

List of publications of Gilles Bruylants

Contributions to collective works

In press

Troian Gautier, L., Mattiuzzi, A., Blond, P., Retout, M., Bruylants, G., Reinaud, O., Lagrost, C., & Jabin, I. (2022). Aryl Diazonium Salts and Related Compounds. Surface Chemistry and Applications: Modification of surfaces with calix[4]arene diazonium salts. In J. Pinson, M. M. Chehimi, & F. Mousli (Eds.), *Aryl Diazonium Salts and Related Compounds. Surface Chemistry and Applications: Modification of surfaces with calix[4]arene diazonium salt*. Springer.

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2021

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Lanfranco, R., Mognetti, B. M., & Bruylants, G. (2019). Achieving Selective Targeting Using Engineered Nanomaterials. In C. Demetzos & N. Pippa (Eds.), *Thermodynamics and Biophysics of Biomedical Nanosystems* (1 ed., pp. 147-182). Singapore: Springer. (Series in BioEngineering). doi:10.1007/978-981-13-0989-2_6

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Bruylants, G. (2011). Van der Waals Forces. In M. Gargaud, R. Amils, J. Cernicharo Quintanilla, H. Cleaves, W. Irvine, D. Pinti, & M. Viso (Eds.), *Encyclopedia of Astrobiology* (1 ed., pp. 1728-1729). Berlin: Springer.

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Bruylants, G. (2011). Hydrogen Bonds. In M. Gargaud, R. Amils, J. Cernicharo Quintanilla, H. Cleaves, W. Irvine, D. Pinti, & M. Viso (Eds.), *Encyclopedia of Astrobiology* (1 ed., pp. 781-782). Berlin: Springer.

Bruylants, G. (2011). Stereochemistry. In M. Gargaud, R. Amils, J. Cernicharo Quintanilla, H. Cleaves, W. Irvine, D. Pinti, & M. Viso (Eds.), *Encyclopedia of Astrobiology* (p. 1598). Berlin: Springer.

Peer-reviewed journal articles

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Burger, P., Singh, G., Johansson, C., Moya, C., Bruylants, G., Jakob, G., & Kalaboukhov, A. (2022). Atomic Force Manipulation of Single Magnetic Nanoparticles for Spin-Based Electronics. *ACS Nano*. doi:10.1021/acsnano.2c08622

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Retout, M., Cornelio, B., Bruylants, G., & Jabin, I. (2022). Bifunctional Calix[4]arene-Coated Gold Nanoparticles for Orthogonal Conjugation. *Langmuir*, 38, 9301-9309. doi:https://pubs.acs.org/doi/10.1021/acs.langmuir.2c01122

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Active participation in international conferences and symposiums

2022

Retout, M., Gosselin, B., Jabin, I., & Bruylants, G. (2022). *Calix[4]arene-Tetradiazonium Salts: a Powerful and Versatile Tool for Nanomaterials Functionalization*. Paper session presented at GOLD 2022 (17 au 20 juillet 2022: Quebec city, Canada).

https://dipot.ulb.ac.be/dspace/bitstream/2013/345579/3/Abstract_GOLD_GBruylants.docx

Retout, M., Gosselin, B., Jabin, I., & Bruylants, G. (2022). *Calix[4]arene-Tetradiazonium Salts: a Powerful and Versatile Tool for Nanomaterials Functionalization*. Paper session presented at Nanotech France 2022 (15 au 17 juin 2022: Paris, France).

<https://dipot.ulb.ac.be/dspace/bitstream/2013/345577/3/Abstract-Bruylants-Gilles-Nanotech.docx>

2019

Alexandri, C., Stamatopoulos, B., Bareche, Y., Jabin, I., Bruylants, G., & Demeestere, I. (2019). *Let-7a as a target to prevent chemotherapy-induced ovarian damage in mouse model: a novel & non-invasive pharmacological approach in future fertility preservation strategies*. Poster session presented at Cancerology Symposium UCL University (06-09-2019: Brussels).

2017

Valkenier, H., Malytskyi, V., Blond, P., Retout, M., Mattiuzzi, A., Derfoufi, K.-M., Raussens, V., Jabin, I., & Bruylants, G. (2017). *Infra-Red Study revealing Controlled Functionalisation of Gold Nanoparticles with Mixtures of Calix[4]arenes*. Poster session presented at Annual Meeting of the Doctoral School "Molecular, Supramolecular, and Functional Chemistry" (EDT-CHIM) (9 May 2017: Gembloux, Belgium).

<https://dipot.ulb.ac.be/dspace/bitstream/2013/263633/3/posterCalixmixAuNPsMay2017.pdf>

2016

Valkenier, H., Troian Gautier, L., Mattiuzzi, A., Jabin, I., Lagrost, C., Leroux, Y., & Bruylants, G. (2016). *Extremely robust and post-functionalizable gold nanoparticles coated with calix[4]arenes via metal-carbon bonds*. Poster session presented at ERC Grantees Conference "Frontiers in Chemistry" (31 August - 2 September 2016: Zandvoort, The Netherlands).

<https://dipot.ulb.ac.be/dspace/bitstream/2013/263634/3/posterCalixAuNPsAug2016.pdf>

2015

Doyen, M., Bartik, K., & Bruylants, G. (2015). *Amino acid-induced aggregation of gold colloids: the why and the now?* Paper session presented at COST Action CM1005 Final Conference (6-8 février 2015: Prague).

2014

Doyen, M., Bartik, K., & Bruylants, G. (2014). *Physico-chemical characterization of the interaction between gold nanoparticles and amino acids: why and when is an anisotropic aggregation observed?* Poster session presented at 4th International Colloids Conference (16 to 18 June 2014: Madrid, Spain).

<https://dipot.ulb.ac.be/dspace/bitstream/2013/174376/1/DoyenPosterMadrid2014.pdf>

2013

Doyen, M., Bartik, K., & Bruylants, G. (2013). *Study of the interaction between gold nanoparticles and biomolecules : physico-chemical characterization*. Paper session presented at Supramolecular gels and micelles as potential environments for molecular recognition and catalysis in water - CMST COST Action CM1005 (10-11 May 2013: Rome, Italy).

Brunetti, E., Bidegaray, A., Bruylants, G., Jabin, I., Reinaud, O., & Bartik, K. (2013). *Input of EXSY 1D NMR spectroscopy to understand guest exchange mechanism of calyx[6]arene tris-imidazole Zinc receptors*. Paper session presented at Supramolecular gels and micelles as potential environments for molecular recognition and catalysis in water - CMST COST Action CM1005 (10-11 mai 2013: Rome, Italy).

Keymeulen, F., De Bernardin, P., Goursaud, M., Bruylants, G., Dalla Cort, A., & Bartik, K. (2013). *Physico-chemical characterization of a uranyl-salophen receptor incorporated in different types of micelles*. Paper session presented at Supramolecular gels and micelles as potential environments for molecular recognition and catalysis in water - CMST COST Action CM1005 (10-11 mai 2013: Rome, Italy).

Doyen, M., Bartik, K., & Bruylants, G. (2013). *Physico-chemical characterization of the interaction between gold nanoparticles and biomolecules*. Paper session presented at CMST COST Action CM1005 (21-23 march 2013: Brussels, Belgium).

2012

Doyen, M., Bartik, K., & Bruylants, G. (2012). *Input of diffusion ordered NMR spectroscopy (DOSY) to elucidate the growth mechanism of gold nanoparticles*. Poster session presented at Young Belgian Magnetic Resonance Scientist (11th: 26-27 November 2012: Spa, Belgium).

 <https://dipot.ulb.ac.be/dspace/bitstream/2013/146511/1/2.pdf>

Doyen, M., Bartik, K., & Bruylants, G. (2012). *Oligonucleotides-Promoted Auto-Assembly of Gold Nanoparticles*. Paper session presented at Supramolecular Chemistry in Water - CMST COST Action CM1005 (16-20 Novembre 2012: Lisbonne, Portugal).

Doyen, M., Bartik, K., & Bruylants, G. (2012). *Input of NMR spectroscopy to elucidate the growth mechanism of gold nanoparticles by citrate reduction*. Paper session presented at 11th Young Belgian Magnetic Resonance Scientists Symposium (26-27 novembre 2012: Spa, Belgium).

2011

De Bernardin, P., Bruylants, G., Dalla Cort, A., & Bartik, K. (2011). *Anion Binding in Water: the Potential of Micelles*. Paper session presented at COST Action CM1005 First conference (19-21 novembre 2011: Frascati, Italy).

Doyen, M., Bartik, K., & Bruylants, G. (2011). *DNA-Controlled Self Assembly of Gold Nanoparticles*. Poster session presented at International Symposium on Advanced Complex Inorganic Nanomaterials (11-14/09/2011: Namur).

 <https://dipot.ulb.ac.be/dspace/bitstream/2013/98317/1/Poster ACIN 2011.pdf>

Bruylants, G. (2011). *Isothermal Titration Calorimetry: a valuable tool for the physico-chemical characterisation of (bio)molecular interactions*. Paper session presented at Microcalorimetry on Proteins, Lipids and Micrororganisms (2011-05-19: Copenhagen, Denmark).

2010

Bruylants, G., Bartik, K., & Delplancke, M.-P. (2010). *Controlled self-assembly of gold nanoparticles using nucleic acids*. Poster session presented at Inaugural Meeting « Nanowal » - Wallonia Network for Nanotechnologies (10 décembre 2010: Louvain-la-Neuve (Belgique)).

Bruylants, G., Bartik, K., & Reisse, J. (2010). Fuzzy-Logic and the Search for a Definition of Life. In G. Horneck (Ed.), *In Homage to Darwin's Theory of Evolution: Prebiotic Chemical Evolution: Vol. 40* (pp. 513-513) Origin of Life and Evolution of Biospheres.

 https://dipot.ulb.ac.be/dspace/bitstream/2013/88307/3/EANA_Bruylants.ppt

Bruylants, G. (2010). *Isothermal Titration Calorimetry: a Key Tool for the Understanding of the Thermodynamic Factors Underlying the Remarkable Pairing Properties of Locked Nucleic Acids (LNA)*. Paper session presented at TA Instruments User Meeting (2010-10-27: Antwerpen, Belgique).

 <https://dipot.ulb.ac.be/dspace/bitstream/2013/98326/3/101027-GB-TAMeeting.pdf>

Goursaud, M., Bruylants, G., De Bernardin, P., & Bartik, K. (2010). *TBAF in Organic Solvents: a Brain Teaser*. Poster session presented at Journée Scientifique annuelle de la Société Royale de Chimie : La Chimie Verte (14 octobre 2010: Gembloux (Belgique)).

Van Gasse, B., Gheerardijn, V., Bruylants, G., Bartik, K., Madder, A., & Martins, J. (2010). *Investigation of the Base-Pair Opening Dynamics of a DNA:DNA Duplex Containing a T.T*

Mismatch. Poster session presented at Discussion Meeting and Joint Benelux/German MR Conference(32nd) (20-23 September 2010: Münster (Germany)).

Goursaud, M., Bruylants, G., De Bernardin, P., & Bartik, K. (2010). *TBAF in organic solvents: a brain teaser*. Poster session presented at Discussion Meeting and Joint Benelux/German MR Conference (32nd: 20-23 septembre 2010: Münster (Allemagne)).

De Bernardin, P., Galantini, L., Giuliani, C., Bruylants, G., Bartik, K., & Dalla Cort, A. (2010). *NMR study of salophen-micelle systems*. Poster session presented at Discussion Meeting and Joint Benelux/German MR Conference (32nd: 20-23 septembre 2010: Münster (Allemagne)).

Bruylants, G., Van Gasse, B., Martins, J., Matagne, A., & Bartik, K. (2010). *Probing the effect of LNA nucleotides on the local dynamics of oligonucleotide duplexes by magnetisation transfer experiments*. Poster session presented at Discussion Meeting and Joint Benelux/German MR Conference (32nd: 20-23 septembre 2010: Münster (Allemagne)).

De Bernardin, P., Galantini, L., Giuliani, C., Bruylants, G., Bartik, K., & Dalla Cort, A. (2010). *Physico-chemical characterization of uranyl-salophen micellar systems*. Poster session presented at ISMSC 2010 (6-10 juin 2010: Nara (Japon)).

Bartik, K., Bruylants, G., Dalla Cort, A., De Bernardin, P., Galantini, L., & Giuliani, C. (2010). *Studio chimico-fisico di sistemi salofen uranile micella per il riconoscimento di specie anioniche*. Poster session presented at Convegno Giovani Chimici (IV: 16-17 juin 2010: Rome (Italie)).

Bruylants, G., Bartik, K., & Delplancke, M.-P. (2010). *Growth Kinetics and Controlled Auto-Assembly of Gold Nanoparticles*. Paper session presented at ENCF 2010 : European Conference on Nano Films (2010-03-22 au 2010-03-25: Liège, Belgique).

📄 <https://dipot.ulb.ac.be/dspace/bitstream/2013/74679/1/Gbruyllants-ECNF-FullPaper.pdf>

De Bernardin, P., Cametti, M., Bruylants, G., Dalla Cort, A., & Bartik, K. (2010). *Anion Recognition in Water*. Poster session presented at E-WISPOC 2010 (30 janvier-5 février 2010: Bressanone (Italie)).

2009

De Bernardin, P., Cametti, M., Bruylants, G., Dalla Cort, A., & Bartik, K. (2009). *Recognition of fluoride in water*. Poster session presented at Congresso Nazionale di Chimica Supramolecolare (IX: 6-9 septembre 2009: Parma (Italie)).

Bruylants, G., Bartik, K., Godet, S., & Delplancke, M.-P. (2009). *The Role of Non-Covalent Interactions in the Self-Assembly of Hybrid Organic/Inorganic Nanoparticles into Superlattices*. Paper session presented at Hybrid and Self-Assembly Workshop (2009-03-12: Bruxelles, Belgique).

De Bernardin, P., Cametti, M., Bruylants, G., Dalla Cort, A., & Bartik, K. (2009). *Fluoride Recognition in Water*. Poster session presented at Learning Organic Synthesis Tremendously (LOST II) (2: 18-20 mars 2009: Namur (Belgique)).

2008

Bruylants, G., Snoussi, K., & Bartik, K. (2008). *Stability, pairing selectivity and dynamics of natural and chemically modified oligonucleotide duplexes*. Poster session presented at International Conference on Magnetic Resonance in Biological Systems (XXIII: 24-29 août 2008: San Diego (USA)).

2006

Bruylants, G., Bartik, K., & Redfield, C. (2006). *Study of the protein backbone dynamics by NMR Spectroscopy: Comparison of the homologous proteins hen lysozyme and human β -lactalbumin*. Poster session presented at Meeting of the Belgian Society of Biochemistry and Molecular Biology (194th: 18 décembre 2006: Gembloux (Belgique)).

Bruylants, G., Redfield, C., & Bartik, K. (2006). *Evaluation by NMR & ITC of Protonation Equilibria Linked to Protein-ligand Interactions*. Poster session presented at CCPN Meeting (6th: 28-30 juillet 2006: Ambleside (UK)).

2005

Bruylants, G., & Bartik, K. (2005). *Contribution of Isothermal Titration Calorimetry to the Study of Protonation Equilibria Linked to Protein-ligand Interactions*. Poster session presented at Meeting the Challenges of Drug Discovery; Keystone Symposium (15-20 janvier 2005: Vancouver (Canada)).

2004

Bruylants, G., & Bartik, K. (2004). *Dissecting Apparent Affinity Constants by Isothermal Titration Calorimetry*. Poster session presented at Assemblée Générale de la Société royale de Chimie (7 octobre 2004: Liège (Belgique)).

Bruylants, G., Wylock, C., & Bartik, K. (2004). *Influence of the Protonation Effect on the Thermodynamic Parameters Characterizing the Interaction between Chymotrypsin and Proflavin*. Poster session presented at Applications of Biocalorimetry (IV: 31 août-3 septembre 2004: Budapest (Hongrie)).

Bruylants, G., & Bartik, K. (2004). *Thermodynamic, Intrinsic and Apparent Affinity Constants*. Paper session presented at Applications of Biocalorimetry IV (31 août-3 septembre 2004: Budapest, Hungary).

2003

Bruylants, G., Dehon, G., Wintjens, R., Looze, Y., & Bartik, K. (2003). *Calorimetric and Spectroscopic Study of the Interaction between Proflavin and Various Proteases*. Poster session presented at Biocalorimetry 2003: Current Trends in Microcalorimetry (24-26 juillet 2003: Boston (USA)).

Patents

In press

Retout, M., Bruylants, G., & Jabin, I. (2022). *Nanomaterials Coated with Calixarenes: EP20156678.3*.

📄 <https://dipot.ulb.ac.be/dspace/bitstream/2013/336283/3/patent.pdf>

Theses and master's dissertations

2005

Bruylants, G. (2005). *Etude par calorimétrie à titrage isotherme (ITC) et spectroscopie de résonance magnétique nucléaire (RMN) des effets de protonation liés à l'interaction entre l'alpha-chymotrypsine et la proflavine / Gilles Bruylants* (Unpublished doctoral dissertation). Université libre de Bruxelles, Faculté des sciences appliquées – Chimie, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/210977/1/49b9e583-0cef-4d21-9c8d-d7f2a0f92534.txt>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/210977/4/cb0ea356-f2a3-4606-9486-84b53be0a2dc.txt>

Direction of Ph.D.

2020

Retout, M. (2020). *Design of a no-wash colorimetric biosensor for the detection of the cancer biomarker Mdm2 with plasmonic nanoparticles* (Unpublished doctoral dissertation). Université libre de Bruxelles, Ecole polytechnique de Bruxelles – Chimie et Science des Matériaux, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/314265/4/Table-of-content.pdf>

https://dipot.ulb.ac.be/dspace/bitstream/2013/314265/3/Maurice_retout_Final-thesis.pdf

<https://dipot.ulb.ac.be/dspace/bitstream/2013/314265/5/contratMR.pdf>

2016

Doyen, M. (2016). *Synthèse et fonctionnalisation des nanoparticules d'or et caractérisation de leurs interactions avec des molécules biologiques* (Unpublished doctoral dissertation). Université libre de Bruxelles, Ecole polytechnique de Bruxelles – Chimie et Science des Matériaux, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/224698/3/Tdb-Doyen.pdf>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/224698/4/These-Doyen.pdf>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/224698/5/contratdifusion.pdf>

Member of Ph.D. jury

2016

Brunetti, E. (2016). *Development and physicochemical characterization of calix[6]arene based chemical recognition systems* (Unpublished doctoral dissertation). Université libre de Bruxelles, Ecole polytechnique de Bruxelles – Chimie et Science des Matériaux, Bruxelles.

https://dipot.ulb.ac.be/dspace/bitstream/2013/240961/4/These_finale_DiFFUion.pdf

<https://dipot.ulb.ac.be/dspace/bitstream/2013/240961/3/TableofContentDif.docx>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/240961/5/ContratEB.pdf>

Keymeulen, F. (2016). *Development and physico-chemical characterization of supramolecular systems for anion recognition in aqueous media* (Unpublished doctoral dissertation).

dissertation). Université libre de Bruxelles, Ecole polytechnique de Bruxelles – Chimie et Science des Matériaux, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/223788/3/TableofContents.pdf>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/223788/4/PhDThesisFloreKeymeulenFinal.pdf>

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2013

Goursaud, M. (2013). *Contribution to the development of nano-systems for the recognition of fluoride in water* (Unpublished doctoral dissertation). Université libre de Bruxelles, Ecole polytechnique de Bruxelles – Chimie et Science des Matériaux, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209378/1/c3c09e43-cc61-4975-9fb1-a7faf8880353.txt>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209378/4/bb355c43-f6e4-476e-bb0d-4b504e299de6.txt>

2012

De Bernardin, P. (2012). *Preparation and physico-chemical characterization of supramolecular fluoride receptors based on uranyl-salophen complexes incorporated within micelles* (Unpublished doctoral dissertation). Université libre de Bruxelles, Ecole polytechnique de Bruxelles – Chimie et Science des Matériaux, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209671/9/2d9f9d7c-7d44-4c3f-ab73-2b3130256286.txt>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209671/1/2bee31a4-e809-48a4-acf3-d3be9f643847.txt>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209671/2/8d144457-146a-4450-9336-d323fd2fdb31.txt>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209671/3/528aaef1-ff51-4e33-904d-4b928555bbd8.txt>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209671/4/442155d5-ae59-47e1-8715-589c37be38c6.txt>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209671/5/ec1531cf-469d-402a-82bd-8ba4f28f32a4.txt>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209671/6/cd860a89-8214-432e-bb0c-409d85e3b99e.txt>

Chair of Ph.D. jury

2020

Denis, W. (2020). *Towards Lignin Valorisation: Development of Vanadium-based Catalytic Systems for C-C Oxidative Cleavage in H₂O* (Unpublished doctoral dissertation). Università di Padova, DISC - Dottore di ricerca in Scienze Molecolari, Ecole polytechnique de Bruxelles – Chimie et Science des Matériaux, Bruxelles.

https://dipot.ulb.ac.be/dspace/bitstream/2013/312797/4/Final_Thesis_DENIS_William.pdf

https://dipot.ulb.ac.be/dspace/bitstream/2013/312797/3/thesis_table_contents_DENIS_William.pdf

<https://dipot.ulb.ac.be/dspace/bitstream/2013/312797/5/contratWD.pdf>

Grauwels, G. (2020). *Physico-Chemical Characterisation of Chloride Transmembrane Transport using Calix[6]arene-based Receptors* (Unpublished doctoral dissertation). Université libre de Bruxelles, Ecole polytechnique de Bruxelles – Chimie et Science des Matériaux, Bruxelles.

 <https://dipot.ulb.ac.be/dspace/bitstream/2013/311902/4/TableofContents.pdf>

 <https://dipot.ulb.ac.be/dspace/bitstream/2013/311902/3/PhDThesisGlennGrauwels.pdf>

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