Scientific Curriculum Vitae

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Zbigniew Rozynek

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Education and work experience

10/2019 – present	Associate professor, Faculty of Physics, AMU, Poznań, Poland
08/2018 – present	Co-founder and CSO of a start-up company, CADENAS, Poznań, Poland
09/2018 – 08/2019	Fulbright scholar, SEAS, Harvard University, Cambridge, USA
09/2015 – 09/2019	Post-doc, Faculty of Physics, AMU, Poznań, Poland
05/2015 – 05/2017	Co-founder and CSO of a start-up company, XTPL, Wrocław, Poland
09/2013 – 08/2015	Post-doc, Institute of Physical Chemistry, PAS, Warsaw, Poland
10/2011 – 10/2013	Post-doc, Dept. of Physics, NTNU, Trondheim, Norway
09/2007 – 10/2011	PhD candidate, Dept. of Physics, NTNU, Trondheim, Norway
09/2006 – 09/2007	Early-stage researcher, Austrian Research Center, Profactor, Austria
01/2006 – 06/2006	Master's thesis, Adv. Tech. Inst., Surrey University, Guildford, UK
08/2004 – 06/2006	Master student, Dept. of Physics, LiU, Linkoping, Sweden
09/1999 – 06/2004	Bachelor student, Inst. of Mathematics and Physics, UTP, Bydgoszcz, Poland

09/2020 – present	Visiting researcher, Dept. of Physics, Porelab, UiO, Oslo, Norway
06/2012 – 08/2012	Visiting researcher, Dept. of Mech. Eng., PUC-Rio, Rio de Janeiro, Brazil
03/2012 – 04/2012	Visiting researcher, Dept. of Physics, UH, Havana, Cuba
02/2010 – 07/2015	Several visits at IFE, Kjeller, Norway
12/2007 – 05/2015	Several visits at UiO, Oslo, Norway
12/2007 – 12/2012	Several visits at MAX-Lab, Lund, Sweden
07/2007 – 03/2012	Several visits at ESRF, Grenoble, France

Research projects

„Efficient fabrication of single-particle-thick micropaths, their characterization and applicability", 3 years
Source of financing: The Polish National Science Centre (OPUS17), Principal Investigator

„Electric field driven propulsion and collective dynamics of homogeneous and patchy colloidal capsules", 2 years
Source of financing: European Commission (H2020-MSCA-IF-2016), Project coordinator

„Mechanical properties, specific release and motility of patchy colloidosomes", 3 years
Source of financing: The Polish National Science Centre (OPUS10), Principal Investigator

„The development of an innovative process for the preparation of a new generation of TCF layers…", 3 years
Source of financing: The Polish National Centre for Research and Development (FAST TRACK), Project co-investigator

„Mechanical properties and instability of Pickering films and emulsions", 2 years
Source of financing: The Polish National Science Centre (FUGA), Principal Investigator

„A new approach to fabricating various colloidal shells and Pickering emulsions", 2 years
Source of financing: The Foundation for Polish Science (HOMING PLUS), Principal Investigator

"*Sorption and Migration of CO2 in Porous Media*", 2 years
Source of financing: The Research Council of Norway (CLIMIT), Project co-investigator

„Interconnected Physical Phenomena as Manifested in Nano-layered Silicates", 4 years
Source of financing: The Research Council of Norway (FRINAT), Project co-investigator

Publications

(Web of Science) *h*-index: **17,** sum of times cited: **857**
(Google Scholar) *h* -index: **18,** Times cited: **1093**
Average citations per item: **24.8**, IF per publication: **4.1**

1. Z Rozynek, J Banaszak, A Mikkelsen, K Khobaib and A Magdziarz, Electrorotation of particle-coated droplets: from fundamentals to applications.
   Soft Matter, **17**, 5006–5017 (2021)
2. K Khobaib, A Mikkelsen, T Vincent-Dispotal, and Z Rozynek, Electric-field-induced deformation, yielding, and crumpling of jammed particle shells formed on non-spherical Pickering droplets.
   Soft Matter, **17**, 4413–4425 (2021)
3. K Khobaib, T Hornowski and Z Rozynek, Particle-covered droplet and a particle shell under compressive electric stress
   Phys. Rev. E. ***103***, 062605 (2021)
4. J Kurimsky, M Rajnak, R Cimbala, K Paulovicova, Z Rozynek, P Kopcansky and M Timko, Electrical discharges in ferrofluids based on mineral oil and novel gas-to-liquid oil
   J. Mol. Liq. **325**, 115244 (2021)
5. T Kubiak, J Banaszak, A Józefczak and Z Rozynek, Direction-specific release from capsules with homogeneous or Janus shells using an ultrasound approach.
   ACS Appl. Mater. Interfaces, **12**, 13, 15810–15822 (2020)
6. A Mikkelsen and Z Rozynek, Mechanical properties of particle films on curved interfaces probed through electric field induced wrinkling of particle shells.
   ACS Appl. Mater. Interfaces **11**, 32, 29396–29407 (2019)
7. Z Rozynek, K Khobaib and A Mikkelsen, Opening and closing of particle shells on droplets via electric fields and its applications.
   ACS Appl. Mater. Interfaces **11**, 25, 22840–22850 (2019)
8. R Bielas, Z Rozynek and A Józefczak, Ultrasound control of oil-in-oil Pickering emulsions preparation.
   J. Phys. D: Appl. Phys. **53**, 085301 (2019)
9. Z Rozynek, R Bielas and A Józefczak, Efficient formation of oil-in-oil Pickering emulsions with narrow size distributions by using electric fields.
   Soft Matter **14**, 5140–5149 (2018)
10. A Mikkelsen, K Khobaib, F.K. Eriksen, K.J. Måløy and Z. Rozynek, Particle-covered drops in electric fields: Drop deformation and surface particle organization.
    Soft Matter **14**, 5442–5451 (2018)
11. A. Mikkelsen, A. Kertmen, K. Khobaib, M. Rajňák, J. Kurimský and Z. Rozynek, Assembly of 1D granular structures from sulfonated polystyrene microparticles.
    Materials **10(10)**, 1212 (2017)
12. F. Dutka, Z. Rozynek and M. Napiórkowski, Continuous and discontinuous morphological transitions between capillary bridges on a beaded chain pulled out from a liquid.
    Soft Matter **13**, 4698–4708 (2017)
13. A. Mikkelsen, Z. Rozynek, K. Khobaib, P. Dommersnes and J.O. Fossum, Transient deformation dynamics of particle laden droplets in electric field.
    Colloid Surface A **532**, 252–256 (2017)
14. Z. Rozynek, M. Han, F. Dutka, P. Garstecki, A. Józefczak and E. Lujten, Formation of printable granular and colloidal chains through capillary effects and dielectrophoresis.
    Nat. Commun. **8**, 15255 (2017)
15. E C Santos, Z Rozynek et al., Ciprofloxacin intercalated in fluorohectorite clay: Identical pure drug activity & toxicity with higher adsorption & controlled release rate.
    RSC Advances, **7**, 26537 (2017)
16. A. Mikkelsen, P. Dommersnes, Z. Rozynek, A. Gholamipour-Shirazi, M. Carvalho and J.O. Fossum, Mechanics of Pickering drops probed by electric field-induced stress.
    Materials **10(4)**, 436 (2017)
17. A. Mikkelsen, J. Wojciechowski, M. Rajňák, J. Kurimský, K. Khobaib, A. Kertmen, Z. Rozynek, Electric field-driven assembly of sulfonated polystyrene microspheres.
    Materials **10(4)**, 329 (2017)
18. A. Józefczak, K. Kaczmarek, M. Kubovčíková, Z. Rozynek, T. Hornowski, The effect of magnetic nanoparticles on the acoustic properties of tissue-mimicking agar-gel phantoms.
    J. Magn. Magn. Mater. **431**, 172–175 (2017)

19. Z. Rozynek, M. Kaczmarek-Klinowska and A. Magdziarz, Assembly and Rearrangement of Particles Confined at a Surface of a Droplet, and Intruder Motion in Electro-Shaken Particle Films.
Materials **9(8)**, 679 (2016)
20. Z. Rozynek and A. Józefczak, Patchy colloidosomes – an emerging class of structures.
Eur. Phys. J. ST. **225**, 743–758 (2016)
21. A. Józefczak, K. Kaczmarek, T. Hornowski, M. Kubovčíková, Z. Rozynek, M. Timko, A. Skumiel, Magnetic nanoparticles for enhancing the effectiveness of ultrasonic hyperthermia.
Appl. Phys. Lett. **108**, 263701 (2016)
22. A. Rivera, L. Valdés, J. Jiménez, I. Pérez, A. Lam, E. Altshuler, L. Ménorval, J.O. Fossum, E. Hansen, Z. Rozynek, Smectite as Ciprofloxacin Delivery System: Intercalation and Temperature-Controlled Release Properties
Appl. Clay Sci. **124–125**, 150–156 (2016)
23. R. Castberg, Z. Rozynek, K.J. Måløy, E.G. Flekkøy, Electric alignment of plate shaped clay aggregates in oils.
Frontiers in Physics **4**:1 (2016)
24. L. Michels, J.O. Fosum, Z. Rozynek, et al., Intercalation and Retention of Carbon Dioxide in a Smectite Clay promoted by Interlayer Cations.
Sci. Rep. **5**:8775 (2015)
25. Z. Rozynek, A. Mikkelsen, P. Dommersnes and J.O. Fossum, Electroformation of Janus and Patchy Capsules.
Nat. Commun. **5**, 3945 (2014)
26. Z. Rozynek, P. Dommersnes, A. Mikkelsen, L. Michels and J.O. Fossum, Electrohydrodynamic controlled assembly and fracturing of thin colloidal particle films confined at drop interfaces.
E. Phys. J. ST, **223**, 1859–1867 (2014)
27. G. Grassi, L. Michels, Z. Rozynek, et al., Cation exchange dynamics confined in a synthetic clay mineral.
Eur. Phys. J. ST **223**, 1883–1893 (2014)
28. Z. Rozynek et al., Organoclay polypropylene nanocomposites under different electric field strengths.
Appl. Clay Sci. **96**, 67–72 (2014)
29. P. Dommersnes,* Z. Rozynek*, et al., Active structuring of colloidal armour on liquid drops.
Nat. Commun. **4**, 2066–2066, (2013) *authors with equal contributions
30. Z. Rozynek, R. Castberg, J. O. Fossum and A. Mikkelsen, In-situ monitoring of local bulk water contents and orientational order in paraffin/clay nanocomposites.
J. Mat. Res. **28**, 1349–1355, (2013)
31. Z. Rozynek, et al., Electric-field-induced structuring and rheological properties of kaolinite and halloysite.
Appl. Clay Sci. **77–78**, 1–9, (2013)
32. H. Mauroy, Z. Rozynek et al., Oxygen-controlled phase segregation in poly(N-isopropylacrylamide)/Laponite nanocomposite hydrogels.
Langmuir **29**, 371–379, (2012)
33. Z. Rozynek et al., Dipolar ordering of clay particles in various carrier fluids.
Rev. Cub. Fis. **29**, 1E37, (2012)
34. B. Wang, Z. Rozynek et al., Guided self-assembly of nanostructured titanium oxide.
Nanotechnology **23**, 075706, (2012)
35. Z. Rozynek, B. Wang, J. O. Fossum and K. D. Knudsen, Dipolar structuring of organically modified fluorohectorite clay particles.
Eur. Phys. J. E **35**, 9, (2012)
36. Z. Rozynek, et al., Structuring from nanoparticles in oil-based ferrofluids.
Eur. Phys. J. E **34**, 28, (2011)
37. Z. Rozynek et al., Electric Field Induced Structuring in Clay-Oil Suspensions: New Insights from WAXS, SEM, Leak Current, Dielectric Permittivity, and Rheometry.
J. Phys.: Condens. Matter **22**, 324104 (2010)
38. M. Zhou, Y. Gao, B. Wang, Z. Rozynek, J. O. Fossum, X. Yu and S. Raaen, Carbonate-Assisted Hydrothermal Synthesis of Nanoporous CuO.
Eur. J. Inorg. Chem. **2010**, 729–734 (2010)
39. M. Zhou, B. Wang, Z. Rozynek et al., Minute synthesis of extremely stable gold nanoparticle.
Nanotechnology **20**, 505606 (2009)
40. B. Wang, M. Zhou, Z. Rozynek and J. O. Fossum, Electrorheological properties of organically modified nanolayered laponite: Influence of intercalation, adsorption and wettability.
J. Mater. Chem. **19**, 1816 (2009)

Presentations

Total number of presentations: **37**
Invited talks: **10**, Oral presentations: **15**, Poster presentations: **13**

Feb 2021, Oslo, Norway **(invited talk)**
PoreLab lectures
"Method for efficient particle deposition on a substrate using electric field and capillary interactions".

Feb 2020, Szczyrk, Poland **(poster presentation)**
49th Winter School on Wave and Quantum Acoustics
"Direction-specific release from capsules with homogeneous or Janus shells using an ultrasound approach"

Jun 2019, Boston, USA **(poster presentation)**
TechConnect World
"Formation of printable granular and colloidal chains through capillary effects and dielectrophoresis"

Mar 2019, Boston, USA **(oral presentation and poster)**
APS March Meeting
"Single-particle thick microstructure printing via synergetic action of electric-field assembly, capillary and electrostatic interactions"
"Probing mechanical properties of particle shells formed on droplets by electric field-induced wrinkling"

Nov 2018, Boston, USA **(oral presentation)**
MRS Fall Meeting
"Formation of printable granular and colloidal chains through capillary effects and dielectrophoresis"

July 2018, Poznań, Poland **(poster presentation)**
NanoTech Poland 2018
"Mechanical properties of patchy granular capsules and their ultrasound-triggered rupturing"

Feb 2018, Szczyrk, Poland **(invited talk)**
47th Winter School on Wave and Quantum Acoustics
"Drops with particles: physical mechanisms for particle assembly"

Sept 2017, Poznań, Poland **(invited talk)**
Modern Trends in Physics Research
"Granular and colloidal 1D structures: Physics and applications"

Sept 2017, Wrocław, Poland **(poster presentation)**
44 Zjazd Fizyków Polskich
"Mechanical properties of patchy Pickering drops"

Jun 2017, Poznań, Poland **(oral presentation)**
NanoTech Poland 2017
"Formation of printable granular and colloidal chains through capillary effects and dielectrophoresis"

Mar 2017, Geilo, Norway **(poster presentation)**
The Geilo School - Physics Inspired by Living Matter, **IFE**, Geilo, Norway
"Formation of printable granular and colloidal chains through capillary effects and dielectrophoresis"

Sept 2016, Białowieża, Poland **(poster presentation)**
LXIII Otwarte Seminarium z Akustyki
"Mechanical properties and instability of Pickering droplets probed by electric field-induced stress and ultrasonic spectroscopy"

Nov 2015, Ostrava, Czech Rep **(invited talk)**
Autumn Seminar by Czech Clay Mineral Society
"A 30 min story about behaviour of clay particles in different physical systems"

Jan 2015, Warsaw, Poland **(invited talk + poster presentation)**
Mikrosympozjum sprawozdawcze
"A 20 min story about particles' misbehavior on a surface of a droplet"
"A simple approach to forming long conductive pearl-chains by utilizing dipolar and capillary interactions"

July 2014, Wroclaw, Poland **(oral presentation)**
4th National Conference on Nano- and Micromechanics Program
"Electroformation of Janus and patchy capsules"

Feb 2014, Rio de Janeiro, Brazil **(invited talk + poster presentation)**
3rd International Workshop on Complex Physical Phenomena in Materials
"EHD controlled assembly and fracturing of thin colloidal particle films confined at drop interfaces"

Sept 2013, Rome, Italy **(poster presentation)**
International Soft Matter Conference
"New approach to fabricating Janus and Patchy colloidal shells"

July 2013, Brasilia, Brazil **(invited talk)**
International Mini-Workshop on Multi-Component Soft and Complex Fluids
"Clay-based active eye pupil-like structure"

May 2013, Reykjavik, Iceland **(invited talk)**
Workshop on Soft Matter Physics and Biomembranes
"New approach to fabricating Janus and Patchy particles"

April 2013, Warszawa, Poland **(Initiator and workshop organizer)**
"1st NTNU-PAN workshop on Soft and Complex Matter Physics"

January 2013, Copenhagen, Denmark **(oral presentation)**
10th Nordic Workshop on Scattering from Soft Matter
"Intercalation and Retention of CO2 in Synthetic Fluorohectorite Clay at Near-Ambient Conditions "

December 2012, Recife, Brazil **(oral presentation)**
Mini-workshop on Complex Flows and Turbulence
"Active structuring of colloidal armour on liquid drops"

November 2012, Boston, USA **(oral presentation)**
MRS Fall Meeting
"Electric-Field-Induced Colloidal Assemblies on Drop Interfaces"

September 2012, Prague, Czech Republic **(oral presentation)**
6th Mid-European Clay Conference (MECC2012)
"Dipolar ordering of clay particles in various carrier fluids"

June 2012, Bari, Italy **(poster)**
EUROSOIL 2012 - Soil Science for the Benefit of Mankind and Environment
"Soil clay oil suspensions subjected to electric fields"

March 2012, Havana, Cuba **(oral presentation and posters)**
MarchCOMeeting'12
"Self-organization from Electrically Polarized Clay Particles"
"Clay-based drug adsorption and delivery: WAXS studies of drug intercalation and release"

January 2011, Kjeller, Norway **(poster)**
Eighth Nordic Workshop on Scattering from Soft Matter
"WAXS studies of Clay/Paraffin Composites"

December 2010, Recife, Brazil **(oral presentation)**
International Workshop on Complex Physical Phenomena in Materials
"Electric-field induced alignment of modified Na-fluorohectorite clay particles"

December 2010, Boston, USA **(oral presentation)**
MRS Fall Meeting
"Electric-field induced alignment of modified Na-fluorohectorite clay particles"

October 2010, Trondheim, Norway **(art exhibition)**
"Complex Art", Z. Rozynek and colleagues from the complex group.

August 2010, Budapest, Hungary **(oral presentation)**
5th Mid-European Clay Conference
"Electric-field induced alignment of modified Na-fluorohectorite clay particles"

January 2010, Helsinki, Finland **(poster)**
7th Nordic Workshop on Scattering from Soft Matter
"X-ray Scattering Study of a Clay/Gelatine Hybrid Electrorheological Elastomer"

December 2009, Boston, USA **(oral presentation and poster)**
MRS Fall Meeting
"Wide Angle X-Ray Scattering Studies of Guided Assembled Organoclay Electro-rheological Suspensions"
"Structural Changes in Polymer/Clay Melted Nanocomposites Induced by Electric Field"

June 2009, Italy **(oral presentation)**
14th International Clay Conference
"Dynamic Column Formation of Na-Fluorohectorite Clay Particles: Wide Angle X-Ray Scattering and Rheological Studies"

August 2008, Dresden, Germany **(oral presentation)**
11th Conference on Electrorheological Fluids and Magnetorheological
"Dynamic column formation in Na-FLHC clay particles: Wide angle X-ray scattering and rheological studies"

Organizing/assisting in international conferences/workshops

May 2012, Svolvær, Lofoten, Norway **(assisting in organizing)**
„International Workshop on Soft Matter Physics & Complex Flows", scientific workshop

March 2012, Havana, Cuba **(assisting in organizing)**
„MarchCOMeeting'12: Complex matter physics: materials, dynamics and patterns", scientific workshop

April 2013, Warszawa, Poland **(initiating and organizing)**
„1st NTNU-PAN workshop on Soft and Complex Matter Physics", scientific workshop

Public engagement

Mar 2018, OSKA, workshop for student organized at AMU, Poznań **(jury member)**

Jan 2017, Workshop for high school students at AMU, Poznań **(lecturer)**
"From science to business" "Od nauki do działania"

June 2015, Children University **(lecturer)**
"Do all liquids flow? **"**

April 2011, EBEC Nordic **(jury member)**
Annual engineering competition organized by the Board of European Students of Technology

Selected news articles

July 2018, Science Trends
„Slow-Release of Two Classical Antibiotics: Finding the Matrix Right under Your Feet"

May 2017, Science Newsline
"International Team Solves Mystery of Colloidal Chains"

May 2017, ECN Magazine
"Fast, Simple Way to Create Two-Dimensional Electronic Circuits"

Jan 2017, FNP
"Rozmowy na 25-lecie Fundacji na rzecz Nauki Polskiej"

May 2015, Nauka w Polsce
"Glina przyszloscia magazynowania CO_2?"

April 2015, Science20
"Clay Works for Capturing CO_2"

June 2014, RedOrbit
"Janus Capsules Easily and Affordably Produced for the First Time"

June 2014, ScienceDaily
"Janus capsules, miniature hollow structures, produced easily at low cost"

June 2014, Phys.Org
"Shaken, not stirred—mythical god's capsules please"

June 2014, RMF24

"Nie słyszałeś o kapsułach Janusa? Polski fizyk odkrył, jak je tworzyć"

June 2014, Nauka w Polsce
"Polscy naukowcy znaleźli sposób na kapsuły Janusa"

July 2013, Spacemart news
"Designer droplets open new possibilities"

Reviews

Research articles

Lab on a chip (x1), Angewandte Communications (x1)

Nanomaterials (x4), Soft Matter (x5), Materials (x2)

Polymers (x2), Smart Materials and Structures (x1)

Acta Polonica (x2), CMSE 2016 – proceedings (x1)

Fluids (x2), Compr. Rev. Food Sci. Food Saf. (x1)

Applied Sciences (x1), Langmuir (x2)

Research proposals

NAWA, the Polish National Agency for Academic Exchange (x6)

Membership

02/2021 – present member of the International Microelectronics Assembly and Packaging Society, iMAPS-UK

09/2019 – present member of the Harvard SEAS Photonics Club, Harvard

01/2009 – present member of the Materials Research Society, USA, MRS

01/2015 – present member of the Club of the Foundation for Polish Science, Klub-FNP

12/2014 – present member of the Polish Acoustical Society, PTA

Teaching activities

TFY4220 – Solid State Physics, NTNU-Trondheim, assisting in teaching and conducting laboratory classes
TFY4185 – Measurement Techniques, NTNU-Trondheim, assisting in teaching and conducting laboratory classes
TFY4155 – Electricity and Magnetism, NTNU-Trondheim, assisting in teaching and conducting laboratory classes
In total, more than 1000 hours.

During my work at the Institute of Physical Chemistry of the Polish Academy of Science in Warsaw (2013–2015) and at Adam Mickiewicz University in Poznań, Poland (2015–2018) I supervised and co-supervised several PhD and Master's students, and also voluntarily have been giving facultative lectures for both Bachelor and Master's students.

In October 2015, I had a pleasure to teach at the Children's University in Warsaw, and I was awarded the best lecturer of 2015 at the Children's University.

Supervisor/mentor for PhD and Master's students of physics/chemistry

Auxiliary supervisor for two PhD candidates, main supervisor for one PhD candidate, scientific advisor for one PhD candidate, and mentor for three post-doctoral fellows (AMU, Poznań, Poland). Scientific advisor for twelve MSc students (one at Harvard University, five at NTNU, four at IPC-PAS, Warsaw, Poland and two at AMU, Poznań, Poland)

present	Yaroslaw Harkavyi (PhD candidate) *Properties of 1D particle structures formed outside liquid environment*
present	Khobaib Khobaib (PhD candidate) *Properties of homogenous and inhomogeneous colloidal and granular shells*
present	Rafał Bielas (PhD candidate) *Pickering emulsions by electric fields and ultrasounds*
2017 – 2019	Tomasz Kubiak (post-doc) *Direction-specific release from capsules using an ultrasound approach*
2017 – 2017	Peter Kesa (post-doc) *Efficient fabrication of patchy microcapsules using microfluidics*
2016 – 2019	Katarzyna Kaczmarek (PhD candidate) *Magnetic nanoparticles for enhancing the efficiency of magneto-ultrasonic heating*
2017 – 2018	Joanna Banaszak (MSc) *Ultrasound wave induced fracturing of granular capsules*
2017 – 2017	Marta Obrempalska (MSc) *Formation of Pickering droplets by E-fields, monitored by ultrasonic waves*
2015 – 2016	Jarosław Wojciechowski (MSc) *The influence of chemical modification of PS micro-particles on their E-field-induced organization*
2015 – 2015	Kamil Kacprzak (MSc) *Self-guiding of colloidal particles on liquid interfaces*
2014 – 2015	Marzena Prus (MSc) *New methods for fabricating Janus shells*
2014 – 2014	Anna Kalicka (MSc) *Formation of patchy colloidal capsules and their pharmaceutical applications*

Scientific workshops & training courses

Feb 2021, IMAPS UK Chapter (online)
"Semiconductor Packaging Workshop 2021: SPW-2021"

Mar 2019, Harvard University, Cambridge, MA, USA
"Diversity: A Workshop and Forum of Ideas"

Jan 2019, Harvard University, Cambridge, MA, USA
"Science Undergraduate Mentoring Workshop: handling challenging situations & celebrating achievements, embracing diversity, equity, and inclusion, and supporting student science writing"

Mar 2017, IFE, Geilo, Norway
"The Geilo School - Physics Inspired by Living Matter"

Nov 2015, Foundation for Polish Science, Warsaw, Poland
"On mentoring and coaching in science"

Apr 2015, Econnect Communication, Wroclaw, Poland
"Presenting of research results using Web 2.0 tools"

Mar 2015, IFE, Geilo, Norway
"The Geilo School - Cooperative particles: Patchy colloids, active matter and nanofluids"

Nov 2014, Vitae, Cracow, Poland
"Public Engagement for Scientists"

Oct 2014, Webinars
Several short trainings by Thomson Reuters

Mar 2013, IFE, Geilo, Norway
"The Geilo School - Soft Matter Confinement: From Biology to Physics"

Apr 2011, IFE, Geilo, Norway
"The Geilo School - Cooperative Phenomena in Flows"

Sep 2009, Houm AS - Anton Paar, Drammen, Norway
"Rheology workshop"

July 2009, University of Aarhus, Aarhus, Denmark and DESY Hamburg, Germany
"NordForsk Research Training Course on the Application of X-ray Synchrotron Radiation in Chemistry, Physics and Biology"

Aug 2008, Diamond, Oxford, UK
"Applications of Synchrotron Radiation Techniques in Earth and Environmental Science"

June 2008, MAX-Lab, Lund, Sweden
"Nordic and European Summer School - X-ray Research for the Future using Ultra Brilliant Sources"

Awards

Rector Award for scientific achievements in 2019
Adam Mickiewicz University, May 2020
Team Award for scientific achievements

Fulbright Scholarship (Senior Award Program 2018–2019)
Polish-US Fulbright Commission
Awarded a 9-month long scholarship to work at the Harvard University, Cambridge, USA

Rector Award for scientific achievements in 2017
Adam Mickiewicz University, Oct 2018
Team Award for scientific achievements

Rector Award for scientific achievements in 2016
Adam Mickiewicz University, Oct 2017
Team Award for scientific achievements

The Best Lecturer Award
The Children's University, Oct 2015
Awarded the best lecturer of 2015 at the Children's University

Research Award for Young Scientists
IPC of the Polish Academy of Sciences, May 2015
Laureate of the "Young researchers IPC PAS" competition

Poster award
The Geilo School, Norway, Mar 2015
"A simple approach to forming long conductive pearl-chains by utilizing dipolar and capillary interactions"

Poster award
Mikrosympozjum Sprawozdawcze, Warsaw, Poland, Jan 2015
"A simple approach to forming long conductive pearl-chains by utilizing dipolar and capillary interactions"

Stipendship (for 3 years)
Ministry of Science and Higher Education in Poland, Sept 2014
Best talented young researchers in Poland

Poster award
Workshop on Soft Matter Physics and Biomembranes, Reykjavik, Iceland, May 2013
"New approach to fabricating Janus and Patchy particles

Poster award
Soft Matter Physics & Complex Flows, Lofoten, Norway, May 2012
"Soil clay oil suspensions subjected to electric fields"

Finalist
AIP Seed Capital competition, Warsaw, June 2011
AIP Seed Capital is a seed fund operating in association with the Academic Incubators of Entrepreneurship

Patents, commercialization and start-up related activities

Work experience

08/2018 – present co-founder and CSO, **CADENAS**, Poznań, Poland

01/2019 – 05/2019 team member, **PETRICHOR**, Cambridge, MA, USA

05/2015 – 05/2017 co-founder and CSO, **XTPL**, Wrocław, Poland

Industrial innovation

2015 co-founded (together with dr. Filip Granek) a technological company XTPL S.A.

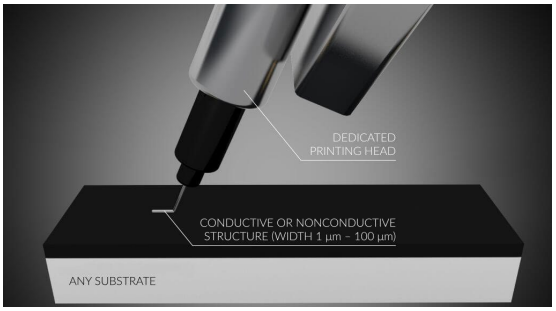
2016 acquired seed capital from VC fund to support the growth of the company

2016 received funds from the Polish National Centre for Research and Development

2015 – 2017 together with a team of talented scientist that I was leading we developed a new method for printing of ultra-fine conductive paths

2018 initial public offering, XTPL made its debut on Warsaw Stock Exchange

2020 first commercial sale of the beta version of the printer



Developed the core technology and assisted in designing the printer (shown above)

Workshops/Trainings

Spring 2019 "President's Innovation Challenge", **Harvard University**, Cambridge, MA, USA

Spring 2019 "Venture Incubation Program - Harvard innovation labs", **Harvard University**, Cambridge, MA, USA

Jan 2019 "How to grow ideas or start a company", **Harvard Innovation Labs**, Boston, MA, USA

Jan 2019 "Nuts and Bolts of New Ventures – 2019", **MIT Course**, Cambridge, MA, USA

Sep 2018 "To develop and support the startup ecosystem", **Startup Boston**, Boston, MA, USA

Mar 2018 "From research to business", **European Patent Office**, Webinars

Nov 2013 "How to use the commercial potential of the ideas created as results of the research", **Fastrac**, Poland

Conferences/Trade shows

Oct 2019 – Made in Wroclaw, Wrocław, Poland

Oct 2019 – InterNanoPoland, Katowice, Poland

Jun 2019 – TechConnect World, Boston, USA

Patents/patent applications

1. F. Granek, Z. Rozynek, Bottom-up method for forming wire structures upon a substrate. International patent (PCT) filed on 21.03.2017, published on 28.09.2017 WO2017162696 A1 (link). European patent granted EP3433879 (link). Patent in force in the following European countries (link): Germany, France, Great Britain, Switzerland, Poland; and in South Korea (KR20187030038, link), China (CN109478558B, link), Israel (IL261919D0, link), Australia (AU2017238313, link), and USA (US20190106804A1, link). Pending decision in several other countries, i.e., Japan, Canada, Taiwan.
2. Z. Rozynek, A. Magdziarz, (PL) Sposób wytwarzania emulsji Pickeringa, emulsja Pickeringa i jej zastosowanie, (EN) Method for efficient fabrication of Pickering emulsion, Pickering emulsion and its applications. Patent application submitted on 30.05.2018 to the Polish Patent Office, P.425781. Patent granted PL425781A1 (link).
3. Z. Rozynek, A. Magdziarz, (PL) Sposób wytwarzania ścieżki koralikowej na powierzchni substratu, system do wytwarzania takiej ścieżki i jej zastosowania oraz zestaw, (EN) Method of producing a bead path on a substrate surface, system for producing such a path and its use, and a kit. Patent application submitted on 02.08.2018 to the Polish Patent Office, P.426531. Patent granted PL235124 (link).
4. Z. Rozynek, A. Magdziarz, Process of fabricating a beaded path on the surface of a substrate, a system for fabricating such a path, use thereof, and a kit. International patent (PCT) filed on 08.01.08.2019, published on 06.02.2020 WO2020027673 A1 (link). Received positive opinions regarding the patentability 06.05.2020 (link). Application submitted to EPO (March 2021), pending decision.

Soft and hard skills

I received my PhD in the field of soft matter physics from NTNU, Trondheim, Norway. My research involved studies of the general physical processes and phenomena in electrorheological systems, emulsions, micromaterials and mesoporous materials using a variety of experimental methods, such as **X-ray scattering**, **atomic force microscopy**, **electron microscopy, rheometry**, **optical microscopy techniques**, and more. In addition to working with these techniques at the laboratories of NTNU, experiments were performed at **X-ray synchrotron sources** and **neutron reactors** in collaboration with foreign laboratories and research groups. The research often required **image processing**. I also used **fast camera photography** in my research. I **designed and fabricated several sample cells** that served for experiments both in the in-house laboratory and on synchrotron sites. My experience in using many experimental techniques; my **capability in designing electronic circuits**; my **machinist** (milling machines, etc.) and **computer skills** (MATLAB, Origin LabVIEW, EndNote, etc.); and my soft skills, such as my **persistence, patience, scrupulosity, out-of-the-box thinking, and creativity**, made me become a successful experimentalist.

During my postdoctoral studies at NTNU I was involved in collaborative studies focused on the behaviour of CO_2 in porous materials. My input to this project was mainly through experimental studies that included **sample cell design, sample preparation, measurements, data analysis and presentation, and active collaboration** with partners from UiO, Oslo and IFE, Kjeller, Norway.

My experimental skills further flourished at the Institute of Physical Chemistry of the Polish Academy of Science, where I worked on the emulsion instabilities and new methods of efficient fabrication of droplets covered with patchy particle shell. I learned how to **design and fabricate microfluidic devices** and **modify their surfaces** using physical and chemical treatments. Then at the Institute of Acoustics, Adam Mickiewicz University, Poland, I started acquiring **knowledge on ultrasound techniques**. I eventually design an experiment for researching controlled release from microcapsules using MHz-frequency ultrasound that led to discovery of a new concept of releasing inner materials from microcapsules having different properties of their shells.

As the principal investigator of four research projects, I **acquired conceptual and interpersonal abilities, such as planning, communication and decision-making**, which gave me the capacity to perform executive duties in an academic environment. To further highlight **my management and experimental skills**, I wish to note that in 2015, I co-founded a technological company in Poland and helped to develop the company's core technology to reach a mature state for its commercialisation. I **led a team of scientists from different disciplines**, including physicists, chemists, electronic engineers and material scientists, and together, we held the company's initial public offering in 2018. This start-up experience aided to strengthening both my organizational and experimental attributes, which I find very helpful in achieving research goals faster.

My fairly enjoyable **experience in outreaching and popularising science** translated directly to the extensive promotion of both the conducted research and the science field among university students and the general public that will, in turn, help to attract people to the field of science and eventually promote a society based on knowledge.

I have **experience in writing research proposals** and **capabilities of attracting funding**, including that from European Commissions, and Polish Research Councils. I also participated in several workshops and trainings, as listed above.