

Prof. Dr. Marcelo Calderón

Assistant Professor in Organic and Macromolecular Chemistry

Born April 17, 1979 in San Luis, Argentina

Nationality: Argentinean/German

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CURRENT POSITION

1. **Since 09.2018. Ikerbasque Research Professor for Biomedical Application.** Basque Center for Macromolecular Design and Engineering, POLYMAT, San Sebastian, Spain
2. **05.2013-08.2018. Assistant Professor for Organic and Macromolecular Chemistry.** Department of Chemistry, Freie Universität Berlin, Germany. *Multifunctional polymers for biomedical applications.*
3. **12.2012-11.2018. BMBF NanoMatFutur Group Leader.** In the frame of the program 'Werkstoffinnovationen für Industrie und Gesellschaft – WING'. *ThermoNanogelee: Neuartige thermoresponsive Nanogelee für den zielgerichteten Wirkstofftransport und die kontrollierte Freisetzung von Zytostatika und/oder fluoreszierenden Substanzen.*
4. **10.2013-07.2018. Project Leader at the Collaborative Research Center 1112 'Nanocarriers: Architecture, Transport, and Topical Application of Drugs for Therapeutic Use'.** *Development of pH-cleavable and thermoresponsive nanogels as nanocarriers for the transdermal triggered release of drugs.*

PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND

1. **Since 2013. Assistant Professor:** Department of Chemistry, Freie Universität Berlin, Germany. *Multifunctional polymers for biomedical applications.*
2. **2013-2017. Project Leader at the Helmholtz Virtual Institute 'Multifunctional Materials for Medicine'.** *Influence of the protein adsorption on thermoresponsive polyether-based nanogel properties.*
3. **2010-2013. Junior Group Leader.** Department of Chemistry, Freie Universität Berlin, Germany (Research advisor: Prof. Dr. Rainer Haag). *Development of smart nanocarrier systems for biomedical applications.*
4. **2007-2010. Post-Doctoral Fellow.** Department of Chemistry, Freie Universität Berlin, Germany (Research advisor: Prof. Dr. Rainer Haag). *Cleavable nanoparticles as intelligent transport system for biomedical application. From laboratory to clinic.*
5. **2003-2007. Doctoral Student.** Department of Organic Chemistry, Faculty of Chemical Sciences. National University of Cordoba, Argentina (research advisor: Prof. Dr. Miriam Strumia). *Synthesis and characterization of amphiphilic polymers by dendronization.*
6. **1997-2003. Bachelor in Chemistry Student.** Department of Organic Chemistry, Faculty of Chemical Sciences. National University of Cordoba, Argentina (research advisor: Prof. Dr. Miriam Strumia). *Synthesis, characterization and studies of matrices to applied in the construction of biosensor*

AWARDS AND HONORS

1. **2017.** Emerging Investigator (Journal of Material Chemistry B, Royal Society of Chemistry).
2. **2015.** Emerging Investigator (Chemical Communications, Royal Society of Chemistry).

3. **2011.** Cesar Milstein Fellowship (MINCyT, Argentina).
4. **2010-2016.** Junior Group Leader funding from the “Nanoskalige Funktionsmaterialien (NanoScale)”, Freie Universität Berlin, Berlin.
5. **2010.** Arthur K. Doolittle Award (American Chemical Society, PMSE Division).
6. **2003-2008.** Doctoral Fellowship, Research Council of Argentina (CONICET).
7. **1998-2003.** Predoctoral Fellowship, YPF Foundation, Argentina.

REFEREERING AND EDITORIAL ACTIVITIES

1. Member of editorial board of the Journal of Nanopharmaceutics & Drug Delivery.
2. Peer reviewer of the following journals: Advanced Materials, Angewandte Chemie, Biomacromolecules, Bioorganic and Medicinal Chemistry, Chemical Society Reviews, Current Opinion on Biotechnology, Journal of Biomedical Nanotechnology, Journal of Material Chemistry B, Langmuir, Macromolecular Chemistry and Physics, Nanomedicine, New Journal of Chemistry, Tetrahedron, Acta Biomaterialia, Biomaterials, Chemical Communications, Colloidal and Interface Science, Journal of Luminescence, Macromolecular Rapid Communications, Macromolecular Bioscience, Molecular Pharmaceutics, Nanoscale, Progress in Polymer Science, ACS Applied Materials and Interfaces, Bilstein, RSC Biomaterial Science.
3. Guest editor of Royal Society of Chemistry - Nanoscale (2014). *Dendritic polymers for smart drug delivery applications*
4. Guest editor of Journal of Biomedical Nanotechnology (2014). *A special issue on polymer conjugate based nanotherapeutics*
5. Guest editor of Biotechnology Advances (2015). *Polymeric soft nanocarriers as smart drug delivery systems: State-of-the-art and future perspectives*
6. Guest editor of Polymers (2017). *Polymers for therapy and diagnostics*
7. Evaluation of projects of the: Comisión Nacional de Investigación Científica y Tecnológica – CONYICIT, Chile; Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET, Argentina; Royal Society Newton Advanced Fellowship, England; European Science Foundation; Deutsche Forschungsgemeinschaft (DFG), Germany; Bundesministerium für Bildung und Forschung (BMBF), Germany; Alexander von Humboldt Foundation, Germany.

SUCCESSFUL FUNDING APPLICATIONS

Since 2010 ten funded projects evolved from the group, with Prof. Calderón as principal investigator (PI). Total amount of acquired funding corresponds to 3,273,764 €.

1. **12.2012–11.2018. NanoMatFutur Grant from the Bundesministerium für Bildung und Forschung (BMBF)** – ‘ThermoNanogele: Neuartige thermoresponsive Nanogele für den zielgerichteten Wirkstofftransport und die kontrollierte Freisetzung von Zytostatika und/oder fluoreszierenden Substanzen.’ Amount: 2.634.137 € (+ 20% overheads).
2. **09.2016-11.2018. Einstein Foundation** - Magnetoplasmonic-Thermoresponsive Nanogel: A Smarter Theranostic Device. Amount: 197.118 €.
3. **10.2013–06.2017. Deutsche Forschungsgemeinschaft (DFG)** Collaborative Research Center 1112 - Nanocarriers: Architecture, Transport, and Topical Application of Drugs for Therapeutic Use. Working Group: ‘Development of pH-cleavable and thermoresponsive nanogels as nanocarriers for the transdermal triggered release of drugs.’ Amount: 224.160 € (+ 20% overheads).
4. **11.2013–10.2016. Helmholtz Virtual Institute** ‘Multifunctional Materials for Medicine’ – ‘Influence of the protein adsorption on thermoresponsive polyether-based nanogel properties.’ Amount: 75.000 €.
5. **10.2010–09.2011. Freie Universität Berlin, Focus Area NanoScale** – ‘Targeting of intracellular organelles mediated by dendritic polyglycerols.’ Amount: 30.000 €.
6. **01.2012–12.2012. Freie Universität Berlin, Focus Area NanoScale** – ‘Intracellular release kinetics and localization from macromolecular prodrugs.’ Amount: 30.000 €.

7. **05.2012-30.04.2014. Bundesministerium für Bildung und Forschung (BMBF)-project** (2012000247), Collaboration with Rainer Haag (Freie Universität Berlin) and with Universidad Nacional Cordoba, Argentina. Design of novel nanocarrier architectures for biomedical application. Sum: 27.024 € (+ 20% overheads).
8. **01.2014–12.2014. Freie Universität Berlin, Focus Area NanoScale** – ‘Development of dendronized interpenetrating polymer networks for biomedical applications.’ Amount: 30.000 €.
9. **03.2014–02.2015. Deutsche Forschungsgemeinschaft (DFG) Grant to Support the Initiation of International Collaboration (MINCyT Argentina).** ‘Development of environmentally-sensitive polymer nanoparticles.’ Amount: 11.325 € (+ 20% overheads).
10. **03.2015–02.2016. Freie Universität Berlin, Focus Area NanoScale** – ‘Design and synthesis of novel multifunctional mucoadhesive and mucopenetrating nanocarriers for the targeted delivery of microbicides in vaginal epithelium’ Amount: 15.000 €.

SUCCESSFUL FELLOWSHIP APPLICATIONS

1. **08.2012-07.2014. Marie Curie Postdoctoral Fellowship.** Dr. Ana Sousa-Herves. Co-supervised with Prof. Rainer Haag. ‘Environmental-responsive nanogels for biomedical applications’.
2. **07.2013-09.2015. Georg Forster Research Fellowship for Postdoctoral Researchers,** Alexander von Humboldt-Foundation. Dr. Maria Molina. Co-supervised with Prof. Rainer Haag. ‘Development of nanogels for controlled drug delivery driven by near infrared light’.
3. **09.2013-02.2014. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** Dr. Alberto Sanz de León. ‘Biofunctional platforms fabricated by nanogels immobilization onto honeycomb structured films’.
4. **10.2014-09.2016. Dahlem International Network Postdocs Fellow.** Dr. Julian Bergueiro. ‘Gold Nanorod@Elastine Hybrid Thermoresponsive Nanogels for Combined Hyperthermia and Chemotherapy’.
5. **02.2014. Connect Programm Alexander von Humboldt.** Prof. Amedea Seabra. ‘Development of NO release polymeric materials’.
6. **10.2014. Connect Programm Alexander von Humboldt.** Jr.-Prof. Marcelo Calderón. ‘Development of NO release polymeric materials’.
7. **02.2014-04.2014. Alumni Program Freie Universität Berlin.** M.Sc. Khushbu R. Zope, ‘Design and Evaluation of Nanogel-Transferrin-Iron Oxide for Targeting, Isolation, and Detection of Circulating Tumor Cells’.
8. **04.2015-06.2015. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** Lic. Catalina Biglioni. ‘Synthesis of magnetic thermoresponsive nanogels using ultrasonication for biomedical applications’.
9. **06.2015-10.2015. Collaborative Research Center (SFB1112) Fellowship for International Students.** Lic. Catalina Biglioni. ‘Synthesis and characterization of oligoethylene glycol based nanogels’.
10. **10.2015-12.2015. German-Russian Interdisciplinary Science Center (G-RISC) Scholarship.** B.Sc. Alisa Nevskaja. ‘Macromolecular prodrug approach to improve the efficacy of chromenoimidazoisoquinoline moiety via conjugation to dendritic polymers’.
11. **01.2016-03.2016. Alumni Program Freie Universität Berlin.** M.Sc. Govind Pandurang Chate. ‘Design, evaluation of cytotoxicity and cellular interactions of hyperbranched polymer (HBP)-PDMS-carbon soot engineered superhydrophobic surfaces (SHS)’.
12. **03.2016-02.2017. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** M.Sc. Marcelo Kravicz. ‘Poly(succinimide)-graft-poly(glycerol)amines (PSI-g-PG-NH₂) hyperbranched structures and its polyplexes with siRNA: physicochemical and biological evaluation’.
13. **03.2016-08.2016. Collaborative Research Center (SFB1112) Fellowship for International Students.** Dr. Lydia Bouchet. ‘Tacrolimus and Dexamethasone Covalent Dual Labelling for Skin Internalization Tracking with FLIM and EPR’.

14. **03.2016-09.2016. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** Lic. Ana Sofia Sonzogni. 'Transdermal vaccination against Chagas disease'.
15. **05.2016-08.2016. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** Lic. Cecilia Samaniego Lopez. 'Synthesis of dendritic receptors for carbohydrates performing recognition at the physiological level'.
16. **10.2016-03.2017. Erasmus Plus Program.** M.Sc. Amit Kumar. 'Covalent dual labelling of responsive polymers for skin internalization tracking with FLIM and EPR'.
17. **10.2016-03.2017. Erasmus Program.** B.Sc. Eva Clemente. 'Semi-interpenetrating nanogels as cell glue'.
18. **10.2017-03.2018. Erasmus Plus Program.** Lic. Alexis Wolfel Sánchez. 'Development of versatile drug delivery system for chemotherapy treatment of cancer based on smart Semi-Interpenetrated Network Nanogels (SIPN NGs)'.
19. **10.2017-03.2018. Erasmus Plus Program.** M.Sc. Balram Singh. 'Design and synthesis of carbohydrate based cationic amphiphiles and their biomedical applications'.
20. **10.2017-03.2018. Erasmus Plus Program.** M.Sc. Smriti Arora. 'Synthesis of thermoreponsive core-shell hybrid nanogels as platform for anticancer applications'.
21. **06.2018-10.2018.** Visiting doctoral fellowship from the Dirección General de Universidad, Estudios Superiores y Ciencia from Valencia, Spain. 'Polyglutamic acid based nanocarriers for topical drug delivery'.

MAJOR INSTRUMENTATION

1. **Since 03.2013. ÄKTaprime™ plus.** Compact chromatography system designed for one-step purification of proteins at laboratory scale. The following functions are built-in: gradient pump, motorized 8-port buffer selection valve, motorized injection valve, monitor, UV/conductivity detector, fraction collector, and a series of columns for nanogels purification. Total investment approximately 25,000 €.
2. **Since 10.2013. Tecan InfiniteM200 Pro microplate reader** equipped with a gas control module. Suitable for characterization of cellular events based on fluorescence detection on 96-well plates. Details: absorption (230 nm – 1000 nm), fluorescent intensity with top and bottom reading – (FRET und TRF: 230 nm – 850 nm), automatic focus and fluorescent measurement, able to measure lumineszenz (Flash-, Glow-, Dual Color - BRET), single photon counting detector, temperature control. Total investment approximately 40,000 €.
3. **Since 04.2013. Nanoparticle Tracking Analysis (NTA) Malvern.** Coupled to modules for temperature control, dynamic light scattering measuring, and surface charge determination. Total investment approximately 100,000 €.
4. **Since 10.2016. HPLC-GPC LC-2030 integrated Shimadzu system.** Fully automatic system, provided with IR and RI detector, and columns for MW determination of small polymers and nanogels. Total investment approximately 50,000 €.

INTERNATIONAL SCIENTIFIC RESEARCH VISITS

1. **07-09/2004, Chile.** Physico-chemical Research Group. Pontifical Catholic University of Chile, Santiago. *Dendronization and characterization of poly(monomethyl itaconate).*
2. **03-07/2006, Germany.** Department of Chemistry, Freie Universität Berlin, Berlin. *Synthesis and characterization of amphiphilic polymers.*
3. **01/2008, Germany.** Macromolecular Prodrugs Research Group. Tumor Biology Center, Freiburg. *Synthesis and characterization of polyglycerol-prodrugs conjugates.*
4. **01-02/2010, United Kingdom.** Department of Chemistry, University of York. *Development of amphiphilic dendritic systems with potential application in gene delivery.*
5. **11/2010, India.** Department of Chemistry, University of New Delhi, New Delhi. *Development of amphiphilic dendritic systems for drug delivery applications.*

6. **11-12/2011, 11/2012, 09-10/2013, 03/2014, 03/2015, 09/2016, 07/2017 and 03/2018, Argentina.** Department of Organic Chemistry, University of Córdoba. *Functional nanogels for biomedical applications.*
7. **11/2013, Costa Rica.** Department of Polymer Science PoliUNA, National University of Heredia. *Multifunctional polymers for nanomedicine.*
8. **10/2014, Brazil.** Universidade Federal de São Paulo, Santo Andre. *Development of nitric oxide (NO)-releasing PEGylated nanoparticles.*
9. **05/2014, Spain.** Instituto de Ciencia y Tecnología de Polímeros (ICTP-CSIC), Madrid. *Biofunctional platforms fabricated by nanogels immobilization onto honeycomb structured films.*
10. **10/2015, Israel.** Technion – Israel Institute of Technology, Haifa. *Nanogels for mucosal drug delivery.*
11. **10/2015, Israel.** Tel Aviv University, Tel Aviv. *Dendritic polymers therapeutics.*
12. **06/2015, Spain.** Instituto Investigaciones Químicas (IIQ), CSIC, Sevilla. *Nanogels for antiviral applications*
13. **06/2015, Spain.** Departamento de Ciencias Biomédicas, Universidad de León, León. *New approaches from nanomedicine for treating leishmaniasis*
14. **11/2015, India.** Maharashtra Institute of Pharmacy, Pune. *Nanogels as Magnetic Trap Devices for Circulating Tumor Cells.*
15. **06/2016, Japan.** School of Engineering, The University of Tokyo, Tokyo. *Gold Nanorod@Elastine hybrid thermoresponsive nanogels for combined hyperthermia and chemotherapy.*
16. **07/2016, Cuba.** Department of Chemistry, University of Habana, Habana. *Development of Polymeric Materials for Theranostics.*

TEACHING EXPERIENCE

1. **Since 2011. Lecturer.** Freie Universität Berlin, Berlin, Germany. *Polymer therapeutics, Chemical nanotechnology, Polymeric and inorganic bio(nano)materials for biomedical applications, Advanced Methods in Polymer Synthesis, Soft Matter, OC 1: Grundlagen der Organischen Chemie.*
2. **2013. Lecturer at graduate course.** National University - Heredia, Costa Rica. *New paradigms in biomedical application of multifunctional polymeric materials.*
3. **2014. Lecturer at graduate course.** Universidade Federal de São Paulo, Diadema, Brazil. *Polymer therapeutics.*
4. **2011. Organizer and Lecturer of graduate course.** National University of Cordoba, Argentina. *New paradigms in biomedical application of polymers*
5. **2006. Teaching Assistant of graduate course.** National University of Rio IV. Argentina. *Biopolymers. Application of nanostructures in the controlled drug distribution. Synthesis, characterization and biocompatibility of dendrimers*
6. **2004-2007. Teaching Assistant.** National University of Cordoba. Argentina. *Laboratory of natural and synthetic macromolecules*
7. **2003. Teaching Assistant.** National University of Cordoba. Argentina. *Laboratory of general chemistry and physics II*
8. **2000-2007. Teaching Assistant.** National University of Cordoba. Argentina. *Introduction to the study of chemical sciences*
9. **1999-2002. Student Teaching Assistant.** National University of Cordoba. Argentina. *Mathematics I-II, Introduction to laboratory I-IV*

DEVELOPMENT OF TEACHING MATERIALS

1. **2001. Natural and Synthetic Macromolecules Book.** National University of Cordoba, Argentina.
2. **2003. Building with equilateral triangles.** XXVI REM (Reunión de Educación Matemática). 13-17th October 2003. Rio IV. Córdoba. Argentina.

3. **2007. Design of a polymer science course.** M. Calderón, M. Martinelli, C. Alvarez-I., M. Strumia. Revista Iberoamericana de Polímeros, V 8, Nro. 1, 64-75. (2007). <http://www.ehu.es/reviberpol>

ADVANCED EDUCATIONAL TRAINING

1. **2003. Planning criteria for the education in science.** National University of Cordoba, Argentina.
2. **2016. German language course** to improve teaching skills. Level: C1.1

MENTORING ACTIVITIES

Bachelor Thesis

1. **07.2008-09.2008.** Harald Rune Krüger. Development of a star-polymer prodrug conjugates
2. **12.2008-02.2009.** Alexander Philipp Battig. Synthesis of pH-cleavable doxorubicin conjugates with dendritic polyglycerols
3. **02.2009-04.2009.** Mazdak Asadian Birjand. Developments of polyglycerol scaffold for drug conjugation
4. **08.2009-10.2009.** Martha Kozakowski. Developments of polyglycerol scaffold for drug conjugation
5. **02.2010-05.2010.** Christoph Hahn. Synthesis of polyglycerol derivatives for delivery of bioactive compounds.
6. **03.2012-06.2012.** Gregor Nagel. Synthesis of Acid-labile FRET-based Imaging Systems
7. **11.2013-01.2014.** Marc Nicola Röger. Preparation of Polyglutamic Acid Nanogels.

Master Thesis

1. **08.2010-03.2011.** Ariane Tschiche. Dendritic Glycerol-Based Amphiphiles for Non-Viral Gene Delivery.
2. **07.2010-02.2011.** Harald Rune Krüger. Biocompatible FRET-based Imaging Systems.
3. **10.2010-06.2011.** Mazdak Asadian Birjand. Synthesis of Thermo-responsive Nanogel Systems Based on Hyperbranched Polyglycerol.
4. **02.2013-08.2013.** Michael Giulbudagian. Glycerol Based Thermo-Responsive Nanogels.
5. **10.2014-04.2015.** Loryn Fechner. Development of Functionalized Thermoresponsive Nanogels for Targeted Delivery and NIR Triggered Release of Anticancer Drugs.
6. **10.2014-05.2015.** Emanuel A. Glitscher. Synthesis of Thermoresponsive Nanogels Cross-Linked by Gold Nanoparticles.
7. **11.2015-05.2016.** Dogus Isik. Cyclodextrin based Plasmonic Nanogels.
8. **07.2016-09.2016.** Christian Neumann. Synthesis of gold nanoparticle and polyglycerol hybrid nanogels based on host-guest interactions.
9. **06.2016-12.2016.** Ernesto Osorio. Synthesis of Thermoresponsive Nanocapsules.

Doctoral Thesis

1. **05.2011-02.2015.** Harald Rune Krüger. Polyglycerol-based conjugates for theranostic applications.
2. **07.2011-09.2015.** Mazdak Asadian-Birjand. Stimuli-responsive Nanogels for Dermatology, Photothermal Therapy, and Detection of Circulating Tumor Cells.
3. **05.2010-05.2015.** Fatemeh Sheikhi Mehrabadi. Dendritic Polyglycerol for Efficient Drug/siRNA Delivery. (Co-supervision with Prof. Rainer Haag)
4. **10.2013-08.2017.** Michael Giulbudagian. Development and Adaptation of Thermoresponsive Nanogels for the Treatment of Inflammatory Skin Diseases
5. **01.2014-01.2018.** Enrico Miceli. Smart nanogel architectures for anticancer therapy and their interaction with blood proteins.
6. **03.2014-05.2018.** Laura I. Vossen. Development of dendritic polymer conjugates and their application in nanomedicine.
7. **Since 02.2015.** Gregor Nagel. Degradable Nanogels for Theranostic Applications.

8. **Since 07.2015.** Loryn Fechner. Functional Thermo- and Near Infrared Irradiation-Responsive Nanogels for Combinational Cancer Therapy
9. **Since 08.2015.** Emanuel A. Glitscher. Thermoresponsive Nanogels Cross-Linked by Metal-based Nanoparticles.
10. **Since 01.2017.** Ernesto Osorio. Synthesis of Thermoresponsive Nanocapsules for Biomedical Applications.

Advanced Laboratory Practice

1. **2008-02.2009.** Fatemeh Sheikhi Mehrabadi. The survey of DNA binding affinity of dendritic polyamines.
2. **08.2009-09.2009.** Harald Krüger. Development of Multicomponent Polymer Drug Conjugates.
3. **03.2010-05.2010.** Mazdak Asadian-Birjand. Synthesis of polyglycerol scaffolds for early diagnosis and treatment of cancer.
4. **02.2010-06.2010.** Ariane Tschiche. Dendritic Polyamines for Gene Delivery.
5. **06.2012-08.2012.** Michael Giubudagian. Thermoresponsive Nanogels for Controlled Drug Delivery.
6. **05.2013-07.2013.** Gregor Nagel. Development of Smart Imaging Systems.
7. **09.2013-11.2013.** Dimitri van den Wittenboer. Multiresponsive Nanogels for Controlled Drug Delivery.
8. **08.2013-02.2014.** Victor Gutierrez. Approaches from Nanomedicine for the Treatment of Leishmaniasis.
9. **07.2014-08.2014.** Emanuel Glitscher. Synthesis of Thermo-Responsive Gold-Based Nanogels.
10. **01.2014-03.2014.** Liroy Lugasi. Design of Semi-Interpenetrated Nanogels.
11. **03.2014-05.2014.** Florian Noack. Development of Multiresponsive Nanogels.
12. **07.2014-09.2014.** Alexander Oehrl. Synthesis of Nanogels by Thermonanoprecipitation.
13. **02.2015-08.2015.** Dr. Fitsum Sahle. Development of Thermoresponsive Nanogels for Hair Follicle Penetration.
14. **07.2015-09.2015.** Dogus Isik. Synthesis and Characterization of Cyclodextrin Modified Thermoresponsive Nanogels.
15. **02.2016-05.2016.** Ernesto Osorio Blanco. Protein adsorption on thermoresponsive polyether-based Nanogels
16. **08.2017-12.2017.** Christian Neumann. Smart supramolecular nano and microgels.

Postdoctoral Research Project

1. **08.2012-07.2014. Marie Curie Postdoctoral Fellowship.** Dr. Ana Sousa-Herves. Co-supervised with Prof. Rainer Haag. 'Environmental-responsive nanogels for biomedical applications'.
2. **07.2013-09.2015. Georg Forster Research Fellowship for Postdoctoral Researchers,** Alexander von Humboldt-Foundation. Dr. Maria Molina. Co-supervised with Prof. Rainer Haag. 'Development of nanogels for controlled drug delivery driven by near infrared light'.
3. **10.2014-09.2016. Dahlem International Network Postdocs Fellow.** Dr. Julian Bergueiro. 'Gold Nanorod@Elastine Hybrid Thermoresponsive Nanogels for Combined Hyperthermia and Chemotherapy'.
4. **05.2015-11.2015. Nanomatfutur Postdoctoral Fellow.** Dr. Harald Krüger. 'Synthesis of polymer conjugates for theranostics'.
5. **01.2013-11.2016. Nanomatfutur Postdoctoral Fellow.** Dr. Stefanie Wedepohl. 'Biological evaluation of polymer theranostics'.
6. **02.2015-08.2015. Alexander von Humboldt-Foundation Postdoctoral Fellow.** Dr. Fitsum Sahle. 'Development of Thermoresponsive Nanogels for Hair Follicle Penetration'.
7. **04.2015-02.2017. Nanomatfutur Postdoctoral Fellow.** Dr. Mrityunjoy Kar. 'Development of interpenetrated nanogels for hyperthermia'.
8. **03.2016-05.2017. Alexander von Humboldt Postdoctoral Fellow.** Dr. Marek Brzeziński. 'Synthesis of PLA-based micro- and nano-particles'.
9. **08.2016-07.2017. Einstein Foundation International Postdoctoral Fellow.** Dr. Lydia Bouchet. 'Magnetoplasmonic-Thermoresponsive Nanogel: A Smarter Theranostic Device'.
10. **09.2016-11.2018. Nanomatfutur Postdoctoral Fellow.** Dr. Julian Bergueiro. 'Development of hybrid nanogels for hyperthermia'.

11. **05.2017-08.2017. Freie Universität Berlin Postdoctoral Fellow.** Dr. Matias Picchio. 'Synthesis of thermoresponsive poly(Casein-g-NIPA) nanogels for their utilization as carriers in multiresponsive drug delivery'.
12. **08.2017-11.2018. Einstein Foundation International Postdoctoral Fellow.** Dr. Catalina Biglione. 'Magnetoplasmonic-Thermoresponsive Nanogel: A Smarter Theranostic Device'.

Support Personal

1. **10.2013-02.2015.** Mrs. Lisa Hummel. Administrative support.
2. **06.2013-10.2013.** Mrs. Azar Gomian. Chemical and biological assistant.
3. **11.2013-11.2016.** Mrs. Katrin Michel. Chemical and biological assistant.
4. **11.2017-11.2018.** Mr. Sebastian Heintze. Chemical assistant.

International Research Training at the Freie Universität Berlin

1. **02.2009-08.2009.** Dr. Julieta Paez. Surface Modification Toward Antifouling Materials. National University of Cordoba, Cordoba, Argentina.
2. **04.2010-10.2010.** Dr. Julio Cuggino. Development of Dendritic Thermoresponsive Nanogels. National University of Cordoba, Cordoba, Argentina.
3. **04.2012-07.2012.** Dr. Agustina Aldana. Synthesis of Dendronized Polymers. National University of Cordoba, Cordoba, Argentina.
4. **04.2013-07.2013.** Dr. Ariel Cappelletti. Development of Magneto-Responsive Nanogels. National University of Cordoba, Cordoba, Argentina.
5. **07.2013-09.2013.** B.Sc. Hoda Hazem Mohamed. Novel thermoresponsive nanogels for the drug delivery. German University in Cairo, Egypt.
6. **09.2013-03.2014.** M.Sc. Alberto Sanz de León. Biofunctional platforms fabricated by nanogels immobilization onto honeycomb structured films. Institute of Polymer Science and Technology (ICTP-CSIC), Madrid, Spain.
7. **01.2014-04.2014.** M.Sc. Kushbu Zope. Targeting, Isolation, and Detection of Circulating Tumor Cells. Research & Cell Development Lab, Maharashtra Institute of Pharmacy, Kothurd, Pune, India.
8. **04.2014-09.2014.** M.Sc. Guido Rimondino. Development of Semi-Interpenetrated Nanogels. National University of Cordoba, Cordoba, Argentina.
9. **04.2015-09.2015.** M.Sc. Catalina Biglione. Development of Magneto-Responsive Nanogels. National University of Cordoba, Cordoba, Argentina.
10. **05.2015-08.2015.** Dr. Lydia Bouchet. Synthesis of Anisotropic Gold Nanoparticles. National University of Cordoba, Cordoba, Argentina.
11. **08.2015-09.2015.** B.Sc. Alexandra Buchkin. Mucoadhesive Polymers. Institute for Technology Technion, Haifa, Israel.
12. **08.2015-02.2016.** M.Sc. Ana Lygia dos Santos Camara. Synthesis of prodrug nanoemulsions. Universidade de Brasília, Brazil.
13. **09.2015-12.2015.** M.Sc. Sandra Arias Lopez. Synthesis of Chiroplasmonic Thermoresponsive Nanogels. CiQUS - Center for Research in Biological Chemistry and Molecular Materials. Santiago de Compostela, Spain.
14. **10.2015-12.2015.** B.Sc. Alisa Nevskaja. Synthesis of macromolecular prodrugs. Peoples Friendship University of Russia, Moscow, Russia.
15. **10.2015-02.2016.** Dr. Oscar Rojas. Development of Anisotropic Gold-Based Nanogels. National University, Heredia, Costa Rica.
16. **01.2016-03.2016.** M.Sc. Govind Pandurang Chate. Design, evaluation of cytotoxicity and cellular interactions of hyperbranched polymer (HBP)-PDMS-carbon soot engineered superhydrophobic surfaces (SHS). Maharastra Institute of Technology, Pune, India.
17. **03.2016-02.2017.** M.Sc. Marcelo Kravicz. Poly(succinimide)-graft-poly(glycerol)amines (PSI-g-PG-NH₂) hyperbranched structures and its polyplexes with siRNA: physicochemical and biological evaluation. University of Sao Paulo, Brazil.
18. **03.2016-09.2016.** Lic. Ana Sofia Sonzogni. Transdermal vaccination against Chagas disease. Instituto de Desarrollo Tecnológico para la Industria Química, Argentina.
19. **05.2016-08.2016.** Lic. Cecilia Samaniego Lopez. Synthesis of dendritic receptors for carbohydrates performing recognition at the physiological level. University of Buenos Aires, Argentina.

20. **10.2016-03.2017.** M.Sc. Amit Kumar. Covalent dual labelling of responsive polymers for skin internalization tracking with FLIM and EPR. Delhi University, India.
21. **10.2016-03.2017.** B.Sc. Eva Clemente. Semi-interpenetrating nanogels as cell glue. University of Parma, Italy.
22. **05.2017-09.2017.** B.Sc. Nicolas Guillaume. Systematic screening of thermoresponsive nanogel synthesis conditions. Ecole Nationale Supérieure des Ingenieurs en Arts Chimiques et Technologies. Toulouse, France.
23. **05.2017-08.2017.** Dr. Matias Picchio. Synthesis of thermoresponsive poly(Casein-g-NIPA) nanogels for their utilization as carriers in multiresponsive drug delivery. National University of Cordoba, Argentina.
24. **10.2017-03.2018.** Lic. Alexis Wolfel Sánchez. Development of versatile drug delivery system for chemotherapy treatment of cancer based on smart Semi-Interpenetrated Network Nanogels SIPN NGs. National University of Cordoba, Argentina.
25. **10.2017-07.2018.** M.Sc. Balram Singh. Design and synthesis of carbohydrate based cationic amphiphiles and their biomedical applications. University of New Delhi, India.
26. **10.2017-11.2018.** M.Sc. Smriti Arora. Synthesis of thermoresponsive core-shell hybrid nanogels as platform for anticancer applications. University of New Delhi, India.
27. **04.2018-08.2018.** Anna Puiggalf Jou. Photothermal therapy, interpenetrating PEDOT and Diclofenac on thermoresponsive nanogels. Universitat Politècnica de Catalunya (UPC), Barcelona, Spain.
28. **04.2018-11.2018.** Lucila Navarro. Development of a thermoresponsive Semi-Interpenetrated Network Nanogels (SIPN NGs) functionalized with saccharides for specific receptor targeting. Instituto de Desarrollo Tecnológico para la Industria Química, Argentina.
29. **04.2018-11.2018.** Scarlet Katherine Cobos Cabrera. Thermoresponsive helicoidal polymers. University of Santiago de Compostela, Spain.
30. **05.2018-09.2017.** B.Sc. Alexis Kassentini. Silver based nanogels as antibiotics. Ecole Nationale Supérieure des Ingenieurs en Arts Chimiques et Technologies. Toulouse, France.
31. **06.2018-10.2018.** M.Sc. Irene Dolz Pérez. Polyglutamic acid based nanocarriers for topical drug delivery. Centro de Investigación Príncipe Felipe (CIPF), Valencia, Spain.

Research Training at External Institutions

1. **04.2010-05.2010.** Harald Krüger. Development of Polyglutamic Acid Peptide Conjugates. Principe Felipe Centro de Investigación, Valencia, Spain.
2. **04.2010-05.2010.** Ariane Tschiche. Synthesis and Biological Evaluation of Polymer Drug and Dye Conjugates. Principe Felipe Centro de Investigación, Valencia, Spain.
3. **10.2012-12.2012.** Mazdak Asadian-Birjand. Development of Magneto-responsive Nanogels. National University of Cordoba, Cordoba, Argentina.
4. **09.2013-10.2013.** Harald Krüger. Synthesis of Dendronized Polymers. National University of Cordoba, Cordoba, Argentina.
5. **01.2014-02.2014.** Ana Sousa-Herves. Development of Nanogel Synthesis Techniques. National University of Cordoba, Cordoba, Argentina.
6. **02.2014-04.2014.** Gregor Nagel. Synthesis of Multiresponsive Hydrogels. National University of Cordoba, Cordoba, Argentina.
7. **02.2014-04.2014.** Martina Menger. Development of Thermoresponsive Nanogels. National University of Cordoba, Cordoba, Argentina.
8. **04.2014-07.2014.** Loryn Fechner. Self-Assembled Multivalent (SAMul) Arrays. York University, England.
9. **10.2014.** Harald Krüger. Evaluation of Nitric Oxide Release Polymeric Materials. Sao Paulo University, Diadema, Brazil.
10. **11.2014-12.2014.** Julian Bergueiro. Polymer Nanocarriers. National University of Cordoba, Cordoba, Argentina.
11. **02.2015-04.2015.** Thu Hang Lai. Functionalized and Crosslinked Polymersomes with Adjustable pH Sensitivity. Leibniz Institut für Polymer Forschung Dresden e.V., Dresden, Germany.
12. **09.2015-03.2016.** Sofia Marinova. Henkel AG, Germany.
13. **01.2016-06.2016.** Julian Bergueiro. Environmental Responsive Materials. University of Tokyo, Japan.

COOPERATIONS PARTNERS IN GERMANY

1. Prof. Dr. E. Rühl. FU Berlin, Institute for Chemistry and Biochemistry.
2. Prof. Dr. U. Alexiev. FU Berlin, Experimental Physics.
3. Prof. Dr. Sarah Hedtrich. FU Berlin, Institut für Pharmazie.
4. PD Dr. Annika Vogt. Charité Berlin, Dermatology Department.
5. PD Dr. Kai Licha. mivenion GmbH.
6. PD Dr. Jens Dervede. Charité Berlin.
7. Prof. Dr. Blume-Peytavi. Charité Berlin, Dermatology Department.
8. Prof. Dr. R. Haag. FU Berlin, Institute for Chemistry and Biochemistry.
9. Prof. Dr. Volker Haucke. Leibniz-Institut für Molekulare Pharmakologie, Department Molecular Pharmacology and Cell Biology.
10. Dr. Thomas Zollner. Bayer Health Care, Gynecological Therapies, Berlin.

INTERNATIONAL COOPERATION PARTNERS

1. Prof. Dr. Miriam Strumia. Universidad Nacional de Cordoba, **Argentina**.
2. Prof. Dr. David K. Smith. York University, **England**.
3. Dr. María Jesus Vicent. Centro de Investigación Príncipe Felipe, **Spain**.
4. Prof. Dr. Jayant Khandare. Maharastra Institute of Technology, Pune, **India**.
5. Dr. Rodríguez-Hernández. Instituto de Ciencia y Tecnología de Polímeros (ICTP), Madrid, **Spain**.
6. Dr. Alexandra Muñoz-Bonilla. Departamento de Química-Física Aplicada, Facultad de Ciencias, Universidad Autónoma de Madrid, Madrid, **Spain**.
7. Prof. Dr. Roque Minari. INTEC (UNL - CONICET), Grupo de Polímeros y Reactores de Polimerización, Santa Fe, **Argentina**.
8. Prof. Dr. Takuzo Aida. University of Tokyo, **Japan**.
9. Dr. Oscar Rojas. National University, Heredia, **Costa Rica**.
10. Prof. Dr. Joao Paulo Longo. Faculty of Ceilandia, University of Brasilia, Brasilia, **Brazil**.
11. Prof. Dr. Amedea Seabra. Universidade Federal de São Paulo, Departamento de Ciências Exatas e da Terra Laboratório de Matéria e Energia, Diadema, **Brazil**.
12. Dr. Carla C. Spagnuolo. CIHIDECAR-CONICET, Departamento de Química Orgánica, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires, **Argentina**.
13. Dr. Sabrian Pricl. Molecular biology and computational life science presso Mose-Lab, University of Trieste, **Italy**.
14. Prof. Dr. Mohiuddin Abdul Quadir, North Dakota State University, **USA**.
15. Prof. Dr. Ronit Satchi-Fainaro. Sackler Faculty of Medicine, University of Tel Aviv, **Israel**.
16. Prof. Dr. Leonid G. Voskressensky. Peoples' Friendship University of Russia, Moscow, **Russia**.

MEMBER IN EVALUATION COMMISSIONS

Bachelor Thesis Evaluator

1. **07.12.2015**. Maren Meurer. Freie Universität Berlin. Title: Synthesis and Properties of Core-Multishell Nanocarriers with the Structure hPG-C19-mPEG7.
2. **26.04.2018**. Hanna Valeska Koeppe. Title: Synthesis of biodegradable polyglycerol-based drug delivery systems to load and transport of hydrophobic drugs

Master Thesis Evaluator

3. **20.11.2014**. Dennis Müller. Freie Universität Berlin. Title: Polymerisation von Cathecholderivaten.
4. **30.01.2015**. Sebastian Hinojosa. Freie Universität Berlin. Title: Amphiphilic Oxacyclen Derivatives.
5. **28.07.2015**. David Rochette. Freie Universität Berlin. Title: Volume Phase Transition of Polyelectrolyte Microgels.
6. **25.09.2015**. Alexander Oehrl. Freie Universität Berlin. Title: Surface-Immobilized Linear Polyglycerol-Sulfates for Antithrombotic Application.

7. **03.11.2015.** Qingcai Zhao. Freie Universität Berlin. Title: Polymeric Core-Shell Nanoparticles for Biocatalysis in Organic Media.
8. **13.12.2016.** Alexandra Gruber. Freie Universität Berlin. Title: Synthesis and Characterization of Reactive Nanoparticles and Amphiphilic Nanogels.
9. **08.05.2017.** Leonie Gronbach. Freie Universität Berlin. Title: Organotypic head and neck cancer models – a human cell-based evaluation of drug delivery

Doctoral Thesis Evaluator

10. **10.07.2014.** Michaela Mühlberg. Freie Universität Berlin. Title: Chemoselective Modification Strategies for Peptides and Proteins in Aqueous Media.
11. **24.11.2014.** Anja Voreck. Freie Universität Berlin. Title: Structural Characterization of a Transmembrane Protein by Solid-state NMR - A biophysical and functional study of the ABC transporter ArtMP-J.
12. **02.02.2015.** Fanni Daruny Sypaseuth. Freie Universität Berlin. Title: Electrocatalytic Carbon Dioxide Reduction Using Cationic Cp*-Iridium Complexes Bearing Unsymmetrically Substituted Bipyridine Ligands.
13. **08.07.2015.** Raquel Alvarez Velilla. Universidad de Leon, Leon, Spain. Title: Mecanismo de accion de derivados indenoisoquinolinicos frente a la DNA topoisomerase IB de Leishmania como diana terapeutica.
14. **22.07.2015.** Fatemeh Sheikhi Mehrabadi. Freie Universität Berlin. Title: Dendritic Polyglycerol for Efficient Drug and siRNA Delivery.
15. **23.10.2015.** Federica Rossella. Freie Universität Berlin. Title: Design and Synthesis of Cryptophane-based Functionalized Xenon Hosts for MRI Applications.
16. **04.12.2015.** Ariane Tschiche. Freie Universität Berlin. Title: Dendritic Amphiphiles for Gene Delivery Applications.
17. **18.01.2016.** Elisavet Kanaki. Freie Universität Berlin. Title: From surface properties towards a multiscale approach for modelling MgF₂ nanocrystals
18. **19.01.2016.** Gerrit Korff. Freie Universität Berlin. Title: Protein Secondary Structure Prediction Using a Vector-Valued Classifier.
19. **21.04.2016.** Jan Hormann. Freie Universität Berlin. Title: DNA-Spaltung durch Kupfer(II)cyclen-basierte Metallonukleasen: Einfluss von Heteroatomaustausch und Interkalatorsubstitution
20. **22.04.2016.** Darina Heinrich. Freie Universität Berlin. Title: Komplexe zyklischer pi-Perimeter mit fluorierten Substituenten.
21. **30.05.2016.** Stefano Stefani. Freie Universität Berlin. Title: Core-shell and core-amphiphilic branched shell nanocarriers based on biodegradable hyperbranched polymers, as potential drug delivery systems.
22. **30.11.2016.** Larissa von Krbek. Freie Universität Berlin. Title: Cooperative effects in multivalent crown ether/ammonium assemblies.
23. **08.05.2017.** Igor Derr. Freie Universität Berlin. Title: Electrochemical degradation and chemical aging of carbon felt electrodes in all-vanadium Redox flow batteries.
24. **31.05.2017.** Madlen Schmudde. Freie Universität Berlin. Title: Gezielte Anordnung von Nanopartikeln auf glatten und strukturierten Oberflächen.
25. **21.11.2017.** Katja Obst. Freie Universität Berlin. Title: Nanoparticulate Systems as Potential Protein Carriers and their Fate in a Biological Environment
26. **31.01.2018.** Md (Asad) Asadujjaman. Freie Universität Berlin. Title:Thermoresponsive Polymers and Hybrid Nanoparticles for Sensing Applications.
27. **26.04.2018.** Stephanie Zimmermann. Freie Universität Berlin. Title: Sweet PAMPs: new paradigms of carbohydrate – protein interaction in the host – pathogen interplay
28. **23.05.2018.** Michael Unbehauen. Freie Universität Berlin. Title: Core-Shell Nanocarriers for the Topical Delivery of Pharmacophores

Member of Supervision Commission

1. Doctoral Thesis. M.Sc. Sebastian Hinojosa. Topic: Amphiphilic Oxacyclen Derivatives.
2. Doctoral Thesis. M.Sc. Katharina Hörst. Topic: Adipocyte - Fibroblast Cross Talk as Basis of Tissue Regeneration.
3. Doctoral Thesis. Pharm. Stefan Hönzke. Topic: Die Entwicklung von in vitro Modellen entzündlicher Hauterkrankungen als Testplattform zur systematischen Untersuchung von nanopartikulären Trägersystemen hinsichtlich Effektivität und Toxizität.
4. Doctoral Thesis. M.Sc. Michael Unbehauen. Topic: Responsive Core-Multishell Polymers for Topic Drug Delivery.
5. Doctoral Thesis. M.Sc. Alexander Oehrl. Topic: Polyglycerin-basierte Nano- und Mikrogele zur Proteinverkapselung.
6. Doctoral Thesis. M.Sc. Johannes Stellmacher. Topic: Smart Fluorescent Imaging Modalities.
7. Doctoral Thesis. M.Sc. Dogus Isik. Topic: Amphiphilic Nanogels for Biomedical Applications.

TALKS SINCE 2013**Talks Delivered as Invited Speaker**

1. **28.06.2013.** Dendritic Polymers for Nanomedicine. ICTP Instituto de Ciencia y Tecnología de Polímeros, Madrid, **Spain**.
2. **14.09.2013.** Development of Dendritic Thermoresponsive Nanogels. 4th Brazilian-German Frontiers of Science and Technology Symposium, Potsdam, **Germany**.
3. **26.09.2013.** Environmentally responsive polymers for therapy and diagnosis. 3rd Argentinean Symposium of Nanomedicine, Buenos Aires, **Argentina**.
4. **05.11.2013.** Forthcoming opportunities from polymer therapeutics: externally triggered theranostics. Bioclub Freie Universität Berlin, Berlin, **Germany**.
5. **10.11.2013.** Dendritic Thermoresponsive Nanogels for Externally Triggered Drug Delivery. 10th Spanish-Portuguese Conference on Controlled Drug Delivery, Valencia, **Spain**.
6. **28.11.2013.** Environment-responsive Polymers for Nanomedicine, XIII Taller sobre Aprovechamiento de Residuos Agrícolas y Marinos, Heredia, **Costa Rica**.
7. **19.03.2014.** Dendritic polymers for biomedical applications. Institute of Virology, National University of Cordoba, Cordoba, **Argentina**.
8. **21.10.2014.** Environmental-Responsive Dendritic Nanocarriers for Theranostics. Seminarios PPG Nanociencias e Materiales Avanzados, Universidade Federal do ABC, Santo Andre, Sao Paulo, **Brazil**.
9. **30.01.2015.** Environmental-Responsive Dendritic Nanocarriers for Theranostics. Institut für Pharmazie, Freie Universität Berlin, Berlin, **Germany**.
10. **06.03.2015.** Environmental Responsive Dendritic Nanocarriers for Theranostics. Department of Organic Chemistry, University of Buenos Aires, Buenos Aires, **Argentina**.
11. **12.03.2015.** Dendritic Polymers for Theranostic Applications. Department of Organic Chemistry, National University of Cordoba, Cordoba, **Argentina**.
12. **16.03.2015.** Environmental Responsive Dendritic Polymers for Theranostics. Department of Organic Chemistry, National University of Rosario, Rosario, **Argentina**.
13. **18.03.2015.** Environmental Responsive Dendritic Polymers for Theranostics. Institute of Technological Development for the Chemical Industry, Santa Fe, **Argentina**.
14. **30.03.2015.** Environmental Responsive Dendritic Polymers for Theranostic Applications in Nanomedicine. Faculty of Exact and Natural Sciences, National University of Cuyo, Mendoza, **Argentina**.
15. **07.07.2015.** Environmental Responsive Dendritic Polymers for Theranostics. Instituto Investigaciones Químicas (IIQ), Consejo Superior de Investigaciones Científicas (CSIC), Sevilla, **Spain**.
16. **08.07.2015.** Environmental Responsive Dendritic Polymers for Theranostics. Department of Biomedical Sciences. Universidad de León, León, **Spain**.
17. **29.10.2015.** Opportunities of Polymer Theranostics, Institute of Technology, Technion, Haifa, **Israel**.

18. **16.11.2015.** Opportunities of Polymer Theranostics. Maharashtra Institute of Pharmacy, Pune, **India.**
19. **20.11.2015.** Forthcoming opportunities from polymer therapeutics: externally triggered theranostics. Humboldt Kolleg on Sustainable Development: Megatrends of the 21st Century, Goa, **India.**
20. **24.05.2016.** Use of dendritic polymer imaging systems for the evaluation of conjugate uptake and cleavage. 11th International Symposium on Polymer Therapeutics: from Laboratory to Clinical Practice, Valencia, **Spain.**
21. **27.07.2016.** A dendritic polymeric approach for theranostic applications. III Workshop Materials, Devices and Drugs, University of Habana, La Habana, **Cuba.**
22. **30.06.2017.** Thermoresponsive nanogels as unique carriers for dermal drug delivery. Institute of Virology, National University of Cordoba, Cordoba, Argentina.
23. **04.07.2017.** Environmental responsive polymers for theranostics. National University of Rio Cuarto, Rio Cuarto, **Argentina.**
24. **12.07.2017.** Environmental responsive nanogels as smart therapeutic agents. 46th World Chemistry Congress, IUPAC 2017, Sao Paulo, **Brazil.**
25. **05.09.2017.** Environment-responsive polymers as versatile platform for controlled drug delivery. POLYMAT Series of Seminars 2017-2018, San Sebastian, **Spain.**
26. **16.10.2017.** Responsive polymers as versatile platform for biomedical applications. Centro de Investigación Príncipe Felipe, Valencia, **Spain.**
27. **11.04.2018.** Breaking the barrier - Potent anti-inflammatory activity following efficient topical delivery of etanercept or dexamethasone using thermoresponsive nanogels. 15th European Symposium on Controlled Drug Delivery, Egmond aan Zee, **The Netherlands.**

Talks at Conferences and Seminars

28. **26.06.2013.** Dendritic Thermoresponsive Nanogels for Biomedical Applications. 8th International Dendrimer Symposium, Madrid, **Spain.**
29. **02.10.2013.** Development of Dendritic Thermoresponsive Nanogels for Externally Triggered Drug Delivery. Department of Organic Chemistry, National University of Cordoba, Cordoba, **Argentina.**
30. **30.10.2013.** Development of Thermoresponsive Nanogels for Externally Triggered Drug Delivery. FUB-TAU Joint Research Workshop, Berlin, **Germany.**
31. **20.02.2014.** Thermoresponsive Nanogels for Topical Drug Delivery. Colloquium series of the Collaborative Research Center 1112 - Nanocarriers: Architecture, Transport, and Topical Application of Drugs for Therapeutic Use, Berlin, **Germany.**
32. **19.06.2014.** Functional Thermoresponsive Nanogels for Biomedical Applications. 6th Forum on New Materials, Montecatini Terzi, **Italy.**
33. **19.08.2014.** Opportunities and Challenges for Thermoresponsive Nanocarriers on Topical Drug Delivery. Disciplinary Forum of the Collaborative Research Center 1112 - Nanocarriers: Architecture, Transport, and Topical Application of Drugs for Therapeutic Use, Berlin, **Germany.**
34. **02.10.2014.** Thermoresponsive Nanogele für den zielgerichteten Wirkstofftransport und NIR-kontrollierte Freisetzung – ThermoNanogele. Project Leader Meeting of the Nanomatfutur award, Bundesministerium für Bildung und Forschung (BMBF), Gelsenkirchen, **Germany.**
35. **13.10.2014.** Dendritic Polyglycerols for Polymer Therapeutics. Latin-American Polymer Symposium, Porto de Galinhas, **Brazil.**
36. **26.02.2015.** Thermoresponsive Nanogele für den zielgerichteten Wirkstofftransport und NIR-kontrollierte Freisetzung – ThermoNanogele. Mid-term report of the Nanomatfutur award, Bundesministerium für Bildung und Forschung (BMBF), Berlin, **Germany.**
37. **22.06.2015.** Dendritic polyglycerols for polymer theranostics. European Polymer Congress 2015, Dresden, **Germany.**
38. **28.09.2015.** Thermoresponsive nanogels for biomedical application. Habilitanden-Workshop der Fachgruppe Makromolekulare Chemie 2015, Gesellschaft Deutscher Chemiker, Leverkusen, **Germany.**

39. **03.11.2015.** Environmental Responsive Nanogels for Theranostics. FUB-TAU Joint Research Workshop, Tel Aviv, **Israel**.
40. **11.12.2015.** Opportunities of polymer therapeutics. Berlin-St. Petersburg Workshop on Structure and Dynamics of Nanoscopic Matter, Freie Universität Berlin, Berlin, **Germany**.
41. **10.15.2016.** Thermo-responsive Nanogele für den zielgerichteten Wirkstofftransport und NIR-kontrollierte Freisetzung – ThermoNanogele. Report Meeting for the Nanomatfutur award, Bundesministerium für Bildung und Forschung (BMBF), Berlin, **Germany**.
42. **09.06.2016.** Environmental responsive polymers as smart therapeutic agents. University of Tokyo, Tokyo, **Japan**.
43. **27.06.2016.** Environmental multiresponsive nanogels as therapeutic agents. Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, **Germany**.
44. **01.09.2016.** Thermo-responsive Nanogele für den zielgerichteten Wirkstofftransport und NIR-kontrollierte Freisetzung – ThermoNanogele. Project Leader Meeting of the Nanomatfutur award, Bundesministerium für Bildung und Forschung (BMBF), Marl, **Germany**.
45. **13.09.2016.** Thermo-responsive polymeric materials as multifunctional platforms for nanomedicine. Department of Organic Chemistry, National University of Cordoba, Cordoba, **Argentina**.
46. **28.11.2016.** Thermo-responsive nanogels as unique carriers for dermal drug delivery. HVI Symposium 2016, Multifunctional Biomaterials for Medicine, Berlin, **Germany**.
47. **14.03.2017.** Dendritic polymer imaging systems for the evaluation of conjugates uptake and intracellular drug release, Chemiedozententagung 2017 GDCh, Marburg, **Germany**.
48. **07.07.2017.** Dendritic polyglycerols as versatile platform for controlled drug delivery. Department of Organic Chemistry, National University of Cordoba, Cordoba, **Argentina**.
49. **13.11.2017.** Breaking the Barrier Crossing Biological Membranes with Polymers for Biomedical Applications. Freie Universität Berlin, **Germany**.
50. **21.03.2018.** Thermo-responsive nanogels as superior carriers for topical drug delivery. Department of Organic Chemistry, National University of Cordoba, Cordoba, **Argentina**.

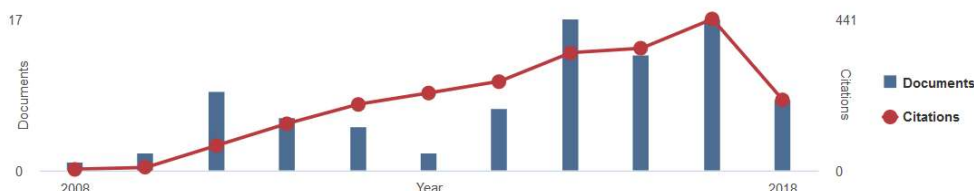
LANGUAGES

1. Spanish (mother language).
2. English (proficiency).
3. German (B2-C1 level).

PUBLICATIONS

Overview

1. **Total Publications:** 119 (75 articles in peer-reviewed journals, 22 reviews and editorials, 4 book chapters, 2 patents, 16 conference proceedings)
2. **Major contribution** on 55: 44 corresponding authorships and 11 first authorships.
3. **H-Factor:** 20 (Web of Science), 25 (Google Scholar)
4. **Total citations:** 2248
5. **Talks and poster presentations** in scientific meetings: over 200



**Information from Scopus*

Full list of publications

119. Breaking the Barrier – Potent Anti-Inflammatory Activity following Efficient Topical Delivery of Etanercept using Thermo-responsive Nanogels

M. Giubudagian, G. Yealland, S. Hönzke, A. Edlich, B. Geisendörfer, B. Kleuser, S. Hedtrich*, **M. Calderón***.

Theranostics (2018), 8, 450-463. Highlighted as front cover.

118. PEGylated dendritic polyglycerol conjugate targeting NCAM-expressing neuroblastoma: limitations and challenges

L.I. Vossen, E. Markovsky, A. Eldar-Boock, H.R. Tschiche, S. Wedepohl, R. Satchi-Fainaro*, **M. Calderón***.

Nanomedicine: Nanotechnology, Biology and Medicine (2018), 14, 1169-1179.

117. Temperature-enhanced follicular penetration of thermoresponsive nanogels

S. Jung, G. Nagel, M. Giubudagian, **M. Calderón***, A. Patzelt*, F. Knorr, J. Lademann.

Zeitschrift für Physikalische Chemie (2018), DOI: <https://doi.org/10.1515/zpch-2017-1080>.

116. Reverting the angiogenic switch of glioblastoma based on the molecular fingerprint of tumor dormancy

S. Ferber, G. Tiram, P. Ofek, A. Eldar-Boock, D. Ben-Shushan, E. Yeini, A. Krivitsky, O. Amsalem, N. Almog, J. Henkin, J.S. Lee, E. Ruppin, E. Yavin, G. Cohen, P. Lazarovici, R. Grossman, Z. Ram, **M. Calderón**, R. Haag, R. Satchi-Fainaro

The FASEB Journal (2018), manuscript accepted.

115. A facile, one-pot, surfactant-free nanoprecipitation method for the preparation of nanogels from polyglycerol-drug conjugates that can be freely assembled for combination therapy applications

L.I. Vossen, S. Wedepohl, **M. Calderón***.

Polymers (2018). *Manuscript accepted*.

114. Optimizing the circulating tumor cells capture efficiency of magnetic nanogels mediated by transferrin decoration

C. Biglione, J. Bergueiro, M. Asadian-Birjand, C. Weise, V. Khobragade, G. Chate, M. Dongare, J. Khandare, M.C. Strumia, **M. Calderón***.

Polymers (2018), 10, 174.

113. Comparison of Skin Penetration, Pathological and Clinical Effects of Novel Drug Transporters – Thermoresponsive Nanogels and Core Multishell Nanocarriers – in a Murine Model of Atopic Dermatitis

H. Pischon, M. Radbruch, F. Du, M. Guilbudagian, **M. Calderón**, M. Unbehauen, R. Haag, A.D. Gruber, L. Mundhenk

Journal of Comparative Pathology (2018), 158, 110.

112. Enhanced topical delivery of dexamethasone by β -cyclodextrin decorated thermoresponsive nanogels

M. Giubudagian, S. Hönzke, J. Bergueiro, D. Işık, F. Schumacher, S. Saeidpour, S. B. Lohan, M. C. Meinke, C. Teutloff, M. Schäfer-Korting, G. Yealland, B. Kleuser, S. Hedtrich, **M. Calderón***.

Nanoscale (2018), 10, 469-479.

111. Selective cell isolation by transferrin functionalized silane-carbon soot mediated superhydrophobic micropatterns

G.P. Chate, N.R. Kale, V. Khobragade, C. Rahane, **M. Calderón**, S.S. Banerjee, J.J. Khandare.

Advanced Material Interfaces (2018), <https://doi.org/10.1002/admi.201701581>.

110. Thermoresponsive nanogels with film-forming ability

A.S. Sonzogni, M.C.G. Passeggi (Jr.), S. Wedepohl, **M. Calderón**, L.M. Gugliotta, V.D.G. Gonzalez, R.J. Minari.

Polymer Chemistry (2018), 9, 1004–1011.

109. Unexpected Chiro-Thermoresponsive Behavior of Helical Poly(phenylacetylene)s Bearing Elastin-Based Side-Chains

S. Arias, F. Freire*, **M. Calderón***, J. Bergueiro*

Angewandte Chemie International Edition (2017), 56, 11420–11425.

108. Co-targeting the tumor endothelium and P-selectin-expressing glioblastoma cells leads to a remarkable therapeutic outcome
S. Ferber, G. Tiram, A. Sousa-Herves, A. Eldar-Boock, A. Krivitsky, A. Scomparin, E. Yeini, L.I. Vossen, K. Licha, R. Grossman, Z. Ram, J. Henkin, R. Haag, **M. Calderón**, R. Satchi-Fainaro. *eLife* (2017), 6, e25281.
107. EPR technology as sensitive method for oxidative stress detection in primary and secondary keratinocytes induced by two selected nanoparticles
S.B. Lohan, S. Ahlberg, A. Mensch, D. Höpfe, M. Giulbudagian, **M. Calderón**, S. Grether-Beck, J. Krutmann, J. Lademann, M.C. Meinke. *Cell Biochemistry and Biophysics* (2017), 75, 359-367.
106. Protein corona formation on polymeric nanoparticles possessing porous, solid and PEG-based surfaces of varied surface charge and hydrophobicity: impact on cellular uptake, toxicity, immunogenicity and drug release properties
K. Obst, G. Yealland, E. Miceli, M. Dimde, B. Balzus, C. Weise, M. Eravci, R. Bodmeier, R. Haag, **M. Calderón**, N. Charbaji, Sarah Hedtrich. *Biomacromolecules* (2017), 18, 1762-1771.
105. PEGylated dendritic polyglycerol conjugate delivers doxorubicin to the parasitophorous vacuole in leishmania infantum infections
C. Gutierrez Corbo, B. Dominguez Asenjo, L. I. Vossen, Y. Pérez Pertejo, M. A. Muñoz-Fenández, R. Balaña-Fouce, **M. Calderón***, R. M. Reguera*. *Macromolecular Bioscience* (2017), doi: 10.1002/mabi.201700098.
104. Acid-Sensitive Doxorubicin Prodrug Nanoemulsion Impairs Tumor Growth and Prevents Distant Lung Metastasis in a Breast Cancer Mice Model
A.L. dos Santos Câmara, G. Nagel, H.R. Tschiche, C. Cardador, L.A. Muehlmann, R. Bentes Azevedo, **M. Calderón**, J.P. Figueiró Longo. *Nanomedicine* (2017), 12, 1751-1765.
103. Responsive nanogels for anticancer therapy.
M. Kar, L. Fechner, G. Nagel, E. Glitscher, G.N. Rimondino, **M. Calderón***
RSC Book, Smart Material Series 'Nanogels for Biomedical Applications' (2017), 210-260.
102. How are we applying nanogel composites in biomedicine?
M. Kar, M. Molina, **M. Calderón***
Nanomedicine (2017), 12, 1627-1630.
101. Dendritic polyglycerol and N-isopropylacrylamide based thermoresponsive nanogels as smart carriers for controlled delivery of drugs through the hair follicle
F.F. Sahle, M. Giulbudagian, J. Bergueiro, J. Lademann, **M. Calderón***
Nanoscale (2017), 9, 172-182.
100. In vivo comparative study of distinct polymeric architectures bearing a combination of paclitaxel and doxorubicin at a synergistic ratio
H. Baabur-Cohen, L. Vossen, H.R. Krüger, A. Eldar-boock, E. Yeini, N. Landa-Rouben, G. Tiram, S. Wedepohl, E. Markovsky, J. Leor, **M. Calderón***, R. Satchi-Fainaro*
Journal of Controlled Release (2017), 257, 118-131.
99. Interactions of organic nanoparticles with proteins in physiological conditions
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