CLINAM

European Foundation for Clinical Nanomedicine

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CURRICULA VITAE POSTERS

Hend Mohamed Abdel-Bar

Schlumberger Research Fellow at King's College London & Associate Professor of Pharmaceutics, Faculty of Pharmacy, University of Sadat City

Hend Mohamed Abdel-Bar joined the National Organization of Drug control and research, the agency responsible for drug quality control in Egypt, as a quality control specialist (2014-2017). In 2016, she was appointed as a Lecturer at the University of Sadat City, Egypt. Her current research interest is controlled release systems, nanotechnology, experimental design, formulation optimization, lipid-based systems, nanocomposites, topical drug delivery, ocular delivery systems, intra-nasal drug delivery systems, gene delivery, brain and tumor targeting. In 2018 till present, she joined Al-Jamal's lab as a Newton then Schlumberger Research Fellow.

RECENT PUBLICATION

- Mohamed Hamdi, **Hend Mohamed Abdel-Bar**, Enas Elmowafy, Khuloud T. Al-Jamal, Gehanne A. S. Awad. An integrated vitamin E-coated polymer hybrid nanoplatform: A lucrative option for an enhanced in vitro macrophage retention for an anti-hepatitis B therapeutic prospect. *PLoS One*. 2020; 15(1):e0227231.
- Eman Sadder El-Leithy, **Hend Mohamed Abdel-Bar**, Raghda Abdel-Moneum. Folate-Chitosan Nanoparticles Triggered Insulin Cellular Uptake and Improved In vivo Hypoglycemic Activity. *International journal of Pharmaceutics*. 2019; 571:118708.
- Dalia El Baihary, Rihab Osman, **Hend Mohamed Abdel-Bar**, Omaima A. Sammour. Pharmacokinetic/pulmokinetic analysis of optimized lung targeted spray dried ketotifen-dextran core shell nanocomplexes–in-microparticles. *International Journal of Biological Macromolecules*, 2019: 139: 678-687.
- **Hend Mohamed Abdel-Bar**, Rania Abd el Basset Sanad. Endocytic pathways of optimized resveratrol cubosomes capturing into human hepatoma cells. *Biomedicine & Pharmacotherapy* 2017; 93: 561-569.
- Rania Abdel-Basset Sanad, **Hend Mohamed Abdel-Bar**. Chitosan–Hyaluronic acid composite sponge scaffold enriched with Andrographolide-loaded lipid nanoparticles for enhanced wound healing. *Carbohydrate Polymers* 2017; 173: 441-450.

Seyedeh Hoda Alavizadeh

(Pharm. D, Ph.D.)
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I was born in Iran on August 14, 1986. I'm Pharm. D graduate (2004-2010) from Pharmacy school, Mashhad University of Medical Sciences (MUMS). I got my Ph. D in Pharmaceutical Nanotechnology (2011-2016) from the same school under supervision of professor Mahmoud Reza Jafari. I started my professional career as an assistant professor in the Department of Pharmaceutical Nanotechnology, School of Pharmacy, MUMS following my graduation (2016-now). During my Ph. D I worked on various cisplatin liposomal formulations including targeted and thermo-responsive formulations. My research focuses on smart nanomaterials including liposome, iron and gold nanoparticles for the delivery of chemotherapeutics to the tumor by exploiting cancer microenvironment features. I also work on developing phytochemicals for their anti-oxidant and anti-cancer properties. We have several Ph. D students working on different stimuli-responsive carriers including thermo-responsive, pH & REDOX-sensitive targeted liposome for cancer therapy. Since the focus of my Pharm.D thesis was on Leishmania, I continued my collaboration in this area in our group on drug or vaccine development for this infection.

I have previously participated in conferences including ILS/LRD Liposome Advances Conference, Athens 2017, 8th CLINAM and 10th CLINAM Conferences, in the latter I won the poster prize in basic nanomedicine category. I have won the scholarship from DAAD for the ProGRANT proposal writing course 2018 and one of my review papers on Saffron was highly cited in 2016 as reported by Essential Science Indicator of Thompson Reuter ISI.

Some of my recent international publications are as follows:

PEER-REVIEWED PUBLICATION:

- Jaafari MR*, Hatamipour M, Alavizadeh SH, Abbasi A, Saberi Z, Rafati S, et al. (2019): Development of a topical liposomal formulation of Amphotericin B for the treatment of cutaneous leishmaniasis. International Journal for Parasitology: Drugs and Drug Resistance.
- Hatamipour, H., Sahebkar AH., Alavizadeh, SH., Dorri, M., Jaafari, MR.* (2019): Novel nanomicelle formulation to enhance bioavailability and stability of curcuminoids. Iranian journal of basic medical sciences. 282-289 pp.
- Iman, M., Huang, Z., Alavizadeh, SH, Szoka, Jr FC., Jaafari, MR.* (2017): Biodistribution and In Vivo Antileishmanial Activity of 1, 2-Distigmasterylhemisuccinoyl-sn-Glycero-3-Phosphocholine Liposome-Intercalated Amphotericin B. Antimicrobial agents and chemotherapy. e02525-16 pp.
- Alavizadeh, SH., Gheybi, F., Nikpoor, AR., Badiee, A., Golmohammadzadeh, S., Jaafari, MR.* (2017): Therapeutic Efficacy of Cisplatin Thermosensitive Liposomes upon Mild Hyperthermia in C26 Tumor Bearing BALB/c Mice. Molecular Pharmaceutics. 712-721pp.

REFEREES:

Mahmoud Reza Jaafari, Ph.D.Professor, School of Pharmacy, Mashhad University of Medical Sciences (MUMS)Mashhad – Iran, Email: jafarimr@mums.ac.ir

Prof. Avi Schroeder, PhD,
Associate Professor of Chemical Engineering Laboratory for Targeted Drug Delivery and Personalized Medicine Technologies Technion - Israel Institute of Technology, Email: avids@technion.ac.il

Mona Alibolandi

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Mona Alibolandi received her Ph.D. degree majoring in medical biotechnology in 2015 from Mashhad University of Medical Sciences, Iran. Since 2015, she started her career as an assistant professor at the Pharmaceutical Biotechnology Department at the School of Pharmacy, Mashhad University of Medical Sciences, Iran. From 2016 up to now, she served as the Head of Nude Mice and Nanomedicine Laboratory at Mashhad University of Medical Sciences,

Iran. Her research topic focuses on the design of smart hybrid material nanostructures for targeted drug and gene delivery purposes. She is also interested in design and fabrication of polymersomes and their application in cancer research.

EDUCATION

- PhD of Medical Biotechnology, Mashhad University of Medical Sciences, Mashhad, Iran. Graduated 2015. **The thesis title: "Synthesis of nanopolymerosome-anti EpCAM aptamer bioconjugates for delivery of doxorubicin into cancer stem cells and evaluating them in vitro and in vivo characteristics"**
- MSc in Microbial Biotechnology, Science and Research University of Tehran. Tehran, Iran. Graduated 2012. **The thesis title: "High level recombinant expression and purification of human basic fibroblast growth factor"**

SELECTED PUBLICATIONS

- Shahriari M, Zahiri M, Abnous K, Taghdisi SM, Ramezani M, Alibolandi M*. Enzyme responsive drug delivery systems in cancer treatment. J Control Release. 2019 Jul 8; 308:172-189. (IF: 7.8).
- Zahiri M, Babaei M, Abnous K, Taghdisi SM, Ramezani M, Alibolandi M*. Hybrid nanoreservoirs based on dextran-capped dendritic mesoporous silica nanoparticles for CD133-targeted drug delivery. J Cell Physiol. 2019 Jul 5. (IF: 4.6).
- Oroojalian F, Babaei M, Taghdisi SM, Abnous K, Ramezani M, Alibolandi M*. Encapsulation of Thermo-responsive Gel in pH-sensitive Polymersomes as Dual-Responsive Smart carriers for Controlled Release of Doxorubicin. J Control Release. 2018 Oct 28; 288:45-61. (IF: 7.8).
- Mohammadi M, Taghavi S, Abnous K, Taghdisi SM, Ramezani M, Alibolandi M*. Hybrid Vesicular Drug Delivery Systems for Cancer Therapeutics. Advanced Functional Materials. 2018, 1802136. (IF: 15.63).
- Alibolandi M, Mohammadi M, Taghdisi SM, Abnous K, Ramezani M. Synthesis and preparation of biodegradable hybrid dextran hydrogel incorporated with biodegradable curcumin nanomicelles for full thickness wound healing. Int J Pharm. 2017 Oct 30; 532(1):466-477. (IF: 4.2).
- Alibolandi M, Abnous K, Mohammadi M, Hadizadeh F, Sadeghi F, Taghavi S, Jaafari MR, Ramezani M. Extensive preclinical investigation of polymersomal formulation of doxorubicin versus Doxil-mimic formulation. J Control Release. 2017 Oct 28; 264:228-236. (IF: 7.8).

Leila Arabi

Dr. Leila Arabi is an Assistant Professor of Pharmaceutical Nanotechnology, School of Pharmacy in Iran. She holds Doctor of Pharmacy and Ph.D. (summa cum laude) from Mashhad University of medical sciences, Iran. She had the one-year PhD internship during 2012-2013 at University Hospital Basel, Switzerland. Following her visit to several labs and meetings with academics in the US and Europe, she relocated back to Iran.

Her research is focused on developing nanoscale drug delivery systems with particular emphasis on developing liposomes for targeted cancer drug delivery, combination therapy, cancer immunotherapy, and gene therapy. Her researches have been recognized as highlight from the Controlled Release Society (CRS), and has led to several publications and research presentations in different nanomedicine conferences. She is currently the Communication chair of immune-Delivery focus group of CRS and serves as an ambassador in CRS Young Scientist Committee.

As an Assistant Professor with a demonstrated history of working in the hospital & health care, her goal is to link the fields of Pharmaceutical Nanotechnology to cancer Biology and immunology to improve therapeutic efficacy of conventional cancer therapies. She is also interested in empowering the role of women in science and gender parity in STEM fields.

Nerea Argarate

R&D Project Manager
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She obtained her PhD in Pharmacy (University of Basque Country, 2010). Her research is focused on the materials for Health. She has participated in autonomic, national and European projects. From 2002 to 2008 she worked between the laboratories of AZTI (Basque Country) and CSIC (group of Nanobiotechnology, Nb4D group, IQAC-CSIC). She worked in the research of novel diagnostic methods for Food Safety and Quality within the context of Spanish and European Consortium Projects. Moreover, in 2008, she was enrolled as Researcher of the CIBER-BBN at INASMET (since 2011 Tecnalia Research and Innovation, Basque Country) where she worked on new challenging research objectives related to Biomaterials for health. Her main areas of interest were nanodiagnostic methods based on easy-to-handle Point-of-Care (PoC) devices and therapeutic nanoconjugates for controlled release systems. Since 2016, she works for the Management Area of CIBER-BBN as a Project Manager.

Brahamdutt Arya

Brahamdutt Arya presently working as Senior Research Fellow under the supervision of Dr Surinder P. Singh at CSIR-National Physical Laboratory, New Delhi, India. He received his Bachelor degree in Chemistry honors From M. D. U. Rohtak (2012) and Master degree with specialization in Organic Chemistry from University of Delhi, New Delhi, India (2014). He has worked on project entitled "Suzuki- Miyura coupling reactions- A Novel approach towards natural products synthesis" as a part of his master's degree. He has also worked as assistant professor of Chemistry at Pt. N. R. S. Government College, Rohtak and taught the stereochemistry, basic organic chemistry, organometallic chemistry and bioorganic chemistry subjects (2014-15). He is Young Investigation Member and Ambassador of European Association for Cancer Research (EACR) and Associate member of American Association for Cancer Research (AACR). Presently, being a material chemist he is exploring the fabrication of novel nanomaterials for improved and personalized clinical nanomedicine. On the other hand, with his team he is developing the Indian Standard Reference Materials for Gold, Silver, SiO2 nanoparticles. For the doctoral degree, his major area of work consists of synthesis of monodispered and highly size specific synthesis of Gold and Graphene oxide based multifunctional nanomaterials. He is working on various aspects of the nanomaterial – bio interactions by exploring their toxicological, bioimaging, cellular internalization, pharmacokinetics studies. His ultimate objective is to explore and enhance the present knowledge

of clinical and personalized nanomedicine. As a research fellow, he is currently working on Graphene oxide-Chloroquine nanoconjuagte and studied its antiproliferative mechanism on A549 lung cancer cell lines through autophagy modulation and DNA damage, along with target application of this novel nanoconjugate.

PUBLICATIONS:

- Book chapter with title "Green synthesis of Ag NPs from spinacia oleracea leafs and their antimicrobial efficacy against human pathogenic microbes", in book Engineering Practices for Agricultural Production and Water Conservation, ISSN/ISBN no. 9781771884518, Apple Academic Press, Taylor and Francis group, New Jersey, USA.
- Research article with title "Graphene oxide-chloroquine nanoconjugate induce necroptosis cell death in A549 cells through autophagy modulation", Braham Dutt Arya, Sandeep mittal, Prachi Joshi Jaime R. Vick, Alok Panday, Surinder P. Singh, published in Nanomedicine – London, ISSN number: 1743-5889, DOI: 10.2217/nnm-2018-0086.
- Research article with title "Synthesis and application of PHT- TiO2 nanohybrid for amperometric glucose detection in undiluted human saliva sample", Sachin Kadian, Braham Dutt Arya, Sumit Kumar, S. N. Sharma, R. P. Chauhan, Ananya Srivastava , Pranjal Chandra , Surinder P. Singh published in Elecroanalysis-Wiley, ISSN number: 1521-4109, DOI: 10.1002/elan.201800207.
- Research article with title "Biophysical Characterization and Drug Delivery Potential of Exosomes from Human Wharton's Jelly-Derived Mesenchymal Stem Cells", Neha Chopra, Braham Dutt Arya, Namrata Jain, Poonam Yadav, Saima Wajid, Surinder P. Singh , Sangeeta Chaudhury, published in ACS Omega, ISSN no: 2470-1343, DOI: 10.1021/acsomega.9b01180
- Research article with title "GO-Chl induce DNA damage response in A549 lung cancer cells through p62/SQSTM1", Braham Dutt Arya, Sandeep mittal, Prachi Joshi, Jaime R. Vick, Alok Panday, Surinder P. Singh. (In process)

Ashish Avasthi

Ashish Avasthi is currently a Marie Sklodowska-curie early stage researcher at BIONAND in Malaga, Spain. Here, he is working on his PhD project titled magnetic nanoparticles as tumor theranostics with his supervisor Dr. Maria Luisa Garcia Martin. Prior to this research he was working as junior research fellow in Indian Institute of Technology (IIT) Ropar with Dr. Yashveer singh where he worked on early diagnosis and treatment of ductal carcinoma in-situ (DCIS) using drug loaded nanoparticles as well as liposomes. He got his bachelors and masters (dual degree) from centre for converging technologies (CCT) at University of Rajasthan, Jaipur, where he majored in nanotechnology and minored in biotechnology & bioinformatics. During his short career he has done several internships with leading research groups in India such as Prof. B. Jayaram and Prof. Sangeeta Kale. He published a few research articles as well as presented his research in multiple conferences.

PUBLICATIONS

- Ghosh, Sougata, et al. "Diosgenin functionalized iron oxide nanoparticles as novel nanomaterial against breast cancer." Journal of nanoscience and nanotechnology 15.12 (2015): 9464-9472.
- Pozo-Torres, Esther, et al. "Clickable Iron Oxide NPs Based on Catechol Derived Ligands: Synthesis and Characterization" Soft Matter 2020 submitted
- Avasthi, Ashish, et al. "Magnetic Nanoparticles as MRI Contrast Agents" Topics in current chemistry 2020 submitted.

Maryam Babaei

Maryam Babaei was born in 1980 in Iran. She received BSc in applied chemistry from Tehran University. She obtained her PhD degree in organic chemistry from Ferdowsi University of Mashhad in 2017 under the supervision of Prof. Mohammad Ramezani and Prof. Hossein Eshghi and the thesis title was "Organic Polycation Derivatization of Size-selected Silica-based Mineral Fibers as Transfection Agents".

During her PhD study, she focused on development of silica-based nanomaterials for gene and drug delivery to cancer cells and she published two articles in the journal of "Cancer Gene Therapy" and "Nanomedicine - Future Medicine" journal.

From 2017 up to now, she worked as a postdoctoral researcher in Pharmaceutical Research Center at the School of Pharmacy, Mashhad University of Medical Sciences, Iran. In the last two years she published 4 articles in high impact journals such as" Controlled release". Her research interest focuses on the development and synthesis of polymers, magnetic nanoparticles, quantum dots and silica nanoparticles as targeted nanoplatform for cancer diagnosis and therapy.

Tamás Bakos

I completed both my BSc and MSc studies at Budapest University of Technology and Economics bioengineer program applied biotechnology specialisation between 2013 and 2019. During my studies I gathered my professional experiences in the field of molecular biology at Hungarian Academy of Sciences Institute of Enzymology. After I finished my studies I started working for Autovaccine Ltd as a biologist. My further experiences include management and quality control. I'm currently a PhD student at Doctoral School of Basic and Translational Medicine Nanomedicine Research and Education Center at Semmelweis University. My research topic is „Pathophysiology of the complement system, with particular focus on its role in drug-induced allergic reactions". I design and perform both *in vivo* and *in vitro* experiments related to CARPA (Complement Activation Related Pseudo Allergy) using pig and rat models to expand the knowledge about the reaction to nanomedicines.

PUBLICATIONS:

Title: A unified and modular vector set for expression screening in bacteria, yeast, insect and mammalian cells optimized for small and medium laboratories.

Authors: Márk Somogyi, Tamás Szimler, Attila Baksa, Barbara Végh, Tamás Bakos, Katalin Paréj, Csaba Ádám, Áron Zsigmond, Márton Megyeri, Éva Gráczer, Péter Závodszky, István Hajdú, László Beinrohr

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I am a PhD Student in "Bioengineering and Robotics" at the university of Genoa. Since November 2017, I am carrying out the doctoral activities in the Laboratory of the Nanotechnology for Precision Medicine with Professor Paolo Decuzzi at the Istituto Italiano di Tecnologia. My research activities have focused on developing microfluidic vasculature on-a-chip in order to assess the extravascular and vascular transport behaviors of nanomedicines. Through these activities, I love developed my skills in fabrication techniques, including nano/micro-fabrication, soft lithography techniques, as well as cell cultures, microscopy imaging and post-process of experimental data.
I achieved my MSc Degree in Medical Biotechnology and Nanobiotechnology in December 2016 presenting an experimental thesis titled "New bio compost: growth of nanostructured protein film on graphene oxide". During my master program, I was involved in the synthesis and characterization of the new biocomposite material obtained by the sequential deposition of fibronectin onto graphene oxide nanosheets. This project was developed in collaboration with my M Sc. Supervisor Prof. Rosaria Rinaldi and my Tutor Alessandra Aloisi (Università del Salento).

PUBLICATIONS:

- Palomba R, Palange AL, Rizzuti IF, Ferreira M, Cervadoro A, Barbato MG, Canale C, Decuzzi P. Modulating Phagocytic Cell Sequestration by Tailoring Nanoconstruct Softness. ACS Nano. 2018 Feb 27;12(2):1433-1444. doi: 10.1021/acsnano.7b07797. Epub 2018 Jan 16. PubMed PMID: 29314819.

Tobias Alexander Bauer

PhD Student
After being trained as a chemical laboratory assistant at Sanofi-Aventis Deutschand GmbH, Tobias studied chemistry at Johannes Gutenberg University Mainz and University of Toronto. He received his B.Sc. after focusing on post-polymerization modification of polythiophene during his bachelor's thesis with Prof. Dr. R. Zentel in 2015. In 2017, he graduated his M.Sc. and was awarded the Fritz-Henkel-Prize for his master's thesis on core cross-linked polymeric micelles under the supervision of Dr. M. Barz. His current research as a doctoral candidate with Dr. M. Barz focuses on the design of stimuli-responsive core cross-linked micelles for mono- and combination therapy. For his doctural studies, Tobias acknowledges the HaVo-Stiftung for funding the Max-Planck-Graduate Center for complementary training and support.

Salime Bazban-Shotorbani

Salime Bazban-Shotorbani is currently in the last year of her PhD studies at Department of Health Technology, Denmark Technical University, Lyngby, Denmark. She is also a visiting PhD student at Department of Chemistry, Imperial College London, London, UK. Salime is a member of BioNanoMat group, under supervision of Dr. Nazila Kamaly. She is a biomedical engineer and her PhD involves the development of static and dynamic cell-based screening platforms that allows the study of a variety of nanoparticles across an inflamed endothelium. Using a library of targeted nanoparticles engineered with different physicochemical properties, the exact nature of their interactions with endothelial cells under static and flow conditions have been investigated. These mechanistic insights will aid in the design and development of optimal nanotherapeutics aimed at chronic diseases involving inflamed endothelia such as atherosclerosis.
Salime holds two BSc degrees in Biomedical Engineering and Polymer Engineering from Amirkabir University of Technology, and a MSc degree in Biomaterial Engineering from Amirkabir University of Technology, Tehran, Iran. Her BSc studies were focused on the theoretical modelings and applications of polymers in biomedical engineering. In her master thesis, she designed and developed smart nanogels for stimuli-responsive drug delivery systems.

Marilena Bohley

The presenting author studied pharmacy at the Julius-Maximilians-University Wuerzburg, Germany from 2011-2015. In 2017, after practical training in pharmacy and industry, she joined the group of Achim Goepferich, Department of Pharmaceutical Technology, University Regensburg as a Ph.D. student.

LIST OF PUBLICATIONS

- Bohley, Marilena; Birch, Emily; Baumann, Felix; Dillinger, Andrea; Tamm, Ernst; Goepferich, Achim: Design of dye and superparamagnetic iron oxide nanoparticle loaded lipid nanocapsules with dual detectability *in vitro* and *in vivo*. In: International Journal of Pharmaceutics 2020,585, 119433
- Bohley, Marilena; Haunberger, Alexandra; Goepferich, Achim: Intracellular availability of poorly soluble drugs from lipid nanocapsules. In: European Journal of Pharmaceutics and Biopharmaceutics 2019,139, 23-32
- Bohley, Marilena; Goepferich, Achim (2019): Intracellular availability of poorly soluble drugs from lipid nanocapsules. Controlled Release Society German Chapter Meeting, Leipzig, Germany, 2019.
- Bohley, Marilena; Goepferich, Achim (2019): RGD-peptide grafted Lipid Nanocapsules (LNC) for drug delivery to the posterior eye. Controlled Release Society Annual Meeting & Exposition, Valencia, Spain, 2019.

Maximilian Brückner

Ph.D. candidate in the group of Prof. Katharina Landfester - Department of Physical Chemistry of Polymers at the Max-Planck-Institute for Polymer Research in Mainz. From 2012 to 2016, I studied Biotechnology at the University of Applied Sciences in Darmstadt. The main focus of the study programme was on basics in engineering science as well as subject-specific basics in genetic engineering, cell cultivation, and enzyme technology. For my Bachelor thesis at the University Medical Center in Mainz, I investigated the effect of glaucoma-relevant antibodies on the expression of GLAST and the activity of glutamine synthetase in primary Müller cells and retinal cultures. For my Master, I studied Physical Cell Biology at the Goethe University in Frankfurt. This international study programme is based on the modern concepts and methods of cellular and physiological biology in research and development. In 2018, I wrote my Master thesis at the Max-Planck-Insitute for polymer research in the group of Prof. Mailänder. During that time I functionalized magnetic nanocarriers with modified monoclonal antibodies under two different conjugation strategies to compare the targeting efficiency of the conjugates *in vitro* on dendritic cells. In December 2018, I fully joined the Landfester group for my Ph.D. which is subject to bioconjugation of nanocarriers with antibodies and derivatives to create dual- or multi-functional nanocarriers. Furthermore, I joined the Collaborative Research Centre SFB 1066 "Nanodimensional polymeric therapeutics for tumor therapy" where I am working on the subject: attachment of antibodies on the artificial protein corona.

RECENT PUBLICATION

- Monitoring of Cell layer Integrity with a Current-Driven Organic Electrochemical Transistor (third autor)
- How washing media influences the composition of the protein corona on nanocarriers formed in blood plasma and serum (shared first autor, almost submitted)
- The conjugation strategy affects antibody orientation and targeting properties of nanocarriers (shared first autor, almost submited)

Alexandra Bukchin

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I was born on 24th March, 1988 in Moscow, Russia. At the age of 7 my family and I made the Aliya and came to Haifa, Israel where I live until this day. As all 18 year-olds in Israel, right after school, we are called to serve in the Israel defense forces. Thus on February 2007 I have started my military service in the Israeli Navy in Rosh Ha'Nikra, which is on the Lebanon border. I was in charge upon 6 more girls per shift and together we closely monitored the sea border day and night.
At 2009, after the military service I have started studying towards my first double degree in material engineering and chemistry at the Department of Materials Science and Engineering at the Technion – Israel Institute of Technology. During my studies I have worked at Israel Schechter's analytical chemistry lab at the Department of Chemistry.
After that I have pursued my M.Sc in the Department of Materials Science and Engineering under the supervision of Prof. Alejandro Sosnik. Finally, I am now at my last year of my PhD at Alejandro Sosnik's lab. My current thesis is about polymeric nanocarriers modified with shuttle peptides for drug targeting to the central nervous system. This is a project we collaborate with Angel Carcaboso, also my co-supervisor in the thesis. Angel works at the pediatric Hospital Sant Joan de Deu in Barcelona, Spain. I have traveled there number of times to continue out fruitful collaboration.
As part of my PhD work in the faculty I am a teacher assistant for solid mechanics and introduction to materials science in our faculty as well as partial differential equations and calculus in the Department of Mathematics.
I was a part of the organizing committee in the 3rd International Conference on Biological and Biomimetic Adhesivs in Israel.
I was honored to receive The Miriam and Aaron Gutwirth memorial fellowship for excellent achievements in research and study for 2018-2019 academic year. As well as the Rozen prize for excellency in study, research and teaching for 2018.

PUBLICATIONS:

- A. Bukchin, N. Kuplennik, Á.M. Carcaboso and A. Sosnik," Effect of growing glycosylation extents on the self-assembly and active targeting*in vitro* of branched poly(ethylene oxide)-poly(propylene oxide) blockcopolymers ", Applied Materials Today 11 (2018) 57-69.
- A. Bukchin, G. Pascual-Pasto, M. Cuadrado-Vilanova, H. Castillo-Ecija, C. Monterrubio, N.G. Olaciregui, M. Vila-Ubach, L. Ordeix, J. Mora, Á.M. Carcaboso and A. Sosnik "Glucosylated Nanomicelles Target Glucose-Avid Pediatric Patient-Derived Sarcomas", Journal of Controlled Release 276 (2018) 59-71.

Loïc Burr

Loïc Burr, PhD, is Research and Development Engineer at CSEM since 2017 and is a specialist in nanomaterials fabrication, detection and characterization. He graduated with an Engineer diploma from the European Engineering school for Chemistry Polymer and Materials in 2012 and graduated with a Master diploma from the University of Strasbourg with Material Sciences specialization in 2012. He then performed his PhD studies at University of Darmstadt and GSI Helmholtz Center for Heavy Ion Research GmbH in Germany, on the topic of "Ion-track technology based synthesis and characterization of gold and gold alloys nanowires and nanocones".
His current focus is the development of new method for nanomaterials characterization as well as the development of automated risk assessment and point-of-care devices. He is participating in several European projects such as ACEnano (risk assessment of nanomaterials), HEDIMED (exposome influence on immune mediated diseases) and FoodSmartPhone (portable risk assessment in food matrices).

KEY PUBLICATIONS:

- Burr, L.; Schubert, I.; Sigle, W.; Trautmann, C.; Toimil-Molares, M. E. Surface Enrichment in Au–Ag Alloy Nanowires and Investigation of the Dealloying Process. J. Phys. Chem. C 2015, 119 (36), 20949– 20956, DOI: 10.1021/acs.jpcc.5b05596.

Fanny Caputo

Dr. Fanny Caputo (f), PhD, is working as Research Scientist at SINTEF since November 2019. She has an undergraduate education in Materials Science and a PhD in Materials for Health Environment and Energy (2015). In 2015 she joined as Research Scientist CEA-Grenoble (France) where for 4 years she led the physical-chemical character-

ization of Nanopharmaceuticals, for the European Nanomedicine Characterisation Laboratory (EUNCL H2020). Since June 2019 she is the chair of the "Safety and Characterisation" working group of the European Technology Platform of Nanomedicine (ETPN), and she is also the contact point for EUNCL. She had been participated with scientific and management roles to multiple H2020 projects focused on the pre-clinical clinical characterisation of nanomedicine and on the development of a nanomedicine regulatory framework (e.g. H2020 EUNCL, EXPERT, REFINE). She is also currently involved in the standardisation of physical-chemical methods of nanoparticle systems, being a member of the ASTM E56 committee.

RELEVANT PUBLICATIONS

- Hon S. Leong, .., Caputo F., .., Pastore C., On the issue of transparency and reproducibility in nanomedicine, Nature Nanotechnology, 14, 629–635 (2019).
- Gioria S., Caputo F., Mehn D. Nano-enabled medicinal products: time for an international advanced community? Nanomedicine (Lond), 14(14):1787-1790 (2019).
- Caputo F., Clogston J., Calzolai L., Rösslein M., Prina-Mello A., Measuring particle size distribution of nanoparticle enabled medicinal products, the joint view of EUNCL and NCI-NCL. A step by step approach combining orthogonal measurements with increasing complexity. Journal of Controlled Release, 299, 31-43 (2019).
- Caputo F., Arnould A., Bacia M., Ling W.L., Rustique E., Texier I., Prina Mello A., Couffin A-C., Measuring Particle Size Distribution by Asymmetric Flow Field Flow Fractionation: A Powerful Method for the Preclinical Characterization of Lipid-Based Nanoparticles, Mol. Pharmaceutics, 16 (2), 756–767 (2019).
- Gioria S., Caputo F., Urbán P., Maguire C.M., Bremer-Hoffmann S., Prina-Mello A., Calzolai L., Mehn D., Are existing standard methods suitable for the evaluation of nanomedicines: some case studies. Nanomedicine (Lond). 13, 539-554 (2018).

Estela O. Carvalho

Estela O. Carvalho is a PhD student in Materials Engineering at the University of Minho, Portugal, affiliated to the Center of Physics of the University of Minho and Porto. She has a degree in Genetics and Biotechnology (2015) at UTAD, Portugal, and a master's degree in Biophysics and Bionanosystems at the University of Minho (2018). As part of her master's degree, she joined the Department and Center of Physics at UM in order to develop research in the area of piezoelectric materials for tissue engineering applications. During this time she also performed a research stay at the Centre for Biomaterials and Tissue Engineering (CBIT), Valencia, Spain This work resulted in a scientific contribution on "Human mesenchymal stem cells growth and osteogenic differentiation on piezoelectric poly(vinylidene fluoride) microsphere substrates" – 10.3390/ijms18112391).

After successful finish of her master degree, she worked as researcher in an EuroNanoMed funded project (ENMed/0049/2016) entitled: "Multiplex point-of-care device for lung disease biomarkers in sputum" – "LungCheck"- aiming to develop a bioanalytical device based on sputum sampling and rapid multiplex biomarker analysis, for the early diagnosis of lung cancer. The results on this work were presented at the EuroNanoMed III Training Workshop & Review Seminar for funded projects & NSC5 Meeting in Bratislava, Slovakia, where she won the prize of Best Poster award.

In her PhD work, the research interest is focused in the use of smart materials with controlled structures, morphologies and dimensionalities, for tissue engineering and biomedical applications, with published works "Tailoring Bacteria Response by Piezoelectric Stimulation" – 10.1021/acsami.9b05013, and "Tailoring electroactive poly(vinylidene fluoride-co-trifluoroethylene) microspheres by a nanoprecipitation method" – 10.1016/j.matlet.2019.127018).

Carole Champanhac

Postdoctoral researcher

Carole did her Bachelor's degree at the University of Bordeaux, France until 2011 with a major in Chemistry. She then moved to the University of Florida, USA. She did her PhD under the supervision of Prof. Dr Weihong Tan in the field of aptamer and cellular targeting. She was awarded her doctorate in August 2011. She is currently working as a postdoctoral researcher at the Max-Planck Institute for Polymer Research in the group of Prof. Dr. Volker Mailander. Her current research focuses on the cellular uptake of nanocarriers.

- Champanhac, C; Simon, J; Mailänder, V; Landfester, K. Timing of Heparin Addition to the Biomolecular Corona Influences the Cellular Uptake of Nanocarriers. Biomacromolecules 2019, 20, 10, 3724-3732.

Marco Cordani

I obtained my master's degree in molecular biology, with the maximum score, at University of Parma, Italy. In 2011 I was awarded with an undergraduate fellowship for a short stay (2 months) at Spanish National Center for Cancer Research (CNIO), Madrid. There, I have been trained in molecular biology and biochemistry in the laboratory of Structural Biology directed by Dr. Daniel Lietha. Between 2014 to 2016 (3 years), I was enrolled in the doctoral school of Molecular Biomedicine, at University of Verona, Italy. During these years, I elucidate the molecular mechanisms by which oncogenic mutant p53 proteins regulate signaling pathways involved in chemoresistance and cancer progression, with a specific focus on autophagy and ROS regulation (Fiorini et al, Biochim Biophys Acta. 2015 Jan;1853(1):89-100; Cordani et al. Mol Oncol. 2016 Aug;10(7):1008-29; Cordani et al, Br J Cancer. 2018 Oct;119(8):994-1008). During my doctoral period I had the opportunity to undergo training and perform collaborative work at Spanish National Center for Cardiovascular Research, Madrid (CNIC) for a total of 21 months, where I acquiring a broad background in cell biology and expertise in multiple state-of-the-art techniques related to life science. At CNIC, in the laboratory directed by Prof. Miguel Angel Del Pozo, I worked in a project aimed to understand how cancer cells respond to mechanical stimulus using novel High Content Screening and state-of-the-art imaging techniques (Bravo-Cordero JJ*, Cordani M* et al. J Cell Sci. 2016 Apr 15;129(8):1734-49). On May 2017 I defended my PhD thesis with the maximum qualification.

In 2017, I obtained my first postdoctoral fellowship to work in the laboratory of translational oncology directed by Prof. Gema Moreno-Bueno, at Autonomous University of Madrid (UAM), Spain. During this research stay (12 months), I worked in a project titled: in a project titled: "Targeting Gasdermin-B to overcome chemoresistance in Her2-positive cancers".

Since April 2018 I am postdoctoral researcher at IMDEA Nanociencia, Madrid, where I am working in the laboratory of nanobiotechnology directed by Prof. Álvaro Somoza on the development of CRISPR-based genome editing approaches and novel nanomaterials for drug delivery for cancer therapy.

Although the early stage of my career (< 3 years from PhD), I published more than 20 articles in peer-reviewed journals, 11 in Quartil-1 and 2 in Decil-1 (JCR), with a H-index of 11 (Google Scholar) and > 390 citations totals in only 5 years (2015-2019). During my career I has been granted with 8 highly competitive fellowships and I participated in 4 national/local projects founded thorough competitive calls. I was appointed as Guest Editor for several recognized

journals, including Frontiers in Pharmacology, Nanomaterials and Oxidative Medicine and Cellular Longevity. I am holding peer-reviewer duty for many journals, including ACS Applied Nano Materials, Cancers and Cell Death & Disease. Moreover, I was involved in the supervision of two talented master students.

RECENTS PUBLICATIONS:

- Rigotti T, Asenjo J, Martín-Somer A, Milán Rois P, Cordani M, Díaz-Tendero S, Somoza A, Fraile A, Alemán J. Asymmetric [3+2] Cycloaddition Reactions of Azomethine Ylides to 8-Alkenyl-BODIPYs: Synthesis of New Biological Sensors. Adv. Synth. Catal. 10.1002/adsc.201901465
- Cordani M et al. Mutant p53 blocks SESN1/AMPK/PGC-1α/UCP2 axis increasing mitochondrial O2-· production in cancer cells. British Journal of Cancer. 119(8):994-1008.
- Cordani M, et al. Mutant p53 proteins counteract autophagic mechanism sensitizing cancer cells to mTOR inhibition. Molecular Oncology, 10(7):1008-29
- Bravo-Cordero JJ*, Cordani M*, et al. A novel High Content Analysis tool reveals Rab8-driven actin and FA reorganization through RhoGTPases and calpain/MT1. J Cell Science, 129(8):1734-49
- Fiorini C, Cordani M, et al. Mutant p53 stimulates chemoresistance of pancreatic adenocarcinoma cells to gemcitabine. Biochimica et Biophysica Acta Mol Cell Research, 1853(1):89-100

Noemi Stefania Csaba

PhD

Associate Professor at the Dept. of Pharmacology, Pharmacy and Pharmaceutical Technology of the University of Santiago de Compostela and principal investigator of the Center for Research in Molecular Medicine and Chronic Diseases. Author of > 40 Q1 original and review articles (H index 25), several book chapters and one book as editor. Co-inventor of 6 patent families, two licensed and all extended and published as PCT.

Since 2017 leader of the group "Natural Polymers and Biomimetics", with main research interest in the formulation of drug-loaded nanocarriers for therapeutic applications and antigen-loaded nanosystems for vaccination and antigen-specific immunotherapy, with delivery strategies specifically targeted to mucosal surfaces.

Christian Czysch

PhD student

Christian Czysch studied biomedical chemistry at the Johannes Gutenberg University, Mainz (Germany), and received his master's degree in 2018. During his studies he worked at the laboratories of Prof. Rudolf Zentel and Prof. Holger Frey, gaining first insights in polymer chemistry in the context of bioapplication. For his PhD studies he joined the group of Dr. Lutz Nuhn at the Max Planck Institute for Polymer Research working on "Functional Polycarbonates for Drug Delivery". Christian is member and student speaker of the Integrated Research Training Group within the Collaborative Research Center 1066, Mainz (CRC 1066).

RECENT PUBLICATION:

Verkoyen, P., Johann, T., Blankenburg, J., Czysch, C., & Frey, H. (2018). Polymerization of long chain alkyl glycidyl ethers: a platform for micellar gels with tailor-made melting points. Polymer Chemistry, 9(44).

Richard da Costa Marques

Ph.D. Student

I am a doctoral student in the research group of Prof. Dr. Volker Mailänder and the department of Prof. Dr. Katharina Landfester at the Max Planck Institute of Polymer Research. My scientific studies focus on the intracellular trafficking of nanocarriers and LC-MS proteomics to study protein-nanocapsule interactions.

I studied biochemistry at the Goethe University Frankfurt from 2012 to 2016 with an emphasis on membrane proteins and biophysical chemistry. I wrote my bachelor's thesis at the Paul Ehrlich Institute in Langen about the cellular uptake of liposomal formulations containing mycobacterial lipid antigens.

After obtaining my bachelor's degree, I completed a master's program in biomedicine from 2016 to 2019 at the Johannes Gutenberg University Mainz. The program focused on immunology and molecular medicine. I carried out my master's thesis at the Max Planck Institute of Polymer Research, revolving around the interactions of bone-implant materials and angiogenic platelet proteins. At the end of my master's program, I underwent a scholarship-funded, three-month internship in Tokyo, Japan at Dr. Kei Yura's research group at the Ochanomizu University. Here, I learned and performed computational biology methods to study protein-DNA interactions. In April 2019, I fully joined the department of physical chemistry of polymers at the Max Planck Institute of Polymer Research as a Ph.D. student under the supervision of Prof. Dr. Katharina Landfester and Prof. Dr. Volker Mailänder, as my group leader. The group's research focuses on nanocarriers for biomedical therapy and protein-nanocarrier interactions. Furthermore, I joined the Collaborative Research Center 1066 and take part in the integrated research training group in which we work to provide nanoscale solutions to immunotherapeutics and drug delivery.

Ali Dehshahri

Dr. Ali Dehshahri is currently associate professor of pharmaceutical biotechnology at Shiraz University of Medical Science, Iran. He obtained his PhD at Mashhad University of Medical Sciences, Iran. In his thesis, he investigated the role of polymer amine content on its efficiency for gene delivery. As a distinguished Ph.D.student, he was awarded a short-term research grant from the Iranian Ministry of Health to pursue his investigation at LMU, Munich, Germany under the supervision of Prof. Ernst Wagner on polymeric nanoparticles for siRNA delivery. In 2014, Dehshahri accepted an Associate Professor position at Shiraz University of Medical Sciences, where he has been since that time.

Valentina Di Francesco

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I am a PhD Student in "Bioengineering and Robotics" at the university of Genoa. I am carrying out the doctoral activities at the

laboratory of the Nanotechnology for Precision Medicine of Professor Paolo Decuzzi at Istituto Italiano di Tecnologia, since November 2017. My research activities have focused on the design, preparation, physicochemical characterization, *in vitro* and *in vivo* evaluation of Supramolecular Nanotherapeutics for systemic delivery of bioactive compounds for cardiovascular disease, in particular Atherosclerosis. Methodologically speaking, I learnt new fabrication techniques for particles preparation with a priori defined size and shape combinations based on specific pathology and administration route.
I achieved my MSc Degree in Chemistry and Pharmacology Technology in at the "G. d'Annunzio" University of Chieti – Pescara in March 2016, with a thesis on "Therapeutic non phospholipid vesicles for neuronal anticancer treatment". During my master, I was involved in the design, synthesis and characterization of different supramolecular vesicular aggregates (SVAs) using hydrophilic surfactants and lipids. Chemotherapeutic, showing different physical-chemical properties, i.e. temozolomide (TMZ) was selected as drug candidates. TMZ-loaded innovative niosomes were design as potential nanomedicine for the treatment of brain cancer, glioblastoma multiforme, *in vitro*. This project was developed in collaboration with my M Sc. Supervisor Prof. Luisa Di Marzio (University of Chieti-Pescara "G.d'Annunzio").

Chengchen Duan

D.Phil. Student
Nuffield department of Women's and Reproductive Health, Oxford University John Radcliffe Hospital, Headington, Oxford
Chengchen Duan obtained his Msc degree in Biotechnology Research Extensive degree from University of Queensland, Australia in 2018 and BS degree in Biotechnology from Jinan University, China in 2016. He is now a second-year D.Phil. student in University of Oxford. His D.Phil. study is fully funded by University of Oxford-China Scholarship Council Scholarships covering 100% of his tuition and living expenses. He has been working with Dr Helen Townley in the Nuffield Department of Women's and Reproductive Health, Medical Science Division, University of Oxford since 2018. His current research focuses on developing a unique dual functional theranostic nanoprobe which could kill the cancer cells efficiently and real-time monitor the therapeutic effect non-invasively.

PUBLICATIONS:

- Duan, C., Liang, L., Li, L., Zhang, R. and Xu, Z.P., 2018. Recent progress in upconversion luminescence nanomaterials for biomedical applications. Journal of Materials Chemistry B, 6(2), pp.192-209.
- White, B.D., Duan, C. and Townley, H.E., 2019. Nanoparticle Activation Methods in Cancer Treatment. Biomolecules, 9(5), p.202. [Co-First Author]
- Liu, J., Duan, C., Zhang, W., Ta, H., Yuan, J., Xu, Z., Zhang, R., 2019. Responsive Nanosensor for Ratiometric Luminescence Detection of Hydrogen Sulfide in Inflammatory Cancer Cells. Analytica Chimica Acta. [Co-First Author] [In Review]
- Du, Z., Song, B., Zhang, W., Duan, C., Wang, Y. L., Liu, C., ... & Yuan, J. (2018). Quantitative Monitoring and Visualizing of Hydrogen Sulfide *in vivo* by A Ruthenium (II) Complex-based Luminescence Probe with New Recognition Moiety. Angewandte Chemie (International ed. in English), 57(15), 3999-4004.
- Chen, W., Zuo, H., Li, B., Duan, C., Rolfe, B., Zhang, B., Mahony, T.J. and Xu, Z.P., 2018. Clay Nanoparticles Elicit Long-Term Immune Responses by Forming Biodegradable Depots for Sustained Antigen Stimulation. Small, 14(19), p.1704465.

Zeinab Farhadi Sabet

Ph.D. student

Zeinab Farhadisabet is a PhD student at National Center for Nanoscience and Technology.
She graduated from Shahid Beheshti Universtiy with bachelor's degree (Iran 2015), and continued her postgraduated studies at National Center for Nanosceince and Technology at Chinese Academy of Science (China, 2015-2017), after that she accepted in PhD qualification exam at National center for Nanoscience and Technology and won Cas-Twas scholarship as a PhD student (china, 2018-now).
Her main interest are about self-assembly of short peptide toward cancer therapy, conjugation of small molecule, inhibitor or cancer cell drug to peptide, targeting cancer cell and pericellular or intracellular self-assembly.
She already work on hypoxia targeting of cancer cell by inhibiting one of the hypoxia enzyme.

RECENT PUBLICATION

- [Co-first author] New Power of Self-assembling Carbonic Anhydrase Inhibitor: Short Peptide Constructed Nanofibers Inspire Novel Hypoxic Cancer Therapy, 2019 science advances. [IF: 12.8]
- [Co-author] Corona of Thorns: The Surface Chemistry-Mediated Protein Corona Perturbs the Recognition and Immune Response of Macrophage, 2019 ACS Applied Materials & Interfaces [IF: 8.45]
- [Co-author] Dopamine Delivery via pH-Sensitive Nanoparticles for Tumor Blood Vessel Normalization and An Improved Effect of Cancer Chemo-therapeutic Drugs, 2019 Advanced Healthcare Materials. [IF 6.27]

Farid N Faruqu

Farid graduated from the University of Cambridge with both a BA and MSci in Biochemistry in 2014. During his MSci studies, he looked into the involvement of the Rho-family of small G-proteins in tumourigenesis and metastasis of cancer. Upon graduation, he did an internship with Cancer Research Malaysia, a non-profit research institute in Malaysia. There, he was involved in the screening of locally sourced natural compounds as potential cancer therapeutics to target cytidine deaminases and synthethic lethality pathways. He was awarded a scholarship by the Malaysian Government to pursue his PhD at the Institute of Pharmaceutical Sciences, King's College London in 2015. He is now working on developing exosomes as delivery systems for regenerative therapy in liver diseases.

Marie-Luise Frey

PhD student
Marie started her chemical career in 2011, studying Biomedical Chemistry at Johannes Gutenberg University in Mainz. After finishing her bachelor thesis in the group of Prof. Dr. Siegfried Waldvogel, she obtained her Bachelor degree in 2014. She continued her studies in Biomedical Chemistry and spent a semester abroad

at the Amsterdam Institute for Molecules, Medicine and Systems (AIMMS) at Vrije Universiteit Amsterdam under supervision of Dr. Maikel Wijtmans where she gathered more experience in medicinal chemistry. She did her Master thesis in the group of Jun.-Prof. Dr. Peter Wich at the Institute for Pharmacy and Biochemistry of Johannes Gutenberg University Mainz, working on chemical modifications of dextran for novel nanoparticulate materials, which she finished in 2017. After a short stay as research assistant in the group of Jun.-Prof. Dr. Ute Hellmich in the department of biochemistry, she started her PhD in the group of Prof. Dr. Katharina Landfester at the Max Planck Institute for Polymer Research in Mainz. Currently she is working on the surface modification of hydroxylethyl starch- and protein-based nanocapsules for targeted drug delivery. As a part of the interdisciplinary research training group of the Collaborative Research Center "Nanodimensional polymer therapeutics for tumor therapy" (SFB 1066) she is working closely together with collaborators of the department of dermatology of the University Medical Center in Mainz.

RECENT PUBLICATION

Guindani, C.; Frey, M.-L.; Simon, J.; Koynov, K.; Schultze, J.; Ferreira, S. R. S.; Araújo, P. H. H.; de Oliveira, D.; Wurm, F. R.; Mailänder, V.; Landfester, K.: Covalently Binding of Bovine Serum Albumin to Unsaturated Poly(Globalide-Co-ε-Caprolactone) Nanoparticles by Thiol-Ene Reactions. Macromolecular Bioscience (2019)

Meiyu Gai

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T: +49 1774450501
Current position: Postdoctoral researcher
Affiliation: Max Planck Institute for Polymer Research
Personal website: http://www.mpip-mainz.mpg.de/5525527/MG
https://www.researchgate.net/profile/Meiyu_Gai

Dr. Meiyu Gai studied Biomedical Materials as a PhD student at Queen Mary University of London (London, United Kingdom) in Sep. 2014, and the PhD degree was awarded in Sep. 2018. Her PhD thesis was titled "Design and Fabrication of Micro/Nano-chamber Arrays for Drug Encapsulation and Controlled Release" and was realized in the group of Professor Gleb B. Sukhorukov. Following her PhD, she joined Professor Katharina Landfester's research group at the Max Planck Institute for Polymer Research (Mainz, Germany) as postdoctoral researcher in Sep. 2018. Meiyu is currently working in the EU project "Ves4Us", which is focused on developing a radically new platform for the efficient production and functionalization of extracellular vesicles (EVs) to enable their exploitation as tailor-made products in the fields of nanomedicine. https://ves4us.eu/

FEATURED RESEARCH:

- Gai, M. et al. A bio-orthogonal functionalization strategy for site-specific coupling of antibodies on vesicle surfaces after self-assembly. Polym. Chem. 527–540 (2019). doi:10.1039/c9py01136f
- Gai, M., Frueh, J., Kudryavtseva, V. L., Yashchenok, A. M. & Sukhorukov, G. B. Polylactic Acid Sealed Polyelectrolyte Multilayer Microchambers for Entrapment of Salts and Small Hydrophilic Molecules Precipitates. ACS Appl. Mater. Interfaces acsami.7b03451 (2017). doi:10.1021/acsami.7b03451
- Gai, M. et al. Patterned Microstructure Fabrication: Polyelectrolyte Complexes vs Polyelectrolyte Multilayers. Sci. Rep. 6, 1–6 (2016).
- Gai, M. et al. Polylactic acid nano- and microchamber arrays for encapsulation of small hydrophilic molecules featuring drug release via high intensity focused ultrasound. Nanoscale 9, (2017).
- Gai, M. et al. In-situ NIR-laser mediated bioactive substance delivery to single cell for EGFP expression based on biocompatible microchamber-arrays. J. Control. Release asap, 84–92 (2018).

Eduard Gatin

Lecturer, Ph.D
University of Bucharest, Faculty of Physics, Department Science Materials, P.O.Box; MG 11, Bucharest-Magurele, Romania; University of Medicine 'Carol Davila', Faculty of Medicine, Biophysics Department, Blv. Eroii Sanitari 8, Sect.5, Bucharest, Romania.

Me Eduard Gatin, Physicist Education, research in polymer and materials science, dental materials University of Bucharest, Faculty of Physics (1994 – present, Assistant / Lecturer) Ph. D Biology & Physiology. From 2010 – present, Lecturer – Biophyscs Department University of Medicine "Carol Davila", Faculty of Medicine. Area of interest: polymer membranes for blood filtration. I continued with research in material science - polymers, advanced nano materials, ceramics, metal alloys, corrosion, dental materials and tissue regeneration. Laboratory Research activity: Materials structure, physical / chemical properties, dental enamel, bacteria activity, polymer resin composites, dental ceramics, metal alloys and corrosion studies. Techniques skills: RAMAN spectroscopy (improved by SERS), SEM, EDX. In 2013 I succeded to propose a method for quality evaluation of dental enamel by Raman method, to be applied " *in vivo*". In 2015, the patent registration certificate was issued. It was started a study " Introducing RAMAN technique to Periodontology" (*in vivo* application). It is the present target, cooperation with Semmelweis University Budapest, Faculty of Dentistry.

PUBLICATIONS:

- E. Gatin et al, 'Evaluation of the quality of local butters: A new approach based on Raman spectroscopy and supported by classical pycnometer method', Food Science and Technology International (2019) 1082013219871118 in press;
- E. Gatin et al, 'Raman Spectroscopy: Application in Periodontal and Oral Regenerative Surgery for Bone Evaluation', IRBM 40 (5) 2019;
- E. Gatin et al, 'Dental enamel quality and black tooth stain: A new approach and explanation by using Raman and AFM techniques', Part Sci Tech 33 (4) 2015.

Lukas Gerken

After obtaining his bachelor degrees in Physics from the University of Cologne and Sports and Performance at the German Sports University Cologne, Lukas moved to Vienna to pursue his master degree in Biomedical Engineering at the Vienna University of Technology. During this time, he connected, via an exchange, to ETH Zürich and the Swiss Federal Laboratories for Materials Science and Technology (Empa) in St. Gallen, where he conducted his master thesis in the Lab of Prof. I.K. Herrmann. Since 2018 he is a PhD student in the Nanoparticle Systems Engineering Lab of Prof. Herrmann at ETH Zürich, where he studies the synthesis and application of nanoparticles in the field of radiotherapy.

PUBLICATIONS:

- Gerken, L. R. H., Keevend, K., Zhang, Y., Starsich, F. H. L., Eberhardt, C., Panzarasa, G., Matter, M. T., Wichser, A., Boss, A., Neels, A., & Herrmann, I. K. (2019). Lanthanide-Doped Hafnia Nanoparticles for Multimodal Theranostics: Tailoring the Physicochemical Properties and Interactions with Biological Entities. ACS Applied Materials & Interfaces, 11(1), 437–448. https://doi.org/10.1021/acsami.8b20334
- Anthis, A. H. C., Matter, M. T., Keevend, K., Gerken, L. R. H.,

Scheibler, S., Doswald, S., Gogos, A., & Herrmann, I. K. (2019). Tailoring the Colloidal Stability, Magnetic Separability, and Cytocompatibility of High-Capacity Magnetic Anion Exchangers. ACS Applied Materials & Interfaces, 11(51), 48341–48351. https://doi.org/10.1021/acsami.9b16619

- Keevend, K., Puust, L., Kurvits, K., Gerken, L. R. H., Starsich, F. H. L., Li, J.-H., Matter, M. T., Spyrogianni, A., Sotiriou, G. A., Stiefel, M., & Herrmann, I. K. (2019). Ultrabright and Stable Luminescent Labels for Correlative Cathodoluminescence Electron Microscopy Bioimaging. Nano Letters, 19(9), 6013–6018. https://doi.org/10.1021/acs.nanolett.9b01819

Michał Gorzkiewicz

Michał Gorzkiewicz received his M.Sc. title in biotechnology from the Technical University of Lodz (Poland) in 2012. After graduation, he conducted research at the Institute of Medical Biology of Polish Academy of Sciences (Lodz, Poland) and the University Paris-Sud INSERM UMR-S757 (Orsay, France). Currently he is a PhD candidate and an employee of the University of Lodz at the Department of General Biophysics in the team of prof. Barbara Klajnert-Maculewicz. He has published 17 articles and 2 book chapters. He is a two-time winner of Minister of Science and Higher Education Scholarship for outstanding achievements for PhD students. In 2019, he has been recognized as one of the hundred most talented young Polish scientists, being granted the prestigious START scholarship of the Foundation for Polish Science. Michał Gorzkiewicz conducts research on the edge of biophysics, molecular biology, chemistry and nanotechnology, regarding the immunomodulatory properties of nanoparticles and the possibility of application of these compounds as carriers of genetic material, anticancer and antiinflammatory drugs.

RECENT PUBLICATIONS:

- Gorzkiewicz M., Klajnert-Maculewicz B. (2017), Dendrimers as nanocarriers for nucleoside analogues, European Journal of Pharmaceutics and Biopharmaceutics, 114:43-56. 5-year IF = 5.11
- Gorzkiewicz M., Buczkowski A., Appelhans D., Voit B., Pułaski Ł., Pałecz B., Klajnert-Maculewicz B. (2018), Poly(propyleneimine) glycodendrimers non-covalently bind ATP in a pH-and salt-dependent manner-model studies for adenosine analogue drug delivery, International Journal of Pharmaceutics, 544(1):83-90. 5-year IF = 4.42
- Gorzkiewicz M., Sztandera K., Jatczak-Pawlik I., Zinke R., Appelhans D., Klajnert-Maculewicz B., Pulaski Ł. (2018). Terminal sugar moiety determines immunomodulatory properties of poly(propyleneimine) glycodendrimers, Biomacromolecules, 19(5):1562-1572. 5-year IF = 5.83
- Gorzkiewicz M., Jatczak-Pawlik I., Studzian M., Pułaski Ł., Appelhans D., Voit B., Klajnert-Maculewicz B. (2018), Glycodendrimer nanocarriers for direct delivery of fludarabine triphosphate to leukemic cells: improved pharmacokinetics and pharmacodynamics of fludarabine, Biomacromolecules, 19(2):531-543. 5-year IF = 5.83
- Gorzkiewicz M., Deriu M.A., Studzian M., Janaszewska A., Grasso G., Pułaski Ł., Appelhans D., Danani A., Klajnert-Maculewicz B. (2019), Fludarabine-specific molecular interactions with maltose-modified poly(propyleneimine) dendrimer enable effective cell entry of the active drug form: comparison with clofarabine, Biomacromolecules, 20(3):1429-1442. 5-year IF = 5.83

Shanshan Guo

Shanshan Guo received her bachelor degree in Bioinformatics in 2012 from the Huazhong University of Science and Technology in China. She got Ph.D. in Physical Chemistry in 2018 under supervision of Professor Guangjun Nie from the National Center for Nanoscience and Technology in China. She spent two years (2015-2017) as a visiting PhD student supervised by Professor Greg Anderson in the Iron Metabolism Laboratory of QIMR Berghofer Medical Research Institute in Australia. She was focus on the mechanism of iron metabolism and treatment of iron related disorders by nanotechnology at the beginning of her PhD career. At the end of her PhD study, she showed great interest in developing nano-tools to treat the glycolipid-related diseases. Since 2019, she has joint Dr. Chun-xia Yi's group as a postDoc at the Department of Endocrinology and Metabolism of Amsterdam University Medical Centers (UMC) in the Netherlands.
Her current research interests include reprogramming of the microglia metabolism by nanotechnology, the pharmacokinetics of nanoparticles in the brain, the translational studies on human brain microglia related disorders, mechanism and treatment of iron related disorders and liver diseases using nano-drugs.

PUBLICATION

- Guo S, Liu G, Frazer D.M, Anderson G.J, Nie G, et al. Polymeric Nanoparticles Enhance the Ability of Deferoxamine To Deplete Hepatic and Systemic Iron. Nano Letters 2018. 18(9): 5782-5790.
- Guo S, Frazer DM, Anderson GJ. Iron homeostasis: transport, metabolism, and regulation. Current Opinion in Clinical Nutrition and Metabolic care 2016. 19(4):276-81.
- Guo S, Wang L, Li X, Nie G, Li M, Han B. Identification of a novel UROS mutation in a Chinese patient affected by congenital erythropoietic porphyria. Blood Cells, Molecules &Diseases. 2014. 52(1):57-8.
- Liu G, Guo S, Anderson GJ, Camaschella C, Han B, Nie G. Heterozygous missense mutations in the GLRX5 gene cause sideroblastic anemia in a Chinese patient. Blood 2014. 124(17):2750-1.
- Liu G, Guo S, Kang H, Zhang F, Hu Y, Wang L, et al. Mutation spectrum in Chinese patients affected by congenital sideroblastic anemia and a search for a genotype-phenotype relationship. Haematologica 2013. 98(12):e158-60.

Halamoda-Kenzaooui Blanka

Blanka Halamoda-Kenzaoui
Scientific Project Officer,
Consumer Products Safety Unit
European Commission Joint
Research Centre, Ispra, Italy

Blanka Halamoda-Kenzaoui (PhD) is Scientific Project Officer working in the area of safety of nanomaterials at the Consumer Products Safety Unit of the European Commission's Joint Research Centre (JRC). She has an expertise in nanotechnology, *in vitro* toxicology and method development.
She has received a Master degree in pharmaceutical sciences at Wroclaw Medical University (Poland) and a PhD in Life Sciences at University of Lausanne (Switzerland), for her work in the area of nanotoxicology. She has taken part in several projects related to the assessment of safety and compatibility of nanomedicine formulations and manufactured nanomaterials. In 2013 she joined the JRC for a post-doctoral project focusing on the influence of the

physicochemical properties of nanoparticles on their biological effect. Currently she is working in the area of the regulatory science for nanotechnology-enabled health products.

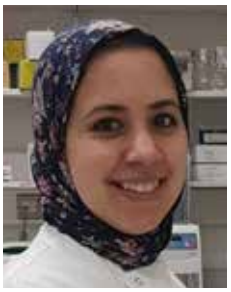
RECENT PUBLICATIONS:

- Halamoda-Kenzaoui, B., Box, H., van Elk, M., Gaitan, S., Geertsma, R. E., Gainza Lafuente, E., … Bremer-Hoffmann, S.. Anticipation of regulatory needs for nanotechnology-enabled health products-The REFINE White Paper. Publications Office of the European Union, 2019, EUR 29919.
- Halamoda-Kenzaoui, B., Baconnier, S., Bastogne, T., Bazile, D., Boisseau, P., Borchard, G., … Bremer-Hoffmann, S. Bridging communities in the field of nanomedicine. Regulatory Toxicology and Pharmacology, 2019, 106, 187–196. https://doi.org/10.1016/J.YRTPH.2019.04.011
- Halamoda-Kenzaoui B, Holzwarth U, Roebben G, Bogni A, Bremer-Hoffmann S. Mapping of the available standards against the regulatory needs for nanomedicines. Wiley Interdiscip Rev Nanomed Nanobiotechnol. 2018, 11(1):e1531.
- Halamoda-Kenzaoui B, Bremer-Hoffmann S. Main trends of immune effects triggered by nanomedicines in preclinical studies. Int J Nanomedicine. 2018, 17;13:5419-5431.
- Bremer-Hoffmann S, Halamoda-Kenzaoui B, Borgos SE. Identification of regulatory needs for nanomedicines. J of Interdisciplinary Nanomedicine 2018, 3(1), 4-15.

Alina Heck

PhD

Alina Heck studied biomedical chemistry at the Johannes Gutenberg University, Mainz (Germany), and received her master's degree in 2019. During her studies she could gain first research experience by spending 7 months in the laboratories of Prof. Dr. Winnik at the University of Toronto, Canada. Currently she is doing her PhD in the group of Dr. Lutz Nuhn at the Max Planck Institute for Polymer Research and a member of the Integrated Research Training Group within the Collaborative Research Center 1066, Mainz (CRC 1066). Her PhD topic deals with pH-reversible, Nanogel-mediated Immunodrug Delivery Systems.



Dina Helal

Newton-Musharafa Fellow, PhD student

Dina Helal completed her BSc and MSc in Pharmacy from Ain Shams University, Egypt. She worked as a teaching assistant before being awarded the Newton Mosharafa Scholarship (Host: Khuloud Al-Jamal) to pursue a joint PhD programme between the Institute of Pharmaceutical Science, King's College London and the Faculty of Pharmacy, Ain Shams University, Egypt. Her current project involves developing albumin nanoparticles for glioma therapy and their pre-clincial translation.

RECENT PUBLICATIONS:

- Elena Zaghi, Dina Omar, Jia Sun, Julie Wang and Khuloud Al-Jamal. The development of riluzole nanoparticles for treatment of Amyotrophic lateral sclerosis. In preparion.

Herrero Jorge Moreno

Jorge started his studies in Biomedical Sciences (BSc) in the University of Alcala (Madrid, Spain) in 2010 with majors in Biochemistry and Cellular Biology. He did an Erasmus exchange in 2012 at University of Mainz (Germany) and decided to stay after the Exchange. He continued and finalized his studies in Molecular Biology (BSc). He has a Master of Science in Biomedical Sciences from the University of Mainz, where he focused on immunology, molecular medicine and biochemistry.

He joined BioNTech's RNA Formulation & Drug Delivery Department in 2016 as a master student. Through his master's thesis, he investigated cationic polymer system for gene delivery, focusing on polyethyleimine-RNA systems. After his master, he was offered the chance to start a PhD in BioNTech, focusing on structure-function coherencies of mRNA-polymers for rational design of tailored polymer vehicles. Since 2016, he is author of 2 published patents and 1 pending patent. He has acquired experience in different characterization technics such as DLS, CD, UV, SAXS, SANS. He is trained in different microscopy technics such as dSTORM and confocal microscopy and has extensive experience on different in-vitro assays for the evaluation of biological activity of non-viral delivery systems.

Jorge was born in the Basque Country (Spain). He speaks fluently Spanish, German, English and Basque.

Natkritta Hüppe

PhD student

Natkritta started her bachelor studies in Chemistry at the RWTH Aachen University in 2012. After finishing her bachelor thesis in the group of Prof. Dr. Martin Möller at the DWI-Leibniz Institute for Interactive Materials, she obtained her Bachelor degree in 2016. Natkritta did her following master studies in chemistry majoring in organic synthesis, bioactive compounds, technical chemistry and catalysis. During her master studies she was an intern in Prof. Matthew Moffits research group at the Universtiy of Victoria in Canada and was working on polymer assemblies via microfluidics. Natkritta did her Master thesis in the group of Priv.-Doz. Frederik Wurm at Max-Planck Institute for Polymer Research in Mainz about "Controlled Anionic Polymerization of Cyanoacrylates". She finished her master studies in chemistry in 2018. Right after Natkritta started her PhD in the group of Prof. Dr. Katharina Landfester at the Max Planck Institute for Polymer Research in Mainz. Currently she is working on protein-based nanocapsules via azide-alkyne click chemistry for targeted drug delivery. As a part of the interdisciplinary research training group of the Collaborative Research Center "Nanodimensional polymer therapeutics for tumor therapy" (SFB 1066) she is working closely together with collaborators of the department of dermatology of the University Medical Center in Mainz.

Anne Huppertsberg

PhD Student

Anne Huppertsberg studied Applied Chemistry (B.Sc.) and Bio- and Pharmaceutical Analysis (M.Sc.) at the Hochschule Fresenius, Idstein (Germany) receiving her master's degree in 2018. During her studies she could already gain first research experience by spending an integrated practical semester abroad in the research group of Prof. Dr. Peter Skabara at the University of Strathclyde in Glasgow, Scotland. The research of Skabara's group focuses on the synthesis and investigation of organic semiconductors for photonic devices. To gather further practical experience in the organic and polymer chemistry she wrote her bachelor's thesis in the Performance Materials unit of the Merck KGaA, Darmstadt (Germany).

She is currently a PhD student in the group of Dr. Lutz Nuhn at the Max Planck Institute for Polymer Research as well as a scholar and member of the Max Planck Graduate School (MPGC) and the Graduate Center of the Collaborative Research Center 1066, Mainz (CRC 1066). In her PhD she focuses on the synthesis and investigation of pH-responsive nanogels derived from squaric ester amide-based precursor polymers for drug delivery applications.

Isabell Keil

Isabell Sofia Keil has a Master of Science in Biology from the Justus-Liebig University Giessen with focus on biochemistry, immunology and animal physiology. She graduated in 2018 and subsequently started her PhD at TRON gGmbH at the University Medical Center of the Johannes Gutenberg University Mainz. Her PhD project focuses on the development of nanoparticle-based mRNA carrier systems for transient immunomodulation of immune cells. Her skills include particle formulation and functionalization, *in vitro* work with primary human and murine cells as well as flow cytometry.

Patric Komforth

PhD

Patric Komforth studied chemistry at the Johannes Gutenberg University, Mainz (Germany), and received his master's degree in 2019. He is currently a PhD student in the group of Dr. Lutz Nuhn at the Max Planck Institute for Polymer Research and a member of the Integrated Research Training Group within the Collaborative Research Center 1066, Mainz (CRC 1066). His PhD topic is about redox-responsive depolymerizable Polycarbonates.

RECENT PUBLICATION

- Martin Kluenker, Muhammad Nawaz Tahir, Rene Dören, Mareike Deuker, Patric Komforth, Sergi Plana-Ruiz, Bastian Barton, Sergii I. Shylin, Vadim Ksenofontov, Martin Panthöfer, Nadine Wiesmann, Jana Herzberger, Angela Möller, Holger Frey, Jürgen Brieger, Ute Kolb and Wolfgang Tremel, Iron Oxide Superparticles with Enhanced MRI Performance by Solution Phase Epitaxial Growth, Chem. Mater. 2018, 30, 4277–4288.

Michał Kopka

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EDUCATION

01.10.2016 – until now Student of Medical University of Warsaw

I was graduated from High School No. 3 in Opole in 2016. In the same year I participated 45th National Biology Olympiad and won golden medal. That allowed me to represent Poland at 27th International Biology Olympiad in Vietnam, where I gained silver medal. I also took part in the final stage of 62nd National Chemistry Olympiad.

In 2016 I started studying at Medical University of Warsaw. From the beginning I was especially interested in histology. From the second year of study I was a member of The Histology and Embryology Students' Association where I learned essentials of laboratory work. From July 2018 our research team created Students' Association of Experimental Medicine. In that time I was working in the grant "Impact of N-acetycysteine on surgical wound healing" in a part concerning on genes expression. I was also working in the project that applied molecular navigation system for oncological surgery. Publications form following research are in review. At the same time I was developing a software for automatic morphometric analysis of axons and myelin sheaths.Now we begin experiment that analyses potential of adipose stem cell in regenerative medicine. We also achieved grant from project "Best of the Best! 4.0" financed by Polish Ministry of Science and Higher Education in September 2019. I am also interested in clinical medicine. Since September 2019 I am in Students' Association at Department of Paediatrics, Hematology and Oncology and focus on side effects of L-asparaginase in therapy.

I have presented results of research at international students' conferences in Berlin and Bucharest:

1. Kopka. Michał, Wiktor Paskal, Adriana Paskal, Piotr Pietruski, Kacper Pełka, Albert Stachura, Paweł K. Włodarski, "The molecular response of wounded skin to pre-incisional N-acetylcysteine injection - an animal model of improving skin healing." 4th Medical International Conference for Students MEDICS 2019, 11 – 14.04.2019, Bucharest, Romania
2. Kopka. Michał, Wiktor Paskal, Adriana Paskal, Piotr Pietruski, Paweł K. Włodarski, "A semi-automated morphometric analysis of peripheral nerve image" 30th European Students' Conference 2019 Charité, 25 – 29.09.2019 Berlin, Germany

Silke Krol

Laboratory for personalized medicine,
National Institute of Gastroenterology,
"S. de Bellis" Research, Hospital,
Castellana Grotte, Bari (I)
E-Mail: silke.krol@aol.com

Since 2018 Silke Krol is with IRCCS Ospedaliero Specializzato in Gastroenterologia "Saverio de Bellis" developing novel nanoparticle-based therapeutic and diagnostic approaches for inflammatory bowel disease. From 2010 till 2018 Silke Krol was with Fondazione IRCCS Istituto Neurologico "Carlo Besta" in Milan, Italy heading the laboratory for Nanomedicine. There she studied the transport mechanisms for differently functionalized gold nanoparticles across the blood brain barrier and how this is influenced by blood-derived proteins. Moreover, different novel metallic and non-metallic delivery systems for various other diseases (cardiovascular, prion disease, epilepsy, glioma, lymphomas, viral diseases) were designed for projects funded by Italian and European founda-

tions. In collaboration with Prof. Stellacci in Lausanne, Switzerland, they discovered the role of nanoparticles in vaccine stabilization, antiviral action and enhancer for viral infectivity for gene delivery. From 2016-2018 she worked in parallel for the IRCCS Istituto tumori "Giovanni Paolo II" in Bari, Italy leading the laboratory for translational Nanotechnology with focus on early diagnosis and advanced therapy of cancer.
She studies the application of multifunctional polymer/nanogold based drug or drug delivery systems as well as diagnostic tool for medical applications such as a hand-held point-of-care device for measuring chemotherapeutic drugs in real-time at the bedside of the patient. Moreover, the multilayer-nanocoating was used for encapsulation and immune protection of living cells like e.g. pancreatic islets. She has several pending patents for possible future drugs for prion disease and cancer treatment, viral diseases, and cancer diagnostics.
In 2009 she worked as an expert consultant for the United Nations and serves as external expert reviewer for National projects in France, Italy, Georgia and Greece. She worked as project technical advisor in 3 EU-FP7 projects and was external expert for the evaluation of EU project. She is member of the international advisory committee of the International scientific spring conference in Islamabad, Pakistan. She is member of the editorial board of the journal "Precision Medicine", and associate editor of "Frontiers in Nanobiotechnology". Since 2013 she is adjunct faculty member at the Pakistan Institute of engineering and applied science (PIEAS). Recently she founded a start-up, EnCytos with a team from the University of Twente.

Fredrik Kullenberg

Fredrik Kullenberg has his background in Engineering Nanoscience, which he studied at the Faculty of Engineering at Lund University. He started there in 2011 and received his Master of Science in 2016.
The education is interdisciplinary and includes many subjects, from quantum physics to immunology and neurobiology. During his studies he has, besides the subjects mentioned above, also studied physiology, pharmaceutical chemistry, cell biology and programing.
His master's thesis, Formulation and Characterization of a Liposomal Spray Dried Powder Intended for Inhalation , concerned the development and analysis of a model protein drug. The project was a collaboration between a pharmaceutical company and the University, which gave Fredrik an insight into how research is performed in both academia and in the pharmaceutical industry.
After receiving his master's degree, Fredrik also studied Pharmaceutical Bioinformatics at Uppsala University, which he passed with distinction.
After this, Fredrik spent a year working as a Drug Safety Associate at Sobi, a Swedish pharmaceutical company which specializes in rare diseases and protein pharmaceuticals.
Fredrik's current position is as a PhD student in the Lennernäs group at the Department of Pharmacy, Uppsala University, where he started in October 2017. His PhD project has the preliminary title Functional liposome nanoparticle drug carriers as a theranostic for hepatocellular carcinoma: the role of locoregional targeted drug delivery for interventional therapy. As can be seen in the preliminary title, the project concerns the innovation and development of novel nanoparticle formulations to be used in the treatment of primary liver cancer. So far, the project has mainly consisted of testing currently existing formulations, such as Caelyx®, as a first step to determine the impact of various parameters in different formulations.

Emilie Laprévotte

Emilie Laprévotte has a PhD in biology, with a specialization in oncology, from Paul Sabatier University (Toulouse, France). During her PhD, she developed, in collaboration with Roche Glycart AG, a new combination therapy using an antibody with a human cytokine for the treatment of haematological malignancies. Then she joined OREGA Biotech (Montpellier, France) as project manager where she established the preclinical proof of concept of antibodies targeting the tumor in solid cancers. In 2017, she joined INOFEA AG (Basel, Switzerland), where she established the early proof of concept of enzzen®-therapeutic enzymes. Emilie is now Chief Development Officer at Perseo pharma.

Dorelia Lipsa

Dorelia Lipsa has a Medical Bioengineering diploma followed by a specialisation in Bioactive substances and Biotechnology, both obtained from the University of Medicine and Pharmacy, Romania.
In 2017, she obtained a PhD in Natural Sciences from the Technical University of Münich (Germany), being a Research Fellow at the European Commission Joint Research Centre (EC-JRC), Institute for Health and Consumer Protection (IHCP) in Ispra, Italy.
With over 10 years' experience in a multidisciplinary research field, she is able (1) to set-up *in vitro* exposure devices (e.g. CULTEX) aiming to study the toxicological effects of volatile pollutants on human blood and derived cells; (2) to develop and/or optimise analytical tools for *in vitro* toxicity testing; (3) to evaluate the biocompatibility of drugs excipient and/or smart nanomaterials; (4) to characterise chemical and/or biological substances by using different analytical techniques such as HPLC, LC-MS, GC-MS, GC-FID and *in vitro* assays (e.g. LAL test, ELISA, EIA assay, MAT).
Currently she is a scientific officer at the EC-JRC where she is carrying out research for the PIRAT (Personalised Immunological Risk Assessment Technology) project that aims to develop a blood-on-the-chip device allowing the evaluation of immunogenicity of advanced material in ex vivo model systems.

PUBLICATIONS:

- D. Lipsa, C. Cacho, D. Rembges, J. Barrero, Fresenius Environmental Bulletin, Parlar Scientific Publications, vol. 23, no. 12, p. 3054-3058, 2014, "Fast cell counting – the better cell counting?"
- D. Lipsa, C. Carmen, P. Leva, J. Barrero, M.P. Aguar Fernandez, OMICS international, 2015, "Development of a HPLC-UV method for the simultaneous determination of intercellular glutathione species in human cells"
- D. Lipsa, P. Leva, J. Barrero, C. Mehmet, Toxicology Letters, vol. 262, p. 70-79, 2016 "Inflammatory effects induced by selected limonene oxidation products: 4-OPA, IPOH, 4-AMCH in human bronchial (16HBE14o-) and alveolar (A549) epithelial cell lines
- D. Lipsa, J. Barrero, C. Mehmet, Chemosphere, vol. 191, p. 937-945, 2018, "Exposure to selected limonene oxidation products: 4-oxopentanal (4-OPA), 3-isopropenyl-6-oxo-heptanal (IPOH), 4-acetyl-1-methylcyclohexene (4-AMCH) induce oxidative stress and inflammation in human epithelial cell lines"
- S. Kephalopoulos, S. Bopp, S. dalla Costa, A. Cusinato, D. Lipsa, O. Geiss, "Indoor air monitoring: sharing and accessing data via the Information Platform for Chemical Monitoring (IPCHEM)", accepted by the reviewers

Giovanna Lollo

Dr. Giovanna Lollo is Associate Professor at the Faculty of Pharmacy-ISPB (Institut des Sciences Pharmaceutiques et Biologiques) at the University of Claude Bernard Lyon 1. She carries out research activity, at the frontiers of pharmaceutical technology, physical chemistry, and biology at the LAGEPP UMR CNRS 5007.

She graduated as Pharmacist in 2007 from the University of Naples Federico II (Italy) with the greatest distinction, and she has also obtained the diploma of Hospital Pharmacist from the same University. In 2012, under de supervision of Prof Maria Jose Alonso at the University of Santiago de Compostela (Spain), she held a Ph.D. in Pharmaceutical Technology with a dissertation: "Polyaminoacid nanocapsules as drug delivery systems for antitumor drugs". Then, she joined the MINT (Micro et Nanomédecines Biomimétiques) group at University of Angers (France) where she worked during 3 years as Postdoctoral Scientist developing novel nano-immuno-chemotherapeutic approaches to defeat cancer.

She has authored/ co-authored of several peer reviewed scientific publications in the field of drug delivery and she filed 3 patents. Currently, her research field is focused in the design and development of novel nanosytems to cross biological barriers reaching target pathological sites without compromising healthy tissues.

RECENT PUBLICATIONS:

- Pinton L, Magri S, Masetto E, Vettore M, Schibuola I, Ingangi V, Marigo I, Matha K, Benoit JP, Della Puppa A, Bronte V, Lollo G, Mandruzzato S.; Targeting of immunosuppressive myeloid cells from glioblastoma patients by modulation of size and surface charge of lipid nanocapsules. J Nanobiotechnology. (2020); 18(1):31. doi: 10.1186/s12951-020-00589-3
- Carton F., Chevalier Y., Nicoletti L., Tarnowska M., Stella B., Arpicco S., Malatesta M., Petter Jordheim4, L., Briançon S., Lollo G. Rationally designed hyaluronic acid-based nano-complexes for pentamidine delivery. Int J Pharm. (2019); 568:118526. doi: 10.1016/j.ijpharm.2019.118526
- Lollo G., Matha K., Bocchiardo M., Marigo I., Virgone-Carlotta A., Dehoux T., Rivière C., Rieu JP., Briançon S., Meyer O., and Benoit JP. A novel 5FU derivative encapsulated into lipid nanocapsules for the drug delivery to tumors. J. Drug Target. (2019); 27(5-6):634-645. doi: 10.1080/1061186X.2018.1547733
- Lollo G., Ullio-Gamboa G., Fuentes E., Matha K., Lautram N., Benoit JP., In vitro anti-cancer activity and pharmacokinetic evaluation of curcumin-loaded lipid nanocapsules. Mater. Sci. Eng. C (2018); 91:859-867. doi: 10.1016/j.msec.2018.06.014
- Lollo G., Gonzalez-Paredes A., Garcia-Fuentes M., Calvo P., Torres D. and Alonso M.J., Polyarginine nanocapsules as a new carrier for oral delivery. J. Pharm. Sci., (2017); 106 (2): 611-618. doi.org/10.1016/j.xphs.2016.09.029

Stefan Lyer

STEFAN LYER studied Biology at the Friedrich-Alexander University Erlangen/Nürnberg. After finishing his PhD thesis at the German Cancer Research Center (DKFZ)/ Ruprecht-Karls-University Heidelberg he stayed as a post doc at the Department of Genome Analysis at the DKFZ for another year. In 2008 he moved back to Erlangen starting a post doc position at the group of Prof. Christoph Alexiou at the ENT-Department of the University Hospital Erlangen, which was renamed Section for Experimental Oncology and Nanomedicine (SEON) in 2009. Here, in the beginning he focussed on the application of nanoparticles in cancer therapy. Since 2011 he has been assistant group leader of SEON. Due to the interdisciplinary group he gained insight into different areas of science but still his expertise is focussed on the biological aspects of Magnetic Drug Targeting. His main topic is performing animal experiments in rabbits. Here, he introduced catheter-based application of the nanoparticles in the vicinity of the tumours to treat. He also implemented an arteriosclerotic model in the abdominal aorta of rabbits and a technique of nanoparticle application for the treatment of arteriosclerotic plaques in vessels with such a high flow rate.

RECENT PUBLICATIONS:

- Tietze R, Lyer S, Durr S, Struffert T, Engelhorn T, Schwarz M, et al. Efficient drug-delivery using magnetic nanoparticles - biodistribution and therapeutic effects in tumour bearing rabbits. Nanomedicine-Nanotechnology Biology and Medicine. 2013;9(7):961-71.
- Heid S, Unterweger H, Tietze R, Friedrich RP, Weigel B, Cicha I, et al. Synthesis and Characterization of Tissue Plasminogen ActivatorFunctionalized Superparamagnetic Iron Oxide Nanoparticles for Targeted Fibrin Clot Dissolution. International Journal of Molecular Sciences. 2017;18(9).
- Lyer S, Knopp T, Werner F, Zaloga J, Friedrich R, Trahms L, et al. Multifunctional SPIONs for Theranostics in Cancer. 2018. 2018;4(1).
- Matuszak J, Lutz B, Sekita A, Zaloga J, Alexiou C, Lyer S, et al. Drug delivery to atherosclerotic plaques using superparamagnetic iron oxide nanoparticles. International Journal of Nanomedicine. 2018;13:8443-60.
- Janko C, Ratschker T, Nguyen K, Zschiesche L, Tietze R, Lyer S, et al. Functionalized Superparamagnetic Iron Oxide Nanoparticles (SPIONs) as Platform for the Targeted Multimodal Tumor Therapy. Frontiers in Oncology. 2019;9.

Guillaume Maurin-Pasturel

Guillaume MAURIN-Pasturel was graduated in chemistry and physic-chemistry of materials (specialization in Molecular, Macromolecular and Supramolecular Engineering) in 2012 in the university of Montpellier (France). He obtained his PhD in chemistry and physic-chemistry of materials in 2015 in the university of Montpellier/ Charles Gerhardt Institute (France). During his doctoral thesis he worked on the synthesis and study of molecular-based multifunctional nano-objects for biomedical applications. That consisted in the elaboration of a Gold@Prussian Blue Analogue (PBA) core@shell nano-object presenting optical and magnetic properties, which was the first well-defined example of such combination as nanoparticle in the literature. Such nano-system presents magneto-optic multifunctionality which can be modulated by varying the size of the gold core and/or the thickness of the PBA as the nature of the PBA used. By epitaxial growth of different PBA, it has been possible to implement one or several different PBA layers, permitting to modulate the final properties. Particularly, he designed one nano-object with a second layer of Prussian Blue, and proposed it to pursue a first study previously made in the team. Consequently, such nano-objects were used after loading of radioactive thallium has radiotracers for SPECT-CT-imaging, permitting to significantly change the biodistribution *in vivo* and the activity half-time in comparison with commercial 201TlCl radiotracer. On other hand, the comparison of the magnetic properties with superparamagnetic NiCr PBA NPs, the study of the magnetic properties of core@shell gold@PBA made of the same NiCr PBA revealed a spin-glass behavior. By comparison with simple NiCr PBA NPs of similar size, exhibiting superparamagnetic properties, he illustrated an interesting modification of the magnetic properties of a material because of the use of different architectures. After his PhD, he

made a first postdoctoral contract in 2016 in the Charles Gerhardt Institute in Montpellier (France) for a start-up, OLEOWAYS, developing a new oil for hybrid coating of surfaces. The idea consisted to modified a vegetable oil by click-chemistry to obtain Si-coated vegetable oils able to for hybrid coating on glass or metal surfaces. The coating obtained showed interesting properties as protective coating, and able to modify the resistance properties of cellulose.
Then he went the same year in the university of Aveiro, Portugal, to study the use of luminescence for thermometry. He worked during almost one year and a half on the synthesis and study of Lanthanide MOFs permitting to make pH-sensing and/or thermometry using Eu luminescence. Particularly, he investigated on the bimodal thermometry using both radiometric change of intensity and shift of the Eu emission bands of these compounds. By varying the experimental conditions, he obtained a new phase, which reveals able to be use for bimodal thermometry. The study is still active, and some articles are expected.

In 2018, he obtained an ERC fellowship Horizon 2020 with Dr. Ángel Millán Escolano from ICMA, in Zaragoza, Spain, and moved there, where he is still actually working. This current project consists in improving a system developed in this team with the collaboration of the University of Aveiro consisting of a nano-object permitting to act as both a nanoheater and a nanothermometer to performed local controlled hyperthermia. The main goal lies in determining the feasibility of a new concept of cancer therapy, based on the local intracellular therapy. For this, one of the main activities consists in improving the luminescent properties of the lanthanides' complexes used, as their stability, to obtain better suitable luminescent thermometers for biological applications. In this purpose, he is currently working on a study of various complexes, and particularly about the effect of the nature of the ancillary ligand on the luminescent properties, which still remains not understood in the literature.

LIST OF 5 MAIN ARTICLES:

- G. Maurin-Pasturel, and al., 2019, Dalton Transactions, 48 (18), 6205-6216.
- G. Maurin-Pasturel, and al., 2019, Eu. J. Lipid. Sci. Technol., 121 (4), 1800231.
- G. Maurin-Pasturel, and al., 2017, Inorganic chemistry frontiers, 4, 1737.
- G. Maurin-Pasturel, and al., 2017, Chemistry: An European Journal, Vol. 23, 31, 7483-7496. (Inside Cover)
- G. Maurin-Pasturel and al., 2014, Angewandte Chemie, 53, 3872. (Back Cover)

Carolina Medina-Montano

Hintere Bleiche 61, 55116 Mainz – 01783750382 – gmedinam@students.uni-mainz.de

Mrs Medina-Montano is graduated in Microbiology from the University of Antioquia in Medellin, Colombia. Mrs Medina-Montano came for a couple years to Germany to continue her studies in Biomedicine at the Johannes Gutenberg University in Mainz. Mrs Medina-Montano´s carrier started in Colombia by working in clinical laboratories in different hospitals. In these roles, she discovered her passion about investigation and she decided to move to Germany to obtain her Master degree. After finish her Master degree, she has worked at the University Medical Center in Mainz and Frankfurt, in several topics including tropical medicine, traslational immunology and hemato-oncology.
In December 2019, she started her PhD in Nano-biomedicine in the research laboratory group from Professor Grabbe. She is working on several nanoparticles projects, which include the collaboration with other interdisciplinary research groups at the Johannes Gutenberg University in Mainz, Germany and also with the University of Antioquia in Medellin, Colombia. Through her interdisciplinary and international work, she can also speak three languages: Spanish as mothertongue, English and German.

Florian Meier

Florian Meier holds a PhD in Analytical Chemistry earned from University of Ulm, Germany in 2013 and joined Postnova Analytics in 2014 as Group Leader Research.
In this position, he gained vast experience in the application of various Field-Flow Fractionation (FFF) techniques and related detection systems such as for example Multi Angle Light Scattering, Dynamic Light Scattering or Inductively-Coupled Plasma Mass Spectrometry.
As a passionate researcher in an industrial environment, his research focuses on the characterization of samples in the nano- and micrometer size range (e.g. engineered nanomaterials, micro- and nanoplastics, environmental colloids, proteins, polymers, viruses, nano-enabled pharmaceuticals and many more), thereby exploiting and continuously pushing the limits of multi-detector FFF. In this respect, he was and is involved in several collaborative national and international research projects
Being a designated member of the "Arbeitsausschuss Nanotechnologien" of the German Institute for Standardization (DIN), he enjoys bringing in his FFF-expertise as an appointed expert for the ISO/TC 229 "Nanotechnologies".

LIST OF NATIONAL AND INTERNATIONAL COLLABORATION PROJECTS (EXCERPT)

- NanoCELL, German BMBF, ongoing (project coordinator) https://www.nanopartikel.info/en/projects/current-projects/nanocell
- SubµTrack, German BMBF, ongoing; https://bmbf-plastik.de/en/joint-project/submtrack
- ACEnano, EU Horizon 2020 Programme, ongoing; http://www.acenano-project.eu/
- NanoUmwelt, German BMBF, 2014-2017 (project coordinator); https://www.nanopartikel.info/en/projects/completed-projects/nanoumwelt
- SamrtNano, EU Framework 7 Programme, 2012-2016; https://www.linkedin.com/in/smartnano-project-47496763/

LIST OF PEER-REVIEWED PUBLICATIONS (EXCERPT)

- M. Hesler, L. Aengenheister, B. Ellinger, R. Drexel, S. Straskraba, C. Jost, S. Wagner, F. Meier, H. von Briesen, C. Büchel, P. Wick, T. Buerki-Turnherr, Y. Kohl, "Multi-endpoint toxicological assessment of polystyrene nano- and microparticles in different biological models *in vitro*", Toxicology in Vitro, 2019, 61, 104610.
- D. Müller, M. Nogueira, S. Cattaneo, F. Meier, R. Drexel, C. Contado, A. Pagnoni, T. de Vries, D. Cohen, M. Portugal-Cohen, A.J. deMello, "Integration of inverse Supercritical Fluid Extraction and miniaturized Asymmetrical Flow Field-Flow Fractionation for the rapid analysis of nanoparticles in sunscreens", Analytical Chemistry, 2018, 90(5), 3189-3195.
- Z. You, F. Meier, S. Weidner, "Comparison of Miniaturized and Conventional Asymmetrical Flow Field-Flow Fractionation (AF4) Channels for Nanoparticle Separations", Separations, 4(1), 8-19.
- V. Sogne, F. Meier, T. Klein, C. Contado, "Investigation of Zinc Oxide particles in cosmetic products by means of Centrifugal and Asymmetrical Flow Field-Flow Fractionation", Journal of Chromatography A, 2017, 1515, 196-208.
- K. Eskelin, M. Lampi, F. Meier, E. Moldenhauer, D.H. Bamford, H.M. Oksanen, "Asymmetric flow field flow fractionation methods for virus purification", Journal of Chromatography A, 2016, 1469, 108-119.

Ana Milosevic

Ana Milosevic obtained her MSc degree in Biochemistry at Faculty of Chemistry, University of Belgrade. In 2018 she completed her PhD studies at the Adolphe Merkle Institute, University of Fribourg, in the group of Prof. Barbara Rothen Rutishauser and Prof. Alke Fink where she worked with fluorescently labelled nanoparticles and investigated their interaction with cell and ultimate fate. Currently she is a project manager for the national contactpoint-nano.ch for the safe handling of nanomaterials, regulation and knowledge transfer.

Gergely Milosevits

MD, specialist of pediatrics, research fellow (Nanomedicine Research and Education Center, Institute of Translational Medicine, Semmelweis University, Budapest, Hungary).
After graduating from Semmelweis University in Budapest, dr. Gergely Milosevits started working as a medical doctor at the University's II. Department of Pediatrics, where he became a specialist in pediatrics and the head of the General Outpatient Ward. Recently he has been working as a pediatric GP in Szigetszentmiklós. He is also a research fellow in the laboratory of Professor János Szebeni at the Nanomedicine Research and Education Center in Budapest, Hungary. He is especially interested in flow cytometry, liposomes, exosomes and CARPA.

RECENT PUBLICATIONS:

- Exosomes: potential model for complementstealth delivery systems. Eur. J. Nanomed. 2015; 7(3): 207–218. Gergely Milosevits*, János Szebeni and Silke Krol
- University thesis: Flow cytometric analysis of the physicochemical characteristics and stability of nanopharmaceutical carriers and agents.
- Flow cytometric analysis of supravesicular structures in doxorubicin-containing pegylated liposomes. Chem Phys Lipids. 2012 May;165(4):482-7. Milosevits G, Rozsnyay Z, Kozma GT, Milosevits J, Tömöry G, Robotka H, Rosivall L, Szebeni J.

Nura Adam Mohamed

Dr. Nura Adam Mohamed is currently working as a Postdocoral fellow at Qatar University, Doha-Qatar. She received her Bachelor degree in Biomedical Science from Qatar University (2009) and her Master and PhD degrees from Imperial College of London (2012-2016). Her current postdoctoral fellowship is between Qatar University and Imperial College of London as she is working on a project entitled "A nanomedicine approach to the treatment of pulmonary arterial hypertension", She has previously worked as a research fellow at Qatar University and before that worked as a research assistant in the Shafallah Medical Genetic Centre, Doha-Qatar gaining experience in in recombinant DNA. She is a member of the British Pharmaceutical Society, the British Pharmaceutical Society Advisory Group, the British Nanomedicine Society and holds an honorary research officer position at Imperial College of London. She has been supervising BSc and Master Students from UK and Qatar for their research projects since 2015. She has also won several local and international awards as well as holding funds for her current project. Her main focus is to apply nanotechnology and stem cells applications to improve treatment strategies for cardiovascular diseases. Her disease of interest is Pulmonary Arterial Hypertension (PAH) which is a devastating/incurable disease with available treatments being limited by their half-life and systemic side effects. These limitations can be overcome by the use of the unique nanoparticles, the Metal organic frameworks (MOF)-nanoMIL-89 for the many attractive properties it offers. Her work yield the development of the first PAH drug-MOF conjugate which showed unique pharmacokinetic properties that is now being tested *in vivo* using PAH models for it to be taken all the way to the pre-clinical stages

Marzieh Mohammadi

Marzieh was born in 1989 in Iran. In 2013, She received her Pharm.D. degree and the thesis title was "Targeted delivery of BCL9L siRNA to colon carcinoma stem cells using aptamer- conjugated carbon nanotubes" which was published in international journal of pharmaceutics. Then, she started her PhD in Pharmaceutical Nanotechnology in Mashhad University of Medical Sciences (MUMS), Iran and received her PhD degree in 2018. Her PhD thesis was entitled "Electrospun nanofibers containing BMP2-encapsulated liposomes to promote osteogenic differentiation" under the supervision of Prof. Mohammad Ramezani and Prof. Mahmoud Reza Jaafari. In 2017, she joined a short term visiting scholar program in Harvard-MIT division of health sciences and technology, USA under the supervision of Prof. Khademhosseini.
Marzieh was ranked among top 10 in National medical students Olympiad, 2011 and she was the top graduated student (first rank) of Mashhad pharmacy school based on overall score (18.37 out of 20), 2013. Additionally, she ranked first among PhD candidates for PhD program in pharmaceutical nanotechnology in Iran, 2013. During her PhD program, she published 17 papers (13 original and 4 review) in high impact journals such as Advanced functional materials. Her thesis papers were also published in the journal of Nanomedicine: Nanotechnology Biology and Medicine and Controlled release.
Recently, she started as an assistant professor of pharmaceutics at school of Pharmacy, MUMS, Iran and her current research interest is focused on the design of drug delivery systems and their application in regenerative medicine and cancer therapeutics.

Fotios Mpekris

Dr. Mpekris earned a BS degree in Physics (2012) and a PhD in Biomedical Engineering (2016) from the University of Cyprus. During his doctoral studies, he focused on the development of strategies that remodel the tumor microenvironment to improve drug delivery and thus, therapeutic outcomes. He was initially trained as a biomedical engineer and mathematical modeller, and received experimental training on the biomechanical characterization of solid tumors and other biological tissues and polymers. Subsequently, he was extensively trained in murine tumor models, small laboratory animal handling and surgical procedures as well as in anticancer drug treatments. His research work has been licensed by the Veterinary Services of the Ministry of Agriculture (Republic of Cyprus). These acquired skills and knowledge has enabled him to work comfortably at the interface of mathe-

matical, computational and experimental biology. Since 2016, Dr. Mpekris has been a Postdoctoral fellow at the Cancer Biophysics Laboratory at the University of Cyprus. He has been participated in research projects funded by the European Research Council (336839-ReEngineeringCancer), Research Promotion Foundation of Cyprus (POST-DOC/0718/0084, CancerNanoMED) and the University of Cyprus.
The implementation of his research has led to the publication of a large number of articles in high impact journals and the development of scientific expertise that is internationally competitive. He has co-authored 21 scientific articles in peer-review journals (h-index=10, >550 citations), including 4 publications in PNAS and articles in Cancer Research, ACS Nano, Journal of Controlled Release, Oncotarget and Theranostics. Additionally, he has co-authored 8 papers and/or abstracts in referred conference proceedings and has given 6 podium presentations in International conferences.

RECENT PUBLICATIONS:

- Panagi M., Voutouri C., Mpekris F., Papageorgis P., Martin M.R., Martin J.D, Polydorou C., Kojima M., Ishii G., Kataoka K., Cabral H., Stylianopoulos T. (2020). TGF-β inhibition combined with nanomedicine normalizes the metastasis microenvironment towards anti-tumor immunity. Theranostics 10(4):1910-1922
- Martin J.D., Panagi M., Khan T.T., Wang C., Martin M.R., Voutouri C., Toh K., Papageorgis P., Mpekris F., Suzuki T., Wilheim M., Melo V.A., Polydorou C., Quader S., Norimatsu J., Lanning R.M., Kojima M., Stuber M.D., Styalianopoulos T., Cabral H., Kataoka K. (2019). Dexamethasone increases nanocarrier delivery by normalizing the tumor microenvironment. ACS Nano 13(6):6396-6408 [DOI:10.1021/acsnano. 8b07865]
- Zhao Y., Cao J., Jones D., Zhang Y., Nia H.T., Stylianopoulos T., Mpekris F., Datta M., Sun Y., Wu L., Gao X., Jain R.K., Xu L. (2019). Losartan treatment augments chemotherapy efficacy and reduces ascites by normalizing the tumor stroma in ovarian cancer models. PNAS 116(6):2210-2219 [DOI:10.1073/pnas. 1818357116]
- Voutouri C., Kirkpatrick N.D., Chung E., Mpekris F., Baish J.W, Munn L.L, Fukumura D., Stylianopoulos T., Jain R.K. (2019). Dynamics of vessel cooption in brain tumors revealed by integrative experimental and mathematical modeling studies. PNAS 116(7):2662-2671 [DOI:10.1073/pnas. 1818322116]
- Mpekris F., Baish J.W., Stylianopoulos T., Jain R.K. (2017). Role of vascular normalization in benefit from metronomic chemotherapy. PNAS, 114(8):1994-1999 [DOI:10.1073/pnas.1700340114]

Per H. Nilsson

Ph.D.
Associate Senior Lecturer, Centre for Biomaterials Chemistry,
Linnaeus University, Kalmar Sweden;
Researcher, Department of Immunology,
University of Oslo, Oslo, Norway
Host Response to Biomaterials Laboratory (HoRB)

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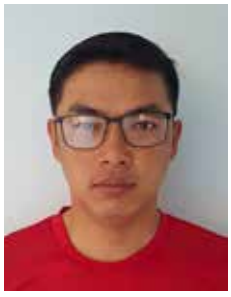
I am an associate senior lecturer and principal investigator of the research group "Host Response to Biomaterials" laboratory. I share my time equally between the Centre for Biomaterial Chemistry, Linnaeus University, Kalmar, Sweden, and the Department of Immunology, University of Oslo, Oslo, Norway. My time is allocated to research and teaching at approximately 75% and 25%, respectively. The focus of our research in the group of Host Response to Biomaterials Laboratory (HoRB) is to characterize how biomaterials perform in a biological system, with emphasis on the acute intravascular immune and thrombotic responses. We are a relatively junior research group with five people, including one post-doc, two Ph.D. students, and a technician. Our current main projects deal with i) the immunothrombotic response to nanoparticles in human whole blood, ii) the inflammatory and thrombotic *in vivo* response to implantation of a mechanical heart pump, so-called LVAD, and iii) the impact of the thrombotic response on inflammation. My research is mainly funded by grants from the Norwegian and Swedish research councils. I have my master's degree in Biomedicine from the University of Kalmar, Sweden, in 2006. I took my doctoral degree in Biomedical Sciences at Linnaeus University, Kalmar, Sweden, in 2012 with a compiled thesis with the title "Interactions between platelets and complement with implications for the regulation at surfaces", which included, e.g., two main authorships in Biomaterials. I continued as post-doc and later researcher in the group of Tom Eirik Mollnes at the University of Oslo. The overall focus of our research in Oslo was innate immune activation in sterile and septic inflammation. From that time, I have senior authorships in e.g., PNAS and the Journal of Infectious Diseases.
In miscellaneous information, I am a board member in the European Complement Network (http://www.ecomplement.org/) and a dedicated marathon runner with a fascination with ultra-long distances.

RECENT PUBLICATIONS:

- Thorgersen EB, Barratt-Due A, Haugaa H, Harboe M, Pischke SE, Nilsson PH, Mollnes TE: The role of complement in liver injury, regeneration and transplantation. Hepatology 2019.
- Wibroe PP, Anselmo AC, Nilsson PH, Sarode A, Gupta V, Urbanics R, Szebeni J, Hunter AC, Mitragotri S, Mollnes TE: Bypassing adverse injection reactions to nanoparticles through shape modification and attachment to erythrocytes. Nature Nanotechnology 2017, 12(6):589-594.
- Harboe M, Johnson C, Nymo S, Ekholt K, Schjalm C, Lindstad JK, Pharo A, Hellerud BC, Ekdahl KN, Mollnes TE, Nilsson PH: Properdin binding to complement activating surfaces depends on initial C3b deposition. Proceedings of the National Academy of Sciences 2017:201612385.
- Engberg AE, Nilsson PH, Huang S, Fromell K, Hamad OA, Mollnes TE, Rosengren-Holmberg JP, Sandholm K, Teramura Y, Nicholls IA, Nilsson B, Ekdahl KN: Prediction of inflammatory responses induced by biomaterials in contact with human blood using protein fingerprint from plasma. Biomaterials 2015, 36:55-65.
- Nilsson PH, Ekdahl KN, Magnusson PU, Qu H, Iwata H, Ricklin D, Hong J, Lambris JD, Nilsson B, Teramura Y: Autoregulation of thromboinflammation on biomaterial surfaces by a multicomponent therapeutic coating. Biomaterials 2013, 34(4):985-994.



Huy Quang Quach

Quang Huy Quach is a postdoctoral fellow at Department of Immunology, Oslo University Hospital. He is working within Norwegian Complement Research Group led by Dr. Tom Eirik Mollnes.
Currently, his research focuses on the development of ex vivo whole blood model for the evaluation of biocompatibility of biomaterials. This includes the interaction of biomaterials with different components of whole blood, such as the complement system, coagulation system, granulocytes, monocytes, platelets. The goal of this study is to fabricate an ex vivo whole blood model that better mimics human whole blood at its physiological conditions for the evaluation of biocompatibility of biomaterials.
Quang Huy holds a Bachelor degree in Biotechnology from Can Tho University, Vietnam; Master degree in Nanobiotechnology from Korea University of Science and Technology, Republic of Korea; and PhD degree in Biomedical Engineering from National University of Singapore, Singapore. His master thesis focused on the devel-

opment of fluorescent assays for the detection of cancer-related enzymes, including telomerase and DNA methyltransferase. During his doctoral research, Quang Huy worked on the interactions of selected nanomaterials with the complement system of innate immunity and the development of nanomaterial-based subunit vaccine against dengue virus.

RECENT PUBLICATIONS

- QH Quach, J Jung, H Kim, BH Chung, "A simple, fast and highly sensitive assay for the detection of telomerase activity", Chemical Communication, 2013.
- QH Quach, BH Chung, "A signal-on fluorescent assay for DNA methyltransferase activity using a methylation-resistant endonuclease", Analyst, 2014.
- QH Quach, JCY Kah, "Non-specific adsorption of complement proteins affects complement activation pathways of gold nanomaterials", Nanotoxicology, 2017.
- QH Quach, RLX Kong, JCY Kah, "Complement activation by PEGylated gold nanoparticles", Bioconjugate Chemistry, 2018.
- QH Quach, SK Ang, JJH Chu, JCY Kah, "Size-dependent protective activity of gold nanoparticle-based subunit vaccine against dengue virus", Acta Biomaterialia, 2018.

Mohammad Ramezani

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Mohammad Ramezani received his Pharma. D. degree from School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran in 1988. He granted a scholarship from the Ministry of Health and Medical Education of Iran to continue his education toward a PhD degree at the Department of Chemistry, Dalhousie University, Canada in 1996. After graduation, he continued his career as an Assistant Professor at the Department of Pharmaceutical Biotechnology, School of Pharmacy, Mashhad University of Medical Sciences. He was then promoted to position of Associate and full Professor in 2000 and 2004, respectively. Recently, he was promoted to the position of Distinguished Professor. The main focus of Dr. Ramezani's research is to develop functional nanomaterials for targeted gene and drug delivery purposes. He has published over 330 research papers in highly cited journals such as Advanced Functional Materials, Biomaterials, Journal of Controlled Release, Nanomedicine and International Journal of Pharmaceutics. He is also the Editor-in-Chief of the Nanomedicine Journal published by the Nanotechnology Research Center, Mashhad University of Medical Sciences. Dr. Ramezani has won the National Razi prize for best investigator in 2009 and 2018.

SELECTED PUBLICATIONS:

- F. Hosseini Shamili, M. Alibolandi, H. Rafatpanah, K. Abnous, M. Mahmoudi, M. Kalantari, S. M. Taghdisi, M. Ramezani* (2019). Immunomodulatory properties of MSC-derived exosomes armed with high affinity aptamer toward mylein as a platform for reducing multiple sclerosis clinical score. Journal of Controlled Release, 299, 149-164 (IF: 7.901).
- M. Shahriari, M. Zahiri, K. Abnous, S. M. Taghdisi, M. Ramezani*, M. Alibolandi (2019). Enzyme responsive drug delivery systems in cancer treatment. Journal of Controlled Release, 308, 172-189 (IF: 7.901).
- F. Charbgoo, M. Alibolandi, S. M. Taghdisi, K. Abnous, F. Soltani, M. Ramezani* (2018). MUC1 aptamer-targeted DNA micelles for dual tumor therapy using doxorubicin and KLA peptide. Nanomedicine: Nanotechnology, Biology, and Medicine, 14(3), 685-697 (IF: 5.570).
- M. Mohammadi, S. Taghavi, K. Abnous, S. M. Taghdisi, M. Ramezani*, M. Alibolandi (2018). Hybrid Vesicular Drug Delivery Systems for Cancer Therapeutics. Advanced Functional Materials, 28 (36), DOI: 10.1002/adfm.201802136, (IF: 15.621).
- S. M. Tghdisi, N. M. Danesh, M. Ramezani, R. Yazdian-Robati, K. Abnous (2018). A Novel AS1411 Aptamer-Based Three-Way Junction Pocket DNA Nanostructure Loaded with Doxorubicin for Targeting Cancer Cells in Vitro and in Vivo. Molecular Pharmaceutics, 15 (5), 1972-1978 (IF: 4.396).

Pouria Ramezani

Pouria Ramezani was born on September 1991 and after his graduation from high school in 2013, he was admitted to Pharm.D. program at School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran. He is currently senior Pharm. D. student having passed 213 credits successfully and will be defending his thesis soon. During his Pharm. D. curriculum, he has been involved in research activity focusing on Nanomedicine. The title of his thesis is "synthesis of targeted and controlled release hybrid polymersomes encapsulating SN38 *in vitro* and *in vivo*" which demonstrates preparation of MMP-2 responsive carrier being loaded with SN38 to deliver the desired drug molecule to colon adenocarcinoma. The goal of his study is to investigate how the intelligent carrier could increase therapeutic index of the encapsulated anti-cancer agents and secondly, to develop aptamer-targeted enzyme-responsive carrier which could act as a dually effective nanomedicine against cancer. Pouria has finished writing the manuscript from the results of his thesis project and it is under review by the Journal of Nanomedicine.
He has also been the co-author of four articles published in peer-reviewed journals. The total citations to his articles is 102 and his H-index is 4 according to Google Scholar. He has been awarded the "Researcher of The Year 2018" at the research week ceremony at Mashhad University of Medical Sciences, Mashhad, Iran as well as a 3rd place at the 22nd Iranian Pharmacy Students Seminar (IPSS). He also attended the well-recognized ISCOMS congress held by University of Groningen, Netherlands and was the session winner in Biomaterials category. He is very keen to continue his education towards a Ph.D. Degree in Nanomedicine.

Nicolas Ritt

PhD candidate
Nicolas started studying Biomedical Chemistry with a focus onOrganic Chemistry and Biochemsitry at Johannes Gutenberg-University in Mainz in 2011. During his studies he specialized on Macromolecular Chemistry and Biopolymers. He wrote his Bachelor thesis in the group of Professor Dr. Holger Frey and graduated in July 2014 as Bachelor of Science.
He subsequently started his master studies in Biomedical Chemistry and was accepted as exchange student at College of Engineering at the renowned Seoul National University in Seoul, South Korea. From August 2014 to March 2015 he worked and studied abroad in the group of Prof. Dr. Kookheon Char to further deepen his knowledge in Macromolecular Chemistry.
After he returned to Johannes Gutenberg University, he continued his master studies and in 2016 Nicolas wrote his master thesis with the title "Difunktionelle Triblock Copolymere als Transfektionsa-

gentien" at the group of Professor Dr. Rudolf Zentel and graduated as Master of Science in February 2017.
Following his graduation, Nicolas started his PhD studies at the group of Professor Zentel in May 2017. His research interests focus on the synthesis of multifunctional block-copolymers via RAFT-polymerization and the synthesis and characterization of well defined polyplexes as innovative transfection agents.
Currently he is associated in the CRC 1066: Nanodimensional polymer therapeutics for tumor therapy.

Silvia Lucia Rizzelli

PhD candidate
Silvia started studying Biomedical Chemistry with a focus on Organic Chemistry and Biochemsitry at the Johannes Gutenberg-University of Mainz in autumn 2011. During her studies she specialized on Analytical Chemistry and Macromolecular Chemistry. She wrote her Bachelor thesis in the group of Professor Dr. Rudolf Zentel in the field of Material Science. From October 2014 to March 2015 she spent a research semster at the University of Sheffield in England. There she worked in the Group of Prof. Dr. Steven P. Armes on the topic of non aqueous pickeling emulsions. After she returned to Mainz, she graduated in September 2015 as Bachelor of Science.
She subsequently started her master studies in Biomedical Chemistry specializing in Biophysical Chemistry and Bioanorganic Chemistry.
Silvia wrote her master thesis at the group of Professor Dr. Rudolf Zentel with the title "P(HPMA) based Transfection agents and graduated as Master of Science in September 2017.
Following her graduation Silvia started her PhD studies at the group of Professor Zentel in September 2017. Her research interests focuses on the synthesis of multifunctional block-copolymers via RAFT-polymerization and the synthesis and characterization of well defined nanoparticular structures for nanomedical application.
Currently she is associated in the CRC 1066: Nanodimensional polymer therapeutics for tumor therapy.

Mohammad Mahdi Sabahi

I am Mohammad Mahdi Sabahi, 6th year medical student at Hamedan University of Medical Sciences. I'm learning statistical analysis, research methodology, and scientific writing by taking a second degree as MPH. In the past several years, my research has largely remained focused on neurologic disorder, which yielded several publications.
I am determined to continue a residency in neurosurgery upon finishing my med school on 2021 and I have already started empowering myself by engaging in research and clinical training programs and I'll be doing my neurosurgery internship at Medical University of Vienna on March 2020.
As you see in my curriculum vitae and my experiences, I am committed to giving my best to any situation, and I'm extremely coordinated, goal-directed and I have excellent teamwork, team management and conflict resolution according to my colleagues. Also, I'm fluent in English and Persian, and I have a good knowledge of Arabic and Turkish, moderate knowledge of German and some knowledge of French.
In an attempt to develop skills in neurosurgery research, I have embarked my research journey by engaging in two original studies regarding immunotherapy of glioblastoma and spinal surgery in the Brain and Spinal Cord Injury Research Center. Research into Neurosurgery, Neurology and Neurosciences are of particular interest to me, as is my aspiration to work as a neurosurgeon in the future. I have often received positive feedback from my supervisors at different university hospitals of the Hamedan University of Medical Sciences on my clinical skills in patient assessment and I always look forward to receive constructive feedback on my progression. Following is my 5 recent publications:

RECENT PUBLICATIONS

- https://precisionnanomedicine.com/article/10592
- https://www.futuremedicine.com/doi/abs/10.2217/fvl-2019-0046
- https://www.ncbi.nlm.nih.gov/pubmed/31378723
- https://www.ncbi.nlm.nih.gov/pubmed/30447146
- https://www.ncbi.nlm.nih.gov/pubmed/31193574

Arunsajee Sae-be

Ph.D. student in Pharmaceutics (2nd year), Department of Pharmacy, Faculty of Pharmacy, Mahidol University, Bangkok, Thailand, 10400
T +66 98 015 4159 E-Mail: Arunsajee.s@gmail.com

Miss Arunsajee Sae-be is a Ph.D. student in Pharmaceutics (2nd year), Department of Pharmacy, Mahidol University. She is interested in nanomedicines, nanomaterials, cancer targeted drug delivery, cancer theranostics and tissue engineering. Her main research focuses on the development of 3D-liver spheroids and theranostics for liver cancer treatment.She studied in a pharmacy program and received the Bachelor degree in Pharmaceutical Science from Srinakharinwirot University, Thailand from 2010 to 2016. Her senior project associated with antibacterial and antifungal activities of essential oils which were entitled "Anti-Trichophyton mentagrophytes and anti-Staphylococcus aureus activities of essential oils from Zingiberaceae and Rutaceae families". After she graduated from Srinakharinwirot University, she served as a regulatory affairs pharmacist to prepare the registration dossier of new generic and generic drugs as well as inspected other activities to ensure that all activities were in compliance with applicable regulations at Siam Bheasach Co, Ltd from 2016-2018. Furthermore, she participated in the ASEAN regulation meeting.
In 2018, she has studied the Doctoral degree in Pharmaceutics at Mahidol University, Thailand and received the Royal Golden Jubilee Scholarship to research cancer theranostics. She started to fabricate 3D-liver spheroids. She participated in the International Conference and Exhibition on Pharmaceutical Sciences and Technology, Thailand 2019 (PST2019) as a poster presenter. The poster was entitled "The development of 3D-spheroid model for anticancer drug screening". She received the silver prize of the best poster award.

Amir Sh. Saljooghi

Amir Sh. Saljooghi was born and raised in Iran, Kerman. He received his B.Sc. in chemistry from Tehran University in 2003 and afterward subsequently completed his Ms.C. and Ph.D. degrees in Bio-Inorganic chemistry in 2010 with Prof. S. J. Fatemi. The thesis title was "Clinical evaluation of Deferasirox, Desferrioxamine and Deferiprone as single and combined for removal of Cd(II) and Tl(III) ions in rats as a biological model ".

Afterward he joined the Department of Chemistry at Ferdowsi University of Mashhad (FUM), Mashhad, Iran in 2010, where he is now Associate Professor of Bio-inorganic Chemistry, and Director of the Medicinal Inorganic Chemistry Group. His scientific interests are firmly based in the areas of medicinal inorganic chemistry and coordination chemistry; he has been involved over 10 years with nano bio-inorganic chemistry systems, metal ion decorporation, and the role of metal ions in chelation therapy, as well as chemotherapeutic metal complexes and ligands. Amir Sh. Saljooghi has published more than 40 research papers, and 6 books (in Persian) related to Inorganic, Bio-inorganic, and physical inorganic chemistry chemistry.
Recently, he and his research team focused on Theranostics platforms for cancer therapy, especially the role of Metal Organic Frameworks (MOFs), Mesoporous silica nanoparticles (MSNs), Polyoxometalates (POMs), and etc. in targeted drug delivery.

Maximilian Scherger

PhD
Maximilian Scherger studied biomedical chemistry at the Johannes Gutenberg University, Mainz (Germany), and received his master's degree in 2018. He is currently a PhD student in the group of Dr. Lutz Nuhn at the Max Planck Institute for Polymer Research and a member of the Integrated Research Training Group within the Collaborative Research Center 1066, Mainz (CRC 1066). He received a doctoral scholarship of Fonds der Chemischen Industrie and his PhD topic is about responsive carrier systems for the delivery of small molecular immunomodulators.

RECENT PUBLICATIONS

- "Multiarm Polycarbonate Star Polymers with a Hyperbranched Polyether Core from CO 2 and Common Epoxides" M. Scharfenberg, J. Seiwert, M. Scherger, J. Preis, M. Susewind, H. Frey, Macromolecules 2017, 50, 6577–6585.

Sascha Schmitt

Ph.D-Student
Sascha Schmitt studied chemistry at the Johannes-Gutenberg University of Mainz (Germany). He receives his master degree in 2018 concentrating on simultaneous dynamic and static light scattering on PEG based hydrogels. Currently he is working on his Ph.D. under the supervision of Prof. Dr. H.-J. Butt and Dr. Kaloian Koynov at the Max Planck Institute for Polymer Research. His research focuses on fluorescence correlation spectroscopy on polymer based systems for drug delivery.

Inbar Shreiber-Livne

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I am a Ph.D student in The Norman Seiden Multidisciplinary Graduate program from the Nanotechnology & Nanoscience institute, under the supervision of Ass. Prof. David Meiri (the Laboratory of Cancer Biology and Cannabinoid Research) and Prof. Alejandro Sosnik (Laboratory of Pharmaceutical Nanomaterial Science). My Research fields in this doctorate study include, chemistry, physics and engineering of polymers, nanoparticles, nanomedicine and cannnabinoids. My research topic is "Cannabinoid-Containing Polymers as Novel Nano Delivery Platforms".
In 2016 I completed a M.Sc. degree from the Materials Engineering department in the Technion, Israel, for which I received a full scholarship. This work involved several disciplines, including chemistry, physics and engineering of polymers, porous and responsive polymers, hydrogels and crosslinking mechanisms. The research title was: "Polymers: PolyHIPEs: Self-crosslinked, high porosity hydrogels through emulsion templating".
I completed in 2014 my B.Sc from the Chemical Engineering department in the Technion, Israel. In 2012 I received the Dean's excellence award for graduate students. My senior year research project was performed under the supervision of Prof. Moshe Narkis from the Chemical Engineering department in the Technion. This work dealt with the development of supercapacitors and for which I received the Seiden Prize for multidisciplinary undergraduate student's project (2013) in the area of Nano-electronics. Following completion of this research project I continued to work as a research assistant in Prof. Narkis' lab during the years 2013-2014.
I was a teaching assistant in the faculties of Biology and at the Department of Materials Science and Engineering. The courses included Biology 1, Introduction to biochemistry and enzymology and Introduction to Materials Engineering.

Jenny Schunke

PhD student
In 2017, I received my Bachelor's degree in molecular biology from the Johannes Gutenberg-University in Mainz. Afterwards, I completed my Master's degree in Biomedicine and focused on the investigation of therapy-resistance developing in chemotherapeutically treated penis carcinoma cell lines. Since October 2019, I am a PhD student of the AG Mailänder at the University Medical Center (Department of Dermatology) and the MPI for Polymer Research in Mainz. In my current PhD project, I am working on the targeting of dendritic cells and the antigen-specific activation of T cells using nanoparticles, including adjuvants and antigens, *in vitro* and *in vivo* in different melanoma models. The Research Training Group (CRC 1066), of which I have been a member since January 2020, connects young researchers working on nanodimensional polymeric therapeutics for tumor therapy and gives me the opportunity to exchange ideas and experiences in an interdisciplinary environment.

Yang Shi

Dr. Yang Shi works as a Group Leader at RWTH Aachen University Clinic in Germany since 2016. Prior to that, he was appointed Associate Professor at South China University of Technology in 2015 and obtained his PhD degree from Utrecht University, the Netherlands, with Prof. Wim Hennink in 2014. He has published >35 articles (total citations>1000, H index 19) in peer-reviewed journals including Chemical Society Reviews, Nature Nanotechnology, ACS Nano, Advanced Healthcare Materials, and Biomacromolecules. In 2016, he was recognized as "Rising Star" by the 4th Symposium on Innovative Polymers for Controlled Delivery. In 2019, he was awarded with the Europe Award by International Pharma Sciences Foundation/Rottendorf Stiftung. He is currently a Guest Editor for Theranostics and serves as a reviewer for journals including JACS, ACS Nano, Nano Letters, and Angewandte Chemie. His group focuses on nanomedicines and macroscale biomaterials for cancer chemotherapy and immunotherapy.

RECENT PUBLICATIONS

(*corresponding author, #shared first author, total 35 publications, H index=19)

- Sun Q, Barz M, De Geest BG, Diken M, Hennink WE, Kiessling F, Lammers T*, and Shi Y*. Nanomedicine and macroscale materials in immuno-oncology. Chemical Society Review. 2019, 48, 351–381.
- van der Meel R#, Sulheim E#, Shi Y#, Kiessling F, Mulder WJM, Lammers T*. Smart cancer nanomedicine. Nature Nanotechnology, 2019, 14, 1007–1017.
- Shi Y, van der Meel R, Theek B, Oude Blenke E, Pieters EH, Fens MH, Ehling J, Schiffelers RM, Storm G, van Nostrum CF, Lammers T, Hennink WE*. Complete regression of xenograft tumors upon targeted delivery of paclitaxel via Π-Π stacking stabilized polymeric micelles. ACS Nano, 2015, 9, 3740–3752.
- Shi Y, Elkhabaz A, Yengej FA, van den Dikkenberg J, Hennink WE, van Nostrum CF*. Π-Π stacking induced enhanced molecular solubilization, singlet oxygen production and retention of a photosensitizer loaded in thermosensitive polymeric micelles. Advanced Healthcare Materials, 2014, 3, 2023–2031.
- Shi Y, van Steenbergen MJ, Teunissen EA, Novo L, Gradmann S, Baldus M, van Nostrum CF, Hennink WE*. Π-Π stacking increases the stability and loading capacity of thermosensitive polymeric micelles for chemotherapeutic drugs. Biomacromolecules, 2013, 14, 1826–1837.

Sara Shokooh Saremi

Born in 1989, Sara received her Pharm.D Degree (Professional Doctorate in Pharmacy - in Iran is adapted from the US education system and is not equivalent to PhD) from Mashhad University of Medical Sciences (Mashhad, Iran) in 2015. Following that, she became a PhD candidate of pharmaceutical nanotechnology. During her PhD courses, she was the top student and she achieved the highest degree among her classmates in the board exam which is the qualification exam held by the university.
She is highly interested in drug delivery systems, especially liposome bilayers, and their utilization in overcoming problems such as active compound's poor absorption or their low bioavailability.
As her very first experience in the field of drug delivery, she started to work on encapsulating a hydrophilic antigen in liposomes; at the same time, setting up a method to isolate dendritic cells from mice bone marrow. She sat up the above-mentioned method for the first time in Iran, successfully.
After few years of experience, as her PhD thesis, she is now working on a novel liposome formulation for encapsulating a tyrosine kinase inhibitor named "Lapatinib" and therefore, increasing its delivery to tumor cells while decreasing the usual administered dose and its side effects. She also works on several other projects and helps other students to accomplish their work.
She would like to assess the effects of liposome formulation of the encapsulated drugs *in vitro* and *in vivo* and compare the results with the active compound itself. In addition, she would like working toward gaining improved knowledge about the tumor microenvironment in different types of cancers, especially breast cancer and utilizing the information in targeting to the tumor site and improving outcomes.

Andrei P. Sommer

Dr. Sommer is an independent researcher and consultant. He received his diploma in physics (1992) and his PhD in physical chemistry (1998) both Philipps University Marburg, Germany. He specialized in nanomedicine, biomedical engineering, photomedicine and materials science at Ulm University, Germany, where he worked until 2016 as senior scientist. He is a visiting professor at the faculty of science of ISRA University, Jordan.

MAJOR ACHIEVEMENS IN SCIENCE AND MEDICINE

- Discovery of the principle of skin aging and rejuvenation method via irradiation with 670 nm light.
- Discovery of the principle to reduce intra- and extracellular Amyloid-β via 670 nm light and EGCG.
- Discovery of the principle of a biological photo field-effect transistor operating in mitochondria.
- Discovery of the relationship between mitochondrial spectral sensitivity and the solar spectrum.
- Discovery of treatment parameters to prevent outbreak of herpes labialis using red laser light.
- Design of method to refill ATP reservoirs in oxidatively stressed cells and tissues via R-NIR light.
- Design of III. generation Petri dish based on nanodiamond for better cell performance/vitality.
- Design of method to remove particulate matter from air in polluted cities via plants and water.
- Design of nanodiamond-based biosensors for detection of organic compounds on Mars.
- Design of and antibacterial and biocompatible metallic alloys for extended space flights.

PUBLICATIONS

More than 100 peer reviewed papers (95% first author)

Monika Stahl

The presenting author studied pharmacy at the Friedrich-Alexander-University Erlangen-Nürnberg, Germany from 2012-2017. After practical training in pharmacy and industry, she joined the group of Achim Goepferich, Department of Pharmaceutical Technology, University Regensburg in 2018 as a Ph.D. student.

Judith Stickdorn

PhD student

Judith Stickdorn studied biomedical chemistry at the Johannes Gutenberg University, Mainz (Germany), and received her master's degree in 2018. During her studies she could gain first research experience by spending 7 months in the laboratories of Eduardo Fernández-Megía at the Centro Singular de Investigación en Química Biológica y Materiales Moleculares in Santiago de Compostela (Spain). She is currently a PhD student in the group of Dr. Lutz Nuhn at the Max Planck Institute for Polymer Research and a member of the Integrated Research Training Group within the Collaborative Research Center 1066, Mainz (CRC1066). Her PhD topic is about nanogel-based vaccines for cancer immunotherapy.

PUBLICATIONS

- J. Stickdorn, L. Nuhn, Reactive-ester derived polymer nanogels for cancer immunotherapy, Eur. Polym. J. 124 (2020) 109481.

Fabian H.L Starsich

Fabian Starsich (born Sep. 22, 1990, in Vienna, Austria) received his MSc. in Process Engineer-ing from ETH Zurich, Switzerland in 2014. He then joined the Particle Technology Laboratory at ETH and received his Ph.D. in 2018 under the supervision of Prof. Dr. Sotiris E. Pratsinis. The title of his thesis was "Multifunctional nanoparticles for targeted theranostics". He developed magnetic nanoparticles for thermal therapy1 and as contrast agents for magnetic resonance imaging[2,3], as well as fluorescent nanoparticles for imaging in the near-infrared[4].

In the following, he worked for 1.5 years for the multi-award spin-off Haelixa AG on nano-particle-based tracers for the food industry. He then found his way back to academia and joined the Nanoparticle Systems Engineering Laboratory of Prof. Dr. Inge Herrmann at ETH Zurich and Swiss Federal Laboratories for Materials Science and Technology as a Postdoctoral Research As-sociate. His research now focuses on the development of novel nanosystems for biomedicine for diagnostic and therapeutic clinical applications. Specifically, he tries to understand the im-portance of agglomeration and resulting nanoparticle interaction phenomena concerning applica-tion efficiencies (i.e. targeting, therapeutic effects, diagnostic capabilities).[5] To this end, he works in close collaboration with the University Hospital Zurich.

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- F. H. L. Starsich, C. Eberhardt, K. Keevend, A. Boss, A. M. Hirt, I. K. Herrmann and S. E. Pratsinis, ACS Appl. Bio Mater., 2018, 1, 783-791.
- F. H. L. Starsich, P. Gschwend, A. Sergeyev, R. Grange and S. E. Pratsinis, Chem. Mater., 2017, 29, 8158–8166.
- F. H. L. Starsich, I. K. Herrmann and S. E. Pratsinis, Annu. Rev. Chem. Biomol. Eng., 2019, 10, 155–174.

Mohammad Taleb

Ph.D. student

Mohammad is a Ph.D student at National Center for Nanoscience and Technology, China. He received his B.S. degree from Shahid Beheshti University (Tehran, Iran) in 2015, followed by an M.S. degree from University of Chinese Academy of Sciences (NCNST) in 2017. He accepted in Ph.D qualification exam from NCNST, Chinese Academy of Sciences immedietly after his M.S. by CAS-TWAS felowship. His main interests are design of bio-inspired materials to overcome the barriers in tumor therapy and nanobiomedicine. He would like to working toward the controlling the properties of multi-functional nanoparticles in order to allow specific targeting and regulation of tumor cells and their microenvironment (vessel normalization, immune system regulation, ...). His research interests include targeting and regulation of tumors and their microenvironment mediated by intelligent functional nanomaterials for diagnostic and therapeutic applications, especially Breast cancers.

RECENT PUBLICATION:

- [co-author] Targeting delivery of platelets inhibitor to prevent tumor metastasis, 2019 Bioconjugate Chemistry. [IF 4.349]
- [first-author] Dopamine Delivery via pH-Sensitive Nanoparticles for Tumor Blood Vessel Normalization and An Improved Effect of Cancer Chemo-therapeutic Drugs, 2019 Advanced Healthcare Materials. [IF 6.27]
- [co-author] Sustained release of sodium deoxycholate from PLGA–PEG–PLGA thermosensitive polymer, 2018 Artificial Cells, Nanomedicine and Biotechnology. [IF 4.462]
- [co-author] Surface Functionalization of Polymeric Nanoparticles with Umbilical Cord-Derived Mesenchymal Stem Cell Membrane for Tumor-Targeted Therapy, 2018 ACS Applied Materials & Interfaces. [IF 8.456]
- [co-author] Delivery of small interfering RNA against Nogo-B receptor via tumor-acidity responsive nanoparticles for tumor vessel normalization and metastasis suppression, 2018 Biomaterials. [IF 10.273]

IN PREPARATION:

- [co-author] Platelets and their role in cancer metastasis, from a saint to a demon, 2019 Science China Chemistry. [IF 6.085]

Dennis Unthan

Doctoral candidate

I completed my a-levels in 2010. After doing community service in a psychiatric clinic I started studying chemisty at the Johannes Gutenberg University of Mainz in the winter semester 2011/2012. My bachelor's thesis was carried out at the Max Planck Institute for Polymer Research in the research group of Frederick Wurm in 2016. After doing an intership at the Institute of Molecular Sciences in Valencia I joined the group of Matthias Barz in 2018 for my Master's thesis. I graduated in March 2019 (Master of Science) and am a doctoral candidate since august 2019. My research focuses on the synthesis and characterization of novel polysarcosine-based lipopolymers, their formylation and application as siRNA-delivery systems.

RECENT PUBLICATIONS

- C.Muhl, D. Unthan, M. Conrad, M.Barz, Synthesis and characterization of bisalkylated polysarcosine-based lipopolymers, European Polymer Journal 2019, 120, 109223

Moritz Urschbach

PhD Student

Moritz took up his studies in Biomedical Chemistry at the Johannes Gutenberg-University Mainz in 2013 and obtained his bachelor degree in 2016. He continued his studies in Mainz to strengthen his knowledge at the interface of chemistry and biomedicine. During internships in the groups of Prof. H. Frey and Prof F. Rösch, Moritz gained insights into polymer chemistry and contrast agents for fMRT. Thereafter, he joined the group of Prof. Pol Besenius to work on his master thesis about the synthesis of TA-MUC1 functionalized peptide amphiphiles for the incorporation in supramolecular polymers. The thesis was awarded with the Adolf Todt-prize for excellent scientific work in 2018. He subsequently started his doctoral studies in Mainz under the supervision of Prof. Besenius where he is curretly working on the development of self-assembling, glycopeptide decorated structures to build up supramolecular antitumor vaccines. Moritz is also part of the research training group of the Collaborative Research Center "Nanodimensional polymer therapeutics for tumor therapy" (SFB 1066) which deals with the development of new multifunctional nanoparticle-systems for tumor immunotherapy.

Francisco Martin Vazquez-Meza

Francisco Martin Vazquez-Meza has a Bachelor's degree on clinical biologist chemist, he is currently doing his masters on "Health Sciences" in The University of Sonora (UNISON) in Mexico. He is developing the thesis titled "Characterization of MDA-MB-231 and Mexican Breast Cancer Cells by Raman Microespectroscopy and Atomic Force Microscopy", under the co-supervision of Dr. Aracely Angulo Molina & Dr. Monica A. Acosta Elías. His project is part of the collaboration between University of Sonora and University of Applied Sciences and Arts-HLS Northwestern Switzerland (FHNW). Dr Uwe Pieles from FHNW and Dr. Carlos Arturo Velazquez Contreras from UNISON also are participating as mentors.

RECENT PUBLICATIONS OF RESEARCH GROUP:

- Acosta-Elías, M. A., Burgara-Estrella, A. J., Sarabia-Sainz, J. A. I., Silva-Campa, E., Angulo-Molina, A., Melendrez R. & Pedroza-Montero, M. 2017. Nano alterations of membrane structure on both γ-irradiated and stored human erythrocytes. International Journal of Radiation Biology. p. 1306-1311 6 p.
- Aguilera, G., Berry, C. C., West, R., Angulo-Molina, A., Arias-Carrión, Ó. & Méndez-Rojas, M. Á., 2019, Carboxymethyl cellulose coated magnetic nanoparticles transport across a human lung microvascular endothelial cell model of the blood–brain barrier. En: Nanoscale Adv.1, 671-685.
- Vazquez Meza F.M. 2018. "Evaluation of apoptosis and necrosis with Raman Spectroscopy and Atomic Force Microscopy". University of Sonora. Hermosillo, Sonora. México.
- Vazquez Meza F.M., Angulo Molina A, Acosta Elías M.A, Velázquez Contreras C. A., Pieles, U. Memorias. XXXVII Muestra Estudiantil Edition: Dr. Mauro E. Valencia Juillerat. Universidad of Sonora. Hermosillo, Sonora. México. In: http://www.qb.uson.mx/wp-content/uploads/2020/01/Libro-academia-nutricion.pdf

Chrysovalantis Voutouri

PhD

Dr. Voutouri earned a PhD degree in Mechanical and Biomedical Engineering from the University of Cyprus where he studied the mechanics of solid tumors and how mechanical forces affect the delivery and efficacy of chemotherapy and nanomedicine. Since March 2018, he is a Postdoctoral fellow at the Cancer Biophysics Laboratory at the University of Cyprus and an Instructor at the University of Cyprus and European University Cyprus.

Dr. Voutouri current research interests involve the modulation of the mechanical Tumor Microenvironment to improve tumor perfusion, the delivery of nanomedicines and immunostimulations. He also performs a mixture of preclinical studies and mathematical model simulations to identify optimal treatment strategies based on the combined use of nanomedicines and immunotherapeutic drugs.

Dr. Voutouri has participated in research projects funded by the Research Promotion Foundation of Cyprus, New Strategic Infrastructure Units – Young Scientists, (CancerNanoMED), European Research Council Proof of Concept (ERC-2018-PoC-838414 CancerFingerPrints), European Research Council 336839-ReEngineeringCancer and the Research Promotion Foundation of Cyprus. In the last six years, he has co-authored 21 scientific articles in peer-review journals (h-index=10, >337 citations), 7 of which in journals with impact factor >5. His publication record includes articles in PNAS, ACS Nano, Neoplasia,Theranostics and Journal of Control Release. He also has 5 papers and/or abstracts in referred conference proceedings and has given several podium presentations in International conferences. He is collaborating with Dr. Rakesh K. Jain, Professor at Harvard Medical School in Boston, MA, USA and Dr. James W. Baish, Professor of Biomedical Engineering at Bucknell University, USA.

RECENT PUBLICATIONS

- Panagi M., C. Voutouri, F. Mpekris, P. Papageorgis, M.R. Martin, J.D. Martin, C. Polydorou, M. Kojima, G. Ishii, K. Kataoka and H. Cabral and T. Stylianopoulos. TGF-β inhibition combined with Doxil normalizes the metastasis microenvironment towards antitumor immunity. Theranostics.
- Mpekris F., C. Voutouri, J.W. Baish, D.G. Duda, L.L. Munn, T. Stylianopoulos, R.K. Jain. Combining microenvironment normalization strategies to improve cancer immunotherapy. PNAS
- Voutouri C., N.D. Kirkpatrick, E. Chung, F. Mpekris, J.W. Baish, L.L. Munn, D. Fukumura, T. Stylianopoulos and R.K. Jain. Dynamics of vessel cooption in brain tumors revealed by integrative experimental and mathematical modeling studies. PNAS [DOI: 10.1073/pnas.1818322116].
- Martin J.D., M. Panagi, C. Wang, T.T. Khan, M.R. Martin, C. Voutouri, K. Toh, P. Papageorgis, F. Mpekris, C. Polydorou, G. Ishii, S. Takahashi, N. Gotohda, T. Suzuki, M.E. Wilhelm, V.A. Melo, S. Quader, J. Norimatsu, R.M. Lanning, M. Kojima, M.D. Stuber, T. Stylianopoulos, H. Cabral, and K. Kataoka and H. Cabra. The antiemetic dexamethasone increases nanocarrier delivery by normalizing the tumor microenvironment. ACS Nano
- Voutouri C. and T. Stylianopoulos. Accumulation of mechanical forces in tumors is related to hyaluronan content and tissue stiffness. PLoS One 13(3): e0193801 [DOI: 10.1371/journal.pone.0193801].

Adam Alexander Walters

PhD
Research Fellow, School of Pharmaceutical and Cancer Sciences, Kings College London.
Adam presently works as a Maplethorpe research fellow under the mentorship of Professor Khuloud Al-Jamal's at King's College London. In this position his work is focussed on the development of rationally designed nano formulations for the delivery of immunologically active small molecules and biologicals. He has an interest in the use of nucleic acids for either gene delivery, gene knock down or immuno-stimulation, primarily in cancer models. A key component of Adam's work is the identification of synergistic modalities for co formulation in nano systems.
Prior to this engagement Adam had a 5-year stint as a Research Associate at the Jenner Institute, University of Oxford, working with Dr Anita Milicic and Prof. Adrian Hill in investigating the controlled delivery of antigen for induction of spatially and temporally restricted immune responses for malaria vaccination.
Throughout his career, though disease models and platforms have changed, the consistent theme of Adam's research has been the development of novel formulation with special focus on the interaction of biomaterials with the immune system.

RECENT PUBLICATIONS:

- Hassan, H., Diebold, S. Smyth, L., Walters, A., Lombardi, G. and Al-Jamal K., T. 'Application of carbon nanotubes in cancer vaccines: achievements, challenges and chances' 2019 Journal of Controlled Release
- Faruqu, F., N., Tzu-Wen Wang, J., Xu, L., McNickle, L., Ming-Yiu Chong, E., Walters, A., Gurney, M., Clayton, A., Smyth, L., A., Hider, R., Sosabowski, J. and Al-Jamal K., T. 'Membrane radiolabelling of exosomes for comparative biodistribution analysis in immunocompetent and immunodeficient mice – a novel and universal approach' 2018 Theranostics
- Mei, K-C., Ghazaryan, A., Teoh, E., Z., Summers, H., D., Li, Y., Ballesteros, B., Piasecka, J., Walters, A., Hider, R., C., Mailänder, V. and Al-Jamal, K., T. 'Protein-Corona-by-Design in 2D: A Reliable Platform to Decode Bio–Nano Interactions for the Next-Generation Quality-by-Design Nanomedicines' 2018 Advanced Materials
- Thompson, C., Lourenco, J., Obolski, U., Walters, A., Edmans, M., Palmer, D., Kooblall, K., Carnell, G., O'Connor, D., Bowden, T., Pybus, O., Pollard, A., Temperton, N., Lambe, T., Gilbert, S., and Gupta, S. 'A naturally protective epitope of limited variability as influenza vaccine target' 2018 Nature Communications
- Gola, A., Silman, D., Walters, A., Sridhar, S., Uderhardt, S., Salman, A., M., Halbroth, B., R., Bellamy, D., Bowyer, G., Powlson, J., Baker, M., Venkatraman, N., Poulton, I., Berrie, E., Roberts, R., Lawrie, A., M., Angus, B., Khan, S., M., Janse, C., J., Ewer, K., J., Germain, R., N., Spencer, A., J. and Hill, A., V., S. 'Prime and Target Immunization Protects Against Liver-Stage Malaria in Mice' 2018 Science Translational Medicine

Alina Zenych

Alina Zenych received her B.Sc. and M.Sc. degrees from the National Technical University of Ukraine "Kyiv Polytechnic Institute" in Medical Instruments and Systems. During 2013 - 2014, she performed a one-year Erasmus Mundus Action 2 exchange program at the University of Groningen in the Netherlands. In 2016, she obtained an M.Sc. from Paris Descartes University in France in Biomedical Engineering (Molecular and Cellular Biotherapies). Currently, as a recipient of the INSPIRE project fellowship within Marie Skłodowska-Curie grant, Alina is a Ph.D. candidate in nanomedicine and works on molecular diagnostics and targeted therapy of thrombotic diseases using polysaccharide-based nanocarriers in the Laboratory for Vascular Translational Science - INSERM U1148, Sorbonne Paris Nord University. She published as a co-author a research article in a peer-reviewed journal Biomaterials (10.1016/j.biomaterials.2018.12.023) and submitted a review article to Biomaterials (under revision), both dedicated to nanomedicine in thrombotic pathologies.

Hana Zivotska

Hana Zivotska got her Bachelor and a Master's degree in Chemistry and Food Technology at Mendel University in Brno, Czech Republic. The aim of these works was to evaluate changes in the content of milk during the year and its impact on chosen technological properties and effect of season on chosen quality parameters of milk via statistical evaluation of data.
Hana is currently in the second year of her PhD studies in the Research Group for Molecular Biology and Nanomedicine at the Department of Chemistry and Biochemistry, Mendel University in Brno, Czech Republic. Her main focus is on biomimetic peptide-based ligands for active targeting of cancer cells. The main goal of this research is to find suitable ligands with a high-targeting efficiency that lead to increased efficiency of anti-cancer treatment. During her study, she also spent one week at University College Dublin, Ireland by joining the Flow Cytometry Summer School program. She also attended conferences in Czech republic (MendelNet2019 in Brno and BOD 2019 in Brno).