Roberto Fiammengo, Ph.D.

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CURRENT POSITION and RESEARCH INTERESTS

Since September 2020: **Associate Professor of Organic Chemistry**
Department of Biotechnology, University of di Verona, Italy

- Biofunctionalization of nanoparticles and planar surfaces
- Development of functional coatings and of biofunctionalization strategies
- Glycopeptide-conjugated nanoparticles as potential anticancer vaccines and as diagnostic tools
- Targeted gold nanoparticles for the imaging of tumoral vasculature and angiogenesis
- Development of nanoparticles able to cross the blood-brain-barrier via receptor-mediated transcytosis
- Development of magnetoplasmonic nanoparticles for brain stimulation

EDUCATION

27.09.2002 **Ph.D. in Chemistry**
University of Twente, Enschede, The Netherlands
Thesis: *Supramolecular mimics of heme-protein binding sites*
Advisor: Prof. David N. Reinhoudt

09.06.1997 **"Laurea" in Chemistry (equivalent to M.Sc.)**
University of Padova, Padova, Italy
Grade: 110/110

EMPLOYMENT RECORD

March 2012 – August 2020: **Team Leader - Researcher**
Center for Biomolecular Nanotechnologies, Fondazione Istituto Italiano di Tecnologia (IIT)
Arnesano (Lecce), Italy

November 2006 – February 2012: **Group leader**
Department of New Materials and Biosystems, Max Planck Institute for Intelligent Systems
(formerly MPI for Metals Research)
Stuttgart, Germany

March 2003 – November 2006: **Postdoctoral research associate** (Prof. Andres Jäschke)
Institute of Pharmacy and Molecular Biotechnology, University of Heidelberg
Heidelberg, Germany

July 2002 – March 2003: **Postdoctoral research associate** (Prof. Paolo Scrimin)
Department of Organic Chemistry, University of Padua
Padua, Italy

September 1998 – June 2002: **PhD candidate** (Prof. David N. Reinhoudt)
Laboratory of Supramolecular Chemistry and Technology and MESA+ Research Institute, University of Twente
Enschede, The Netherlands

June 1996 – August 1998: **Research assistant** in the groups of Prof. Giorgio Modena and Prof. Fulvio Di Furia under the supervision of Dr. Giulia Licini and Dr. Lucia Pasquato,
Department of Organic Chemistry, University of Padua
Padua, Italy

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

Member of the American Chemical Society since 2009.

Member of the Italian Chemical Society since 2017.

Reviewer for international journals

- Journal of the American Chemical Society, ACS Nano, Nano Letters, Analytical Chemistry, Langmuir, Biomacromolecules, ACS Applied Materials & Interfaces, Angewandte Chemie Int. Ed., Chemistry - A European Journal, ChemistryOpen, ChemNanoMat, Small, Nature Communications, Journal of Material Science, Materials Science and Engineering C, Journal of Nanoparticle Research, Acta Biomaterialia, Expert Opinion for Drug Delivery.
  Publons profile (Web of Science – Clarivate):
  https://publons.com/researcher/2622723/roberto-fiammengo/

Proposal evaluator

- Refereed upon invitation of 1 grant proposal for the Israel Science Foundation (2021).
- Refereed upon invitation of 1 grant proposal for the Polish National Science Center (2014).

- Regular reviewer for the Transnational Access proposals submitted to QualityNano, the European Union-funded infrastructure for quality in nanomaterial safety testing (2012 – 2015).

Laboratory safety manager and instructor

- 2016 – 2020: Italian Institute of Technology, NanoBioInteractions laboratory, Center for Biomolecular Nanotechnologies.
- 2007 – 2012: MPI for Intelligent Systems, Department of New Materials and Biosystems: I was responsible for the safety in the chemistry laboratories including the organization of the yearly safety briefing and the instruction of new group members

TEACHING and RESEARCH SUPERVISION

University of Verona

3 postdocs, 2 PhD students, 4 master's degree internship students, 5 bachelor degree internship students, 4 exchange PhD students (3 months) and 1 post-doc (1 months) from the University of La Rioja (Spain).

Current teaching:

Synthesis of bioactive molecules, master's degree in "Biotechnology for bioresources and sustainable development" (LM-8);

Organic Chemistry, master's degree in "Pharmacy" (LM-13);

2020-2024 ***Catalysis and green chemistry***, master's degree in "Biotechnology for bioresources and sustainable development";

2021-2024 Faculty member of the PhD program in "Biotechnology"
2026- date Faculty member of the PhD program in "Nanoscience and Advanced Technologies"

Italian Institute of Technology

1 post-doc (4 years).

4 PhD students, 2 master degree internship students, 1 exchange PhD student from the University of Hradec Kralove (Czech Republic, 4 months), 1 post-doc (3 months' exchange program with Imperial College London).

2016-2020 Faculty member of the PhD program "Material, Structure and Nanotechnology Engineering" at the University of Salento.

Max Planck Institute for Intelligent Systems

1 post-doc, 2 PhD students and 1 master student.

Teaching seminars for graduate students on "Bioconjugation techniques" and "Surface functionalization" (2 lectures, repeated twice).

University of Heidelberg

1 PhD student, 1 master student, several apprentice chemistry technicians, and 1 pharmacy intern.

Instructor of Organic Chemistry for bachelor students of the Molecular Biotechnology program (2003, 2004, and 2005). Teaching seminars in the lecture series "Methods in Pharmacy & Molecular Biotechnology" for graduate students.

University of Twente
2 master students.

Instructor of Organic Chemistry for master students of the Chemical Engineering program (1999-2000).

FUNDING

2023-2025 PRIN2022 (MUR) ***"A mechanogenetic toolkit to regulate synaptic connectivity"***, prot. 2022PREBHB, partner PI (24 mesi, 51 k€);

2023-2028 HORIZON-EIC-2022-PATHFINDEROPEN-01 ***"A synaptic mechanogenetic technology to repair brain connectivity – SynMech"***, g.a. 101099579, partner PI (60 mesi, 344 k€);

2021-2026 CIHR "**Molecular mechanisms and functional contributions of long-term memory decay**", PJT – 175204, subcontractor of McGill University (PI Prof. Dr. Oliver Michael Hardt, 60 months, 25 kCAD);

2020-2022 **Starting grant** (75 k€) Department of Excellence 2018/2022 – Department of Biotechnology, University of Verona;

2020-2024 H2020 MSCA-ITN-ETN "**Directing the immune response through designed nanomaterials** — **DIRNANO**", g.a. 956544, partner PI (48 months, 231 k€);

CURRENT SCIENTIFIC COLLABORATIONS

Prof. Lorenzo Cingolani, Dipartimento di Scienze della Vita, Università di Trieste;
Prof. Oliver Hardt, Department of Psychology, McGill University, Montreal, Canada.
Dr. Gonçalo J. L. Bernardes, Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Portugal and Department of Chemistry, University of Cambridge, UK;
Prof. Alexandra E. Porter and **Dr. Iain E. Dunlop**, Faculty of Engineering, Department of Materials, Imperial College London, UK;
Prof. Francisco Corzana, Department of Chemistry, Universidad de La Rioja, Logroño, Spain;
Prof. Andrea Sartori, Dipartimento di Farmacia, Università di Parma;
Prof. Francesca Bianchini, Dipartimento di Patologia e Oncologia Sperimentali, Università di Firenze;
Prof. Cristina Nativi, Dipartimento di Chimica "Ugo Schiff", Università di Firenze;
Prof. Emanuele Papini, Dipartimento di Scienze Biomediche, Università di Padova;
Prof. Fabio Benfenati, Center for Synaptic Neuroscience and Technology, Istituto Italiano di Tecnologia, Genova;

BIBLIOMETRIC DATA

Total published articles in peer-reviewed journals: 45
Total impact factor (JCR 2024)**: 356.6** (last 5 years: **81.30**, average IF/publ. **10.16**)
H-index: 27 Web of Knowledge^{SM} and **27** Scopus – Elsevier accessed August 3rd, 2026)
Total citations: 2418 (Web of Knowledge^{SM}) / 2545 (Scopus – Elsevier).

CONFERENCE CONTRIBUTIONS *(last ten years)*

Oral presentations:

FENS Forum 2026 Satellite Event 14 – Synaptic Mechanogenetics: From Mechanical Forces to Network Connectivity – *Magnetic Nanoparticles for Mechanogenetic Applications,* **Barcelona**, ES, 11/7/2026.

LEbiotec2020: Workshop su ricerca e innovazione nelle biotecnologie: *Nanoparticelle d'oro per proteggere i neuroni dalla morte indotta da eccitotossicità,* **Università del Salento** (in collegamento da remoto), 28/09/2020.

LEbiotec2019: Convegno sullo stato delle biotecnologie nel territorio "L'ecosistema delle biotecnologie": *Design and implementation of gold-nanoparticle formulations as MUC1-directed cancer vaccines,* **Università del Salento**, 3/10/2019.

XXXIX Convegno Nazionale della Divisione di Chimica Organica della SCI – CDCO 2019: *Site-selective immobilization of leptin on gold nanoparticles*, **University of Turin**, 8 – 12/9/2019.

258th ACS National Meeting & Exposition: *Design and implementation of gold-nanoparticle formulations as MUC1-directed cancer vaccines*, **San Diego**, CA, USA, 25 – 29/8/2019.

XXXVIII Convegno Nazionale della Divisione di Chimica Organica della SCI – CDCO 2018: *Selective targeting of $\alpha_V\beta_3$ integrins with gold nanoparticles carrying RGD-semipeptides,* **University of Milan**, 9 – 13/9/2018.

7th EuCheMS Chemistry Congress: *Cyclic aminoproline-RGD functionalized gold nanoparticles for effective targeting of $\alpha_V\beta_3$ integrins and selective tumor cell internalization,* **Liverpool**, UK, 26 – 30/8/2018.

XXVI Congresso Nazionale della Società Chimica Italiana 2017: *Eliciting specific humoral and cellular immune response by self-adjuvanting gold nanoparticles carrying tumor-associated MUC1 glycopeptides*, **Paestum**, Italy, September 10 – 14, 2017.

Poster presentations:

XLI Convegno Nazionale della Divisione di Chimica Organica della SCI - CDCO 2023: *Tuning the adjuvant properties of gold nanoparticles for the development of cancer vaccines*, **Sapienza-Università di Roma**, 10 – 14/9/2023.

PLASMONICA 2019: *A label free optic SPR biosensor for mechanotransduction and force generation,* **Napoli**, Italy, June 19 – 21, 2019.

TERAMETANANO-4, the International Conference on Terahertz Emission, Metamaterials and Nanophotonics: *Gold nanorods SPR-based biosensor for mechanotransduction analysis,* **Lecce**, Italy, May 27 – 31, 2019.

29th International Carbohydrate Symposium (ICS 2018): *A synthetically defined glycoconjugate vaccine against cancer*, **Universidade de Lisboa**, Lisbon, Portugal, July 15 – 19, 2018.

E-MRS Spring Meeting 2018: *Nanovaccines for the treatment of cancer: multivalent presentation of TA-MUC1 glycopeptides on gold,* **Strasbourg**, France, June 18 – 22, 2018.

28th Anniversary World Congress on Biosensors 2018: *Two-photon polymerization for fabrication of pH responsive high molecular weight PEG-DA based hydrogel*, **Miami**, USA, June 12 – 15, 2018.

Medical Biotechnology – VIB Conference Series 2018: *Next generation gold-nanoparticle formulations for improving efficacy of TA-MUC1-directed cancer vaccines,* **Ghent**, Belgium, May 24 – 25, 2018.

School of Nanomedicine Bari 2017 (3 posters): *Gold nanoparticles for biological applications and nanomedicine*, *Improved size-tunable synthesis of gold nanorods and surface functionalization strategies for biomedical applications*, and *Cyclic-aminoproline-RGD gold nanoparticles for targeting integrin tumor angiogenesis,* **Bari**, Italy, October 11 – 13, 2017.

XXVI Congresso Nazionale della Società Chimica Italiana 2017: *Improved size-tunable synthesis of gold nanorods and surface functionalization strategies for biomedical applications*, **Paestum**, Italy, September 10 – 14, 2017.

INVITED TALKS *(last ten years)*

Development of cancer vaccines using PEGylated gold nanoparticles, **University of Twente**, 07/12/2023.

Design and implementation of glycopeptide functionalized gold nanoparticles as diagnostic tools for pancreatic cancer, **Dipartimento di Scienze Chimiche, Università di Padova**, 08/09/2023.

Gold nanoparticles for the development of cancer vaccines, **Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste**, 18/05/2023.

Bio-functionalized gold nanoparticles: from design to application, **Dipartimento di Biotecnologie, Università di Verona**, 13/9/2019.

Bio-functionalized gold nanoparticles: from design to application, **NanoEngineering/ Chemical Engineering Department, University of California San Diego,** CA, USA, 30/8/2019.

Bio-functionalized gold nanoparticles: molecular design and applications, **University of Siena**, 22/7/2019.

Bio-functionalized gold nanoparticles: design of cancer vaccine candidates and targeting of cell membrane receptors, **GSK Vaccines S.r.l., Siena,** 23/7/2019.

Designer gold nanoparticles for improved targeting of cell surface receptors, **Center for Synaptic Neuroscience and Technology, Istituto Italiano di Tecnologia, Genova**, 11/1/2019.

Improving the performances of bio-functionalized gold nanoparticles through a sensible molecular design, **Departamento de Química, Universidad de La Rioja**, Spagna, 29/11/2018.

PEGylated gold nanoparticles functionalized with biologically active molecules: improved performances through a sensible molecular design, **Dip. di Scienze Biomediche Sperimentali e Cliniche, Università di Firenze**, 30/10/2018.

PUBLICATIONS (in reversed chronological order)

Orcid ID: orcid.org/0000-0002-6087-6851;

* : corresponding author

Associate Professor (University of Verona):

45. de Marzo, G.; Antonaci, V.; Brunetti, V.; Blasi, L.; Fachechi, L.; Marras, S.; Qualtieri, A.; Rizzi, F.; Fiammengo, R.; De Vittorio, M. Tailored piezoelectric chitosan thin film for ultrasound-controlled drug delivery. *Commun. Mater.* **2026***,* 7, 174.

44. Siani, P.; Eguskiza, A.; Frigerio, G.; Donadoni, E.; Ossanna, R.; Volk, M.; Brust, M.; Giovannone, B.; Fiammengo, R.*; Di Valentin, C. Controlling Macrophage Uptake of Gold Nanoparticles through the Design of an Effective Heterogeneous Coating. *ACS Appl. Mater. Interfaces* **2026***, 18,* 25847–25862.

43. Ribeiro, A. R. S.; Eguskiza, A.; Dang, H.-H.; Neuper, T.; Unger, M. S.; Rodriguez Comas, L.; Steiner, M.; Sieberer, H.; Zaborsky, N.; Greil, R.; Vilar I Hernandez, M.; Jonkheijm, P.; Fiammengo, R.*; Horejs-Hoeck, J. Loading of STING Agonist into Lipid Nanoparticles Boosts Dendritic Cell Activation. *ACS Omega* **2025***, 10,* 58465−58479.

42. Pavón, C.; Grigoletto, A.; Kempkes, V.; Eguskiza, A.; Morbidelli, M.; Fiammengo, R.; Papini, E.; Mattarei, A.; Pasut, G.; Matyjaszewski, K.; Lorandi, F.; Benetti, E. M. The Role of Structural Dispersity of Polymer Brushes in Determining the Colloidal Stability of Core–Shell Nanoparticles and Their Interaction with Anti-PEG Antibodies. *JACS Au* **2025***, 5, 4519−4529*.

41. Gibadullin, R.; Suárez, O.; Lazaris, F. S.; Gutiez, N.; Atondo, E.; Araujo-Aris, S.; Eguskiza, A.; Niu, J.; Kuhn, A. J.; Grosso, A. S.; Rodriguez, H.; García-Martín, F.; Marcelo, F.; Santos, T.; Avenoza, A.; Busto, J. H.; Peregrina, J. M.; Gellman, S. H.; Anguita, J.; Fiammengo, R.*; Corzana F. Enhancing Cancer Vaccine Efficacy: Backbone Modification with β-Amino Acids Alters the Stability and Immunogenicity of MUC1-Derived Glycopeptide Formulations. *JACS Au* **2025,** *5* (5), 2270-2284.

40. Corzana, F.; Asín, A.; Eguskiza, A.; De Tomi, E.; Martín-Carnicero, A.; Martínez-Moral, M. P.; Mangini, V.; Papi, F.; Bretón, C.; Oroz, P.; Lagartera, L.; Jiménez-Moreno, E.; Avenoza, A.; Busto, J. H.; Nativi, C.; Asensio, J. L.; Hurtado-Guerrero, R.; Peregrina, J. M.; Malerba, G.; Martínez, A.; Fiammengo, R.* Detection of Tumor-Associated Autoantibodies in the Sera of Pancreatic Cancer Patients Using Engineered MUC1 Glycopeptide Nanoparticle Probes. *Angew. Chem. Int. Ed.* **2024,** *63 (37)*, e202407131.

39. Bermejo, I. A.; Guerreiro, A.; Eguskiza, A.; Martínez-Sáez, N.; Lazaris, F. S.; Asín, A.; Somovilla, V. J.; Compañón, I.; Raju, T. K.; Tadic, S.; Garrido, P.; García-Sanmartín, J.; Mangini, V.; Grosso, A. S.; Marcelo, F.; Avenoza, A.; Busto, J. H.; García-Martín, F.; Hurtado-Guerrero, R.; Peregrina, J. M.; Bernardes, G. J. L.*; Martínez, A.*; Fiammengo, R.*; Corzana, F.* Structure-Guided Approach for the Development of MUC1-Glycopeptide-Based Cancer Vaccines with Predictable Responses. *JACS Au* ***2024,*** *4 (1), 150-163*.

38. Valente, P.; Kiryushko, D.; Sacchetti, S.; Machado, P.; Cobley, C. M.; Mangini, V.; Porter, A. E.; Spatz, J. P.; Fleck, R. A.; Benfenati, F.; Fiammengo, R.* Reply to Comment on Conopeptide-Functionalized Nanoparticles Selectively Antagonize Extrasynaptic N-Methyl- D -aspartate Receptors and Protect Hippocampal Neurons from Excitotoxicity in Vitro. *ACS Nano* **2021,** *15 (10),* 15409-15417.

Team Leader - Researcher (Italian Institute of Technology):

37. Macías-León, J.; Bermejo, I.A.; Asín, A.; García-García, A.; Compañón, I.; Jiménez-Moreno, E.; Coelho, H.; Mangini, V.; Albuquerque, I.S.; Marcelo, F.; Asensio, J.L.; Bernardes, G.J.L.; Joshi, H.J.; Fiammengo, R.; Blixt, O.; Hurtado-Guerrero, R.; Corzana F. Structural characterization of an unprecedented lectin-like antitumoral anti-MUC1 antibody. *Chem. Commun.* **2020**, *56 (96)*, 15137-15140.
36. Valente, P.; Kiryushko, D.; Sacchetti, S.; Machado, P.; Cobley, C. M.; Mangini, V.; Porter, A. E.; Spatz, J. P.; Fleck, R. A.; Benfenati, F.; Fiammengo, R.* Conopeptide-Functionalized Nanoparticles Selectively Antagonize Extrasynaptic N-Methyl- d -aspartate Receptors and Protect Hippocampal Neurons from Excitotoxicity in Vitro. *ACS Nano* **2020,** *14 (6),* 6866-6877.
35. Scarpa, E.; Mastronardi, V. M.; Guido, F.; Algieri, L.; Qualtieri, A.; Fiammengo, R.; Rizzi, F.; De Vittorio, M. Wearable piezoelectric mass sensor based on pH sensitive hydrogels for sweat pH monitoring. *Sci. Rep.* **2020**, *10,* 10854.
34. Salbini, M.; Stomeo, T.; Ciracì, C.; Fiammengo, R.; Mangini, V.; Toma, A.; Pisano, F.; Pisanello, F.; Verri, T.; Smith, D.; De Vittorio, M. Label-free biomechanical nanosensor based on LSPR for biological applications. *Opt. Mater. Express.* **2020,** *10 (5),* 1264-1272.
33. Mangini, V.; Maggi, V.; Trianni, A.; Melle, F.; De Luca, E.; Pennetta, A.; Del Sole, R.; Ventura, G.; Cataldi, T. R. I.; Fiammengo, R.* Directional immobilization of proteins on gold nanoparticles is essential for their biological activity: leptin as a case study. *Bioconjugate Chem.* **2020**, *31 (1)*, 74-81.
32. Compañón, I.; Guerreiro, A.; Mangini, V.; Castro-López, J.; Escudero-Casao, M.; Avenoza, A.; Busto, J. H.; Castillón, S.; Jiménez-Barbero, J.; Asensio, J. L.; Jiménez-Osés, G.; Boutureira, O.; Peregrina, J. M.; Hurtado-Guerrero, R.; Fiammengo, R.*; Bernardes, G. J. L.*; Corzana, F.* Structure-based design of potent tumor-associated antigens: modulation of peptide presentation by single atom O/S or O/Se substitutions at the glycosidic linkage. *J. Am. Chem. Soc.* **2019**, *141 (9)*, 4063-4072.
31. Scarpa, E.; Lemma, E. D.; Fiammengo, R.; Cipolla, M. P.; Pisanello, F.; Rizzi, F.; De Vittorio, M. Microfabrication of pH-responsive 3D hydrogel structures via two-photon polymerization of highmolecular-weight poly(ethylene glycol) diacrylates. *Sens. Actuators, B* **2019**, *279,* 418-426.
30. Maggi, V.; Bianchini, F.; Portioli, E.; Peppicelli, S.; Lulli, M.; Bani, D.; Del Sole, R.; Zanardi, F.; Sartori, A.; Fiammengo, R.* Gold Nanoparticles Functionalized with RGD-Semipeptides: A Simple yet Highly Effective Targeting System for $\alpha_V\beta_3$ Integrins. *Chem. Eur. J.* **2018**, *24 (46)*, 12093-12100.
29. Fiammengo, R.* Can nanotechnology improve cancer diagnosis through miRNA detection? *Biomarkers Med.* **2017**, *11(1),* 69-86.
28. Perinot, A.; Kshirsagar, P.; Malvindi, M. A.; Pompa, P. P.; Fiammengo, R.*; Caironi, M.* Direct-written polymer field-effect transistors operating at 20 MHz *Sci. Rep.* **2016**, *6,* 38941.

27. Gonzalez-Carter, D.; Goode, A. E.; Fiammengo, R.; Dunlop, I. E.; Dexter, D. T.; Porter, A. E. Inhibition of leptin–ObR interaction does not prevent leptin translocation across a human blood-brain barrier model *J. Neuroendocrinol.* **2016**, *28,* doi: 10.1111/jne.12392.
26. Cai, H.; Degliangeli, F.; Palitzsch, B.; Gerlitzki, B.; Kunz, H.; Schmitt, E.*; Fiammengo, R.*; Westerlind, U.* Glycopeptide-functionalized gold nanoparticles for antibody induction against the tumor associated mucin-1 glycoprotein *Bioorg. Med. Chem.* **2016**, *24 (5)*, 1132–1135.
25. Degliangeli, F.; Pompa, P. P.; Fiammengo, R.* Nanotechnology-based strategies for the detection and quantification of microRNA *Chem. Eur. J.* **2014**, *20 (31)*, 9476–9492.
24. Degliangeli, F.; Kshirsagar, P.; Brunetti, V.; Pompa, P. P.; Fiammengo, R.* Absolute and Direct MicroRNA Quantification Using DNA–Gold Nanoparticle Probes *J. Am. Chem. Soc.* **2014**, *136 (6)*, 2264-2267.
23. Valentini, P.; Fiammengo, R.; Sabella, S.; Gariboldi, M.; Maiorano, G.; Cingolani, R.; Pompa, P. P. Gold-nanoparticle-based colorimetric discrimination of cancer-related point mutations with picomolar sensitivity *ACS Nano* **2013,** *7 (6),* 5530-5538.
22. Brunetti, V.; Chibli, H.; Fiammengo, R.; Galeone, A.; Malvindi, M.A.; Vecchio, G.; Cingolani, R.; Nadeau, J.L.; Pompa, P.P. InP/ZnS as a safer alternative to CdSe/ZnS core/shell quantum dots: in vitro and in vivo toxicity assessment. *Nanoscale* **2013**, *5 (1)*, 307-317.

Research group leader (Max Planck Institute for Intelligent Systems):

21. Lee-Thedieck, C.; Rauch, N.; Fiammengo, R.; Klein, G.; Spatz, J.P. Impact of substrate elasticity on human hematopoietic stem and progenitor cell adhesion and motility*. J. Cell Sci.* **2012,** *125 (16),* 3765-3775*.*
20. Maus, L.; Dick, O.; Bading, H.; Spatz, J. P.; Fiammengo, R.* Conjugation of Peptides to the Passivation Shell of Gold Nanoparticles for Targeting of Cell-Surface Receptors. *ACS Nano* **2010,** *4 (11), 6617-6628*.
19. Aydin, D.; Louban, I.; Perschmann, N.; Blummel, J.; Lohmueller, T.; Cavalcanti-Adam, E. A.; Haas, T. L.; Walczak, H.; Kessler, H.; Fiammengo, R.*, Spatz, J. P.* Polymeric Substrates with Tunable Elasticity and Nanoscopically Controlled Biomolecule Presentation. *Langmuir* **2010,** *26 (19)*, 15472-15480.
18. Maus, L.; Spatz, J. P.; Fiammengo, R.* Quantification and reactivity of functional groups in the ligand shell of PEGylated gold nanoparticles via a fluorescence-based assay. *Langmuir* **2009**, 25 (*14*), 7910-7917.

Post-doc (University of Heidelberg and University of Padua):

17. Fournier, P.; Fiammengo, R.; Jaeschke, A. Allylic Amination by a DNA-Diene-Ir(I) Hybrid Catalyst. *Angew. Chem. Int. Ed.* **2009**, 48 *(24)*, 4426-4429.
16. Caprioara, M.; Fiammengo, R.; Engeser, M.; Jaeschke, A. DNA-based phosphane ligands. *Chem. Eur. J.* **2007,** 13 *(7)*, 2089-2095.
15. Pfander, S.; Fiammengo, R.; Kirin, S. I.; Metzler-Nolte, N.; Jaeschke, A. Reversible site-specific tagging of enzymatically synthesized RNAs using aldehyde-hydrazine chemistry and protease-cleavable linkers. *Nucleic Acids Res.* **2007,** 35 *(4)*, e25/1-e25/8.
14. Helm, M.; Petermeier, M.; Ge, B.; Fiammengo, R.; Jaeschke, A. Allosterically Activated Diels-Alder Catalysis by a Ribozyme. *J. Am. Chem. Soc.* **2005,** 127 *(30)*, 10492-10493.
13. Fiammengo, R.; Jaeschke, A. Nucleic acid enzymes. *Curr. Opin. Biotechnol.* **2005,** 16 *(6)*, 614-621.
12. Fiammengo, R.; Musilek, K.; Jaeschke, A. Efficient Preparation of Organic Substrate-RNA Conjugates via in Vitro Transcription. *J. Am. Chem. Soc.* **2005,** 127 *(25)*, 9271-9276.

11. Martin, M.; Manea, F.; Fiammengo, R.; Prins, L. J.; Pasquato, L.; Scrimin, P. Metallodendrimers as Transphosphorylation Catalysts. *J. Am. Chem. Soc.* **2007,** 129 *(22)*, 6982-6983.

PhD (University of Twente):

10. Fiammengo, R.; Crego-Calama, M.; Timmerman, P.; Reinhoudt, D. N. Recognition of caffeine in aqueous solutions. *Chem. Eur. J.* **2003,** 9 *(3)*, 784-792.
9. Fiammengo, R.; Wojciechowski, K.; Crego-Calama, M.; Timmerman, P.; Figoli, A.; Wessling, M.; Reinhoudt, D. N. Heme-Protein Active Site Models via Self-Assembly in Water. *Org. Lett.* **2003,** 5 *(19)*, 3367-3370.
8. Fiammengo, R.; Bruinink, C. M.; Crego-Calama, M.; Reinhoudt, D. N. Noncovalent Secondary Interactions in Co(II)Salen Complexes: O_2 Binding and Catalytic Activity in Cyclohexene Oxygenation. *J. Org. Chem.* **2002,** 67 *(24)*, 8552-8557.
7. Corbellini, F.; Fiammengo, R.; Timmerman, P.; Crego-Calama, M.; Versluis, K.; Heck, A. J. R.; Luyten, I.; Reinhoudt, D. N. Guest Encapsulation and Self-Assembly of Molecular Capsules in Polar Solvents via Multiple Ionic Interactions. *J. Am. Chem. Soc.* **2002,** 124 *(23)*, 6569-6575.
6. Fiammengo, R.; Timmerman, P.; Huskens, J.; Versluis, K.; Heck, A. J. R.; Reinhoudt, D. N. Non-covalent synthesis of calix[4]arene-capped porphyrins in polar solvents via ionic interactions. *Tetrahedron* **2002,** 58 *(4)*, 757-764.
5. Fiammengo, R.; Crego-Calama, M.; Reinhoudt, D. N. Synthetic self-assembled models with biomimetic functions. *Curr. Opin. Chem. Biol.* **2001,** 5 *(6)*, 660-673.
4. Michels, J. J.; Fiammengo, R.; Timmerman, P.; Huskens, J.; Reinhoudt, D. N. Complexation of porphyrin-appended guests by calix[4]arene-appended cyclodextrins. *J. Incl. Phenom. Macro.* **2001,** 41 *(1-4)*, 163-172.
3. Fiammengo, R.; Timmerman, P.; de Jong, F.; Reinhoudt, D. N. Highly stable cage-like complexes by self-assembly of tetracationic Zn(II) porphyrinates and tetrasulfonatocalix[4]arenes in polar solvents. *Chem. Commun.* **2000**, *(23)*, 2313-2314.

Undergraduate research (University of Padua):

2. Fiammengo, R.; Licini, G.; Nicotra, A.; Modena, G.; Pasquato, L.; Scrimin, P.; Broxterman, Q. B.; Kaptein, B. Duality of Mechanism in the Tetramethylfluoroformamidinium Hexafluorophosphate-Mediated Synthesis of *N*-Benzyloxycarbonylamino Acid Fluorides. *J. Org. Chem.* **2001,** 66 *(17)*, 5905-5910.
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PATENT APPLICATIONS

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