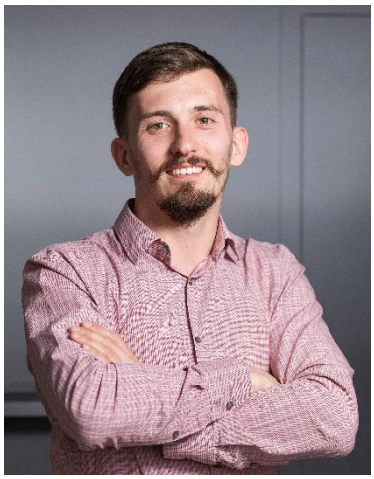
Herman Novik



WORK EXPERIENCE

Researcher

Center of Nanoscience and Technology (IIT) *Research institution*

10/2021 – Current *Milan, Italy*

Achievements/Tasks:

- Engaged in the Marie-Curie project "ASTROTECH," focusing on developing and validating glio-photonic devices in various biological models.
- Collaborated actively with European research fellows to enhance interdisciplinary research outcomes and published findings in top-tier journals.
- Participated and organized workshops and events by ASTROTECH:
  "Studying Materials-Glials-Interfaces" 19th -21st April, 2021, CNR-Research Area, Bologna, Italy;
  "How to do science, how to publish it, and how to evaluate it?" 20th -21st June 2022, INSERM, Marseille, France;
  "Seeing is believing, quantifying is deciding", 25-28th of September 2022, INEB, Porto, Portugal;
  "Astrotech mid-term report Meeting", 23-26th of January 2023, IIT-CNST, Milan, Italy;
  "Logroño workshop Fundamentals of material printing technologies and smart composites integration in tools for neural-cell cultures", 15-17th of May 2023 Avanzare Innovacion Tecnologica S.L., Avenida Lentiscares 4-6, 26370 Navarrete;
  "Cambridge School program", 9th -11th October 2023. Aimed to explore the forefront of bioelectronic medicine and neurotechnology. Talks and practical sessions covered topics such as biofabrication for bioelectronics, neural interfaces, and microelectrode array applications for studying neurodegeneration. The objective was to bridge research with practical application, providing attendees with a deeper understanding of neurotechnology's translational potential in medical science. Cambridge, United Kingdom;
  "Optoceutics company", 13-15th of March 2024. The Training School provided hands-on training in EEG diagnostics, medical device development, and cognitive testing techniques. The program emphasized practical skills in neuroscience technology, including EEG data processing and the study of light effects on circadian rhythms, while fostering professional networking. Copenhagen, Denmark.
- Experienced in working with semiconducting conjugated polymers, utilizing various device fabrication techniques such as spin coating and nanoparticle fabrication.
- Skilled in the characterization of devices through electrochemical measurements, scanning electron microscopy, confocal microscopy, fluorescence microscopy, and calcium imaging techniques.

Application Engineer

El-Nano *Nanotechnology company*

04/2021 – 01/2022 *Ontario, Canada*

Achievements/Tasks:

- Spearheaded the management and operation of the company's electrospinning systems, significantly enhancing the versatility and application of polymer products.
- Developed and optimized polymer formulations, improving the performance and reliability of the production line.
- Optimized and controlled the performance of the production line.

R&D Scientist

Inocure s.r.o. *Nanotechnology company*

02/2020 – 04/2021 *Prague, Czech Republic*

Achievements/Tasks:

- Developed high-throughput emulsion electrospinning formulation with active ingredientencapsulation and wrote Master thesis about it.
- Recieved the Best Presentation Award for the published in MDPI article "High-Throughput Electrospinning of Bioactive Scaffolds for Bone Regeneration".
- Optimized and controlled the performance of the manufacturing line for InoMASK production resulting in covered with nanofibres textile sheets up to 80cm width and 500 meters length onaverage in a day.
- Applied Six Sigma methodologies to significantly enhance product quality and operational efficiency in the production of InoMASKs..
- Successfully created and implemented SOP documentations for InoSPIN devices.
- Created, actively cooperated, and optimized over 20 different formulations for: regenerativemedicine, COVID protection and cosmetology.
- Taught electrospinning technique and introduced InoCure setups to 5 Erasmus students withfurther supervision.

Contact: ***Matej Buzgo, CEO*** *Email:* ***matej@inocure.cz***

Research assistant

Rhine-Waal University of Applied Sciences

05/2018 - 01/2020 *Kleve, Germany*

Achievements/Tasks:

- Developed composite materials such as polycaprolactone polymer with inorganic additives using needle-based electrospinning setup from the Dutch medical device company IME Technologies.
- Characterized on a daily basis obtained electrospun fibers using following methods: SEM, AFM,FTIR, TGA, DSC, EDX, tensile testing, viscometer etc.
- Recognized and published in the German Innovations report forum for the contribution in the EUbone regeneration project iP-OSTEO.
- Produced and successfully delivered over 10 hybrid scaffolds for further cell culture tests withiniP-OSTEO project.

Contact: ***Prof. Amir Fahmi*** *Email:* ***amir.fahmi@hochschule-rhein-waal.de***

Martial Arts instructor

Rhine-Waal University of Applied Sciences

04/2019 - 01/2020 *Kleve,Germany*

Achievements/Tasks:

- Led a group of more than 10 people and deliberately delivered the knowledge and 11 years ofkarate experience.
- Initiated development of full-contact karate practices at the university.
- Actively promoted healthy lifestyle and discipline among students.
- Sharpened my own leadership, communication, and teamwork skills.

Contact: ***Peter Garzke, director of the Rhine-Waal Sports*** *Email:* ***Peter.garzke@hochschule-rhein-waal.de***

EDUCATION

PhD, Physics

Polytechnic University of Milan (Polimi)

10/2021 - 10/2024 *Milan, Italy*

Thesis/Achievements/Courses:

Completed subjects:

- "Organic Electronics" (Grade: 30/30 with honours)
- "Interaction of ionizing radiations with matter: phenomenological aspects, biological applications and modeling" (Grade: 30/30 with honours)
- "Research skills" (Grade: 30/30 with honours)
- "Scientific reasoning: philosophy, logic and applications" (Grade: 30/30 with honours)

Master of Science, Bionics/Biomimetics

Rhine-Waal University of Applied Sciences

09/2017 - 12/2020 *Kleve, Germany*

Thesis/Achievements/Courses:

- Master's thesis topic: "High-throughput electrospinning of active scaffolds for bone regeneration"(with an excellent grade).
- Completed course and tutorials in FabLab (Kamp-Lintfort), where obtained hands-on experiencein 3D-printing, 3D-scanning, soft robotics, laser cutting, etc.
- Participated in the 3rd Accessibility hackathon and accomplished the 2nd place.
- Successfully completed modules in: Bionics of Materials and Structures, Bionics of Sensingincluding Sensor Fusion subject.

Bachelor of Science, Instrument Engineering

National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"

09/2012 - 06/2016 *Kyiv, Ukraine*

Thesis/Achievements/Courses:

- Bachelor's thesis topic: "The device for non-invasive testing of the chemical mixtures in air"(national grade-excellent).
- Built the device with medical application and collaborated with Amosov National Institute ofCardiovascular Surgery.
- Successfully completed subjects in: Medical Devices Assembly Techniques, Engineering Graphics and Computer Graphics using CAD software as well as Mathematical

Modelling and Simulation of Biomedical Systems using Simulink.

PUBLICATIONS

Electrospun/Sprayed Drug Delivery Systems

High-throughput electrospinning of bioactive scaffolds for bone regeneration

01.12.2020

MDPI in the 1st International Electronic Conference on Pharmaceutics10.3390/IECP2020-08666 (registering DOI)

AWARDS

Winner of the **Best Presentation Award** for **"High-throughput electrospinning of bioactive scaffolds for bone regeneration"** article in the 1st International Electronic Conference on Pharmaceutics

2nd place among 40 participants in the 3rd Accessathon

LANGUAGES

English *Full Professional Proficiency*
Russian *Native or Bilingual Proficiency*
Czech *Limited Working Proficiency*
German *Professional Working Proficiency*
Ukrainian *Native or Bilingual Proficiency*
Italian *Elementary Proficiency*

CERTIFICATES

Coursera: Experimentation for Improvement (10/2020 - Present) *Credential ID B9F6237FMJMD*
Coursera: Graphic Design (01/2021 - Present) *Credential ID 5CVU6HYH6M5W*
Coursera: Successful Presentation (01/2021 - Present) *Credential ID 7WQF8EE7WVCN*

SOFT SKILLS

Communication
Problem Solving
Leadership
Adaptability
Creativity
Teamwork
Collaboration

HARD SKILLS

3D-printing
Development
Engineering
Material Analysis
Bionics
Electrospinning
CAD
Robotics

PERSONAL INFORMATION

Place and date of birth: Ukraine, Odesa; 23.09.95

Contact details:
Work email: herman.novik@iit.it
Personal: germannovik@gmail.com