

- Mathilde Aubret, Maud Savonnet, Patricia Laurent, Yoann Roupioz, Myriam Cubizolles, and Arnaud Buhot. Development of an Innovative Quantification Assay Based on Aptamer Sandwich and Isothermal Dumbbell Exponential Amplification. *Analytical Chemistry*, 94(7):3376–3385, February 2022. doi: 10.1021/acs.analchem.1c05532. URL <https://hal.archives-ouvertes.fr/hal-03607957>.
- Maria Genua, Laurie-Amandine Garçon, Yulia Sergeeva, Els Saesen, Benjamin Musnier, Arnaud Buhot, Martial Billon, Evelyne Gout, Rabia Sadir, Hugues Lortat-Jacob, Christine Le Narvor, David Bonnaffé, Thierry Livache, and Yanxia Hou. Discrimination of deletion to point cytokine mutants based on an array of cross-reactive receptors mimicking protein recognition by heparan sulfate. *Analytical and Bioanalytical Chemistry*, 414:551–559, 2022. doi: 10.1007/s00216-021-03516-z. URL <https://hal.archives-ouvertes.fr/hal-03340313>.
- Jonathan Weerakkody, Marielle El Kazzy, Elise Jacquier, Pierre-Henri Elchinger, Raphael Mathey, Wai Li Ling, Cyril Herrier, Thierry Livache, Arnaud Buhot, and Yanxia Hou. Surfactant-like Peptide Self-Assembled into Hybrid Nanostructures for Electronic Nose Applications. *ACS Nano*, 414(1):acs.nano.1c10734, January 2022. doi: 10.1021/acs.nano.1c10734. URL <https://hal.archives-ouvertes.fr/hal-03607954>.
- Thierry Douki and Arnaud Buhot. Synergistic or Antagonist Effects of Different UV Ranges Analyzed by the Combination Index: Application to DNA Photoproducts. *Photochemistry and Photobiology*, September 2021. doi: 10.1111/php.13528. URL <https://hal.archives-ouvertes.fr/hal-03356359>.
- Marielle El Kazzy, Jonathan Weerakkody, Charlotte Hurot, Raphaël Mathey, Arnaud Buhot, Natale Scaramozzino, and Yanxia Hou. An Overview of Artificial Olfaction Systems with a Focus on Surface Plasmon Resonance for the Analysis of Volatile Organic Compounds. *Biosensors*, 11(8):244, August 2021. doi: 10.3390/bios11080244. URL <https://hal.archives-ouvertes.fr/hal-03340297>.
- Lucile Reynaud, Aurélie Bouchet-Spinelli, Jean-marc Janot, Arnaud Buhot, Sebastien Balme, and Camille Raillon. Discrimination of α -Thrombin and γ -Thrombin Using Aptamer-Functionalized Nanopore Sensing. *Analytical Chemistry*, 93(22):7889–7897, June 2021. doi: 10.1021/acs.analchem.1c00461. URL <https://hal.archives-ouvertes.fr/hal-03607965>.
- Abdulghani Ismail, Silvia Voci, Lucie Descamps, Arnaud Buhot, Neso Sojic, Loïc Leroy, and Aurélie Bouchet-Spinelli. Bipolar Electrochemiluminescence Imaging: A Way to Investigate the Passivation of Silicon Surfaces. *ChemPhysChem*, 22(11):1094–1100, June 2021a. doi: 10.1002/cphc.202100112. URL <https://hal.archives-ouvertes.fr/hal-03259694>.
- Abdulghani Ismail, Pascale Pham, Lucie Descamps, Ali Maziz, Emeline Descamps, Thierry Leichlé, Patrice Marche, Thierry Livache, Camille Raillon, Yoann Roupioz, Pascal Mailley, Arnaud Buhot, Loïc Leroy, and Aurélie Bouchet-Spinelli. Contactless Bio-Electrofunctionalization of Planar Micropores. *Advanced Materials Technologies*, 6(6):2001154, June 2021b. doi: 10.1002/admt.202001154. URL <https://hal.archives-ouvertes.fr/hal-03259683>.
- Chenze Lu, Christine Saint-Pierre, Didier Gasparutto, Yoann Roupioz, Corinne Ravelet, Eric Peyrin, and Arnaud Buhot. Melting Curve Analysis of Aptachains: Adenosine Detection with Internal Calibration. *Biosensors*, 11(4):112, April 2021. doi: 10.3390/bios11040112. URL <https://hal.archives-ouvertes.fr/hal-03408407>.
- Maud Savonnet, Tristan Rolland, Myriam Cubizolles, Yoann Roupioz, and Arnaud Buhot. Recent advances in cardiac biomarkers detection: From commercial devices to emerging technologies. *Journal of Pharmaceutical and Biomedical Analysis*, 194:113777, February 2021. doi: 10.1016/j.jpba.2020.113777. URL <https://hal.archives-ouvertes.fr/hal-03408397>.

- Silvia Voci, Abdulghani Ismail, Pascale Pham, Jing Yu, Ali Maziz, Fabien Mesnilgrente, Lucile Reynaud, Thierry Livache, Pascal Mailley, Arnaud Buhot, Thierry Leichle, Alexander Kuhn, Loic Leroy, Aurelie Bouchet-Spinelli, and Neso Sojic. Wireless Enhanced Electrochemiluminescence at a Bipolar Microelectrode in a Solid-State Micropore. *Journal of The Electrochemical Society*, 167(13):137509, October 2020. doi: 10.1149/1945-7111/abbbc1. URL <https://hal.laas.fr/hal-03024426>.
- Sophie Brenet, Jonathan S. Weerakoddy, Arnaud Buhot, Francois-Xavier Gallat, Raphaël Mathey, Loïc Leroy, Thierry Livache, Cyril Herrier, and Yanxia Hou. Improvement of Sensitivity of Surface Plasmon Resonance Imaging for the Gas-Phase Detection of Volatile Organic Compounds. *Talanta*, 212:120777, May 2020. doi: 10.1016/j.talanta.2020.120777. URL <https://hal.archives-ouvertes.fr/hal-02946475>.
- Charlotte Hurot, Natale Scaramozzino, Arnaud Buhot, and Yanxia Hou. Bio-Inspired Strategies for Improving the Selectivity and Sensitivity of Artificial Noses: A Review. *Sensors*, 20(6):1803, March 2020. doi: 10.3390/s20061803. URL <https://hal.archives-ouvertes.fr/hal-02527981>.
- Jonathan Shilanthan Weerakkody, Sophie Brenet, Thierry Livache, Cyril Herrier, Yanxia Hou, and Arnaud Buhot. Optical Index Prism Sensitivity of Surface Plasmon Resonance Imaging in Gas Phase: Experiment versus Theory. *Journal of Physical Chemistry C*, 124(6):3756–3767, January 2020. doi: 10.1021/acs.jpcc.9b09973. URL <https://hal.archives-ouvertes.fr/hal-02485279>.
- Cléo Desmet, Karim Vindas, Ricardo Alvarado Meza, Patrick Garrigue, Silvia Voci, Neso Sojic, Ali Maziz, Rémi Courson, Laurent Malaquin, Thierry Leichle, Arnaud Buhot, Yoann Roupioz, Loic Leroy, and Elodie Engel. Multiplexed Remote SPR Detection of Biological Interactions through Optical Fiber Bundles. *Sensors*, 20(2):511, January 2020. doi: 10.3390/s20020511. URL <https://hal.laas.fr/hal-03023584>.
- Karim Vindas, Arnaud Buhot, Thierry Livache, Patrick Garrigue, Neso Sojic, Loïc Leroy, and Elodie Engel. Enhancing the sensitivity of plasmonic optical fiber sensors by analyzing the distribution of the optical modes intensity. *Optics Express*, 28(20):28740, 2020. doi: 10.1364/OE.399856. URL <https://hal.archives-ouvertes.fr/hal-03118890>.
- Sara Gaggiotti, Charlotte Hurot, Jonathan Weerakkody, Raphaël Mathey, Arnaud Buhot, Marcello Mascini, Yanxia Hou, and Dario Compagnone. Development of an optoelectronic nose based on surface plasmon resonance imaging with peptide and hairpin DNA for sensing volatile organic compounds. *Sensors and Actuators B: Chemical*, 303:127188, January 2020. doi: 10.1016/j.snb.2019.127188. URL <https://hal.archives-ouvertes.fr/hal-02376321>.
- Aurelie Bouchet-Spinelli, Emeline Descamps, Jie Liu, Abdulghani Ismail, Pascale Pham, François Chatelain, Thierry Leichle, Loic Leroy, Patrice Noël Marche, Camille Raillon, André Roget, Yoann Roupioz, Neso Sojic, Arnaud Buhot, Vincent Haguët, Thierry Livache, and Pascal Mailley. Polarization Induced Electro-Functionalization of Pore Walls: A Contactless Technology. *Biosensors*, 9(4):E121, December 2019. doi: 10.3390/bios9040121. URL <https://hal.laas.fr/hal-02382079>.
- Abdulghani Ismail, Silvia Voci, Pascale Pham, Loïc Leroy, Ali Maziz, Lucie Descamps, Alexander Kuhn, Pascal Mailley, Thierry Livache, Arnaud Buhot, Thierry Leichle, Aurelie Bouchet-Spinelli, and Neso Sojic. Enhanced Bipolar Electrochemistry at Solid-State Micropores: Demonstration by Wireless Electrochemiluminescence Imaging. *Analytical Chemistry*, 91(14):8900–8907, July 2019. doi: 10.1021/acs.analchem.9b00559. URL <https://hal.archives-ouvertes.fr/hal-02392368>.
- Karim Vindas, Loic Leroy, Patrick Garrigue, Silvia Voci, Thierry Livache, Stéphane Arbault, Neso Sojic, Arnaud Buhot, and Elodie Engel. Highly parallel remote SPR detection of DNA hybridization by micropillar optical arrays. *Analytical and Bioanalytical Chemistry*, 411(11):2249–2259, April 2019. doi: 10.1007/s00216-019-01689-2. URL <https://hal.archives-ouvertes.fr/hal-02374924>.
- Charlotte Hurot, Sophie Brenet, Arnaud Buhot, Emilie Barou, Christine Belloir, Loïc Briand, and Yanxia Hou. Highly sensitive olfactory biosensors for the detection of volatile organic compounds

by surface plasmon resonance imaging. *Biosensors and Bioelectronics*, 123:230 – 236, January 2019. doi: 10.1016/j.bios.2018.08.072. URL <https://hal.archives-ouvertes.fr/hal-01915890>.

Sophie Brenet, Aurelian John-Herpin, François-Xavier Gallat, Benjamin Musnier, Arnaud Buhot, Cyril Herrier, Tristan Rousselle, Thierry Livache, and Yanxia Hou. Highly-Selective Optoelectronic Nose Based on Surface Plasmon Resonance Imaging for Sensing Volatile Organic Compounds. *Analytical Chemistry*, 90(16):9879 – 9887, July 2018. doi: 10.1021/acs.analchem.8b02036. URL <https://hal.archives-ouvertes.fr/hal-01925324>.

Maxime Huet, Myriam Cubizolles, and Arnaud Buhot. Red Blood Cell Agglutination for Blood Typing Within Passive Microfluidic Biochips. *High-Throughput*, 7(2), June 2018. doi: 10.3390/ht7020010. URL <https://hal.archives-ouvertes.fr/hal-01925316>.

Chenze Lu, Christine Saint-Pierre, Didier Gasparutto, Yoann Roupioz, Eric Peyrin, and Arnaud Buhot. Linear Chain Formation of Split-Aptamer Dimers on Surfaces Triggered by Adenosine. *Langmuir*, 33(44):12785 – 12792, October 2017. doi: 10.1021/acs.langmuir.7b02104. URL <https://hal.archives-ouvertes.fr/hal-01916533>.

Maxime Huet, Myriam Cubizolles, and Arnaud Buhot. Real time observation and automated measurement of red blood cells agglutination inside a passive microfluidic biochip containing embedded reagents. *Biosensors and Bioelectronics*, 93:110 – 117, July 2017. doi: 10.1016/j.bios.2016.09.068. URL <https://hal.archives-ouvertes.fr/hal-01925305>.

Laurie-Amandine Garçon, Maria Genua, Yanjie Hou, Arnaud Buhot, Roberto Calemczuk, Thierry Livache, Martial Billon, Christine Le Narvor, David Bonnaffé, Hugues Lortat-Jacob, and Yanxia Hou. A Versatile Electronic Tongue Based on Surface Plasmon Resonance Imaging and Cross-Reactive Sensor Arrays. *Sensors*, 17(5):1046, May 2017. doi: 10.3390/s17051046. URL <https://hal.archives-ouvertes.fr/hal-01522527>.

Feriel Melaine, Yoann Roupioz, and Arnaud Buhot. Small Molecule SPR Imaging Detection from Split Aptamer Microarrays. *Procedia Technology*, 27:6 – 7, 2017. doi: 10.1016/j.protcy.2017.04.004. URL <https://hal.archives-ouvertes.fr/hal-01925311>.

Timotheé Menais, Stefano Mossa, and Arnaud Buhot. Polymer translocation through nano-pores in vibrating thin membranes. *Scientific Reports*, 6(1), December 2016. doi: 10.1038/srep38558. URL <https://hal.archives-ouvertes.fr/hal-01917228>.

Feriel Melaine, Clothilde Coilhac, Yoann Roupioz, and Arnaud Buhot. A nanoparticle-based thermodynamic aptasensor for small molecule detection. *Nanoscale*, 8(38):16947 – 16954, 2016. doi: 10.1039/c6nr04868d. URL <https://hal.archives-ouvertes.fr/hal-01925342>.

Feriel Melaine, Yoann Roupioz, and Arnaud Buhot. Gold Nanoparticles Surface Plasmon Resonance Enhanced Signal for the Detection of Small Molecules on Split-Aptamer Microarrays (Small Molecules Detection from Split-Aptamers). *Microarrays*, 4(1):41 – 52, March 2015. doi: 10.3390/microarrays4010041. URL <https://hal.archives-ouvertes.fr/hal-01925366>.

Muriel Jourdan, Julia Pingel, Arnaud Buhot, Thierry Livache, and Jean-François Constant. Surface plasmon resonance imaging of the conversion of clustered DNA lesions into double strand breaks by Fpg protein. *AIMS Materials Science*, 2(4):473 – 483, 2015. doi: 10.3934/matricsci.2015.4.473. URL <https://hal.archives-ouvertes.fr/hal-01651414>.

Camille Daniel, Yoann Roupioz, Thierry Livache, and Arnaud Buhot. On the use of aptamer microarrays as a platform for the exploration of human prothrombin/thrombin conversion. *Analytical Biochemistry*, 473:66–71, 2015. doi: 10.1016/j.ab.2014.12.015. URL <https://hal.archives-ouvertes.fr/hal-01589470>.

Maria Genua, Laurie-Amandine Garçon, Violette Mounier, Hillary Wehry, Arnaud Buhot, Martial Billon, Roberto Calemczuk, David Bonnaffé, Yanxia Hou, and Thierry Livache. SPR imaging

based electronic tongue via landscape images for complex mixture analysis. *Talanta*, 130:49 – 54, December 2014. doi: 10.1016/j.talanta.2014.06.038. URL <https://hal.archives-ouvertes.fr/hal-01925388>.

Laurie-Amandine Garçon, Yanjie Hou, Maria Genua, Arnaud Buhot, Roberto Calemczuk, David Bonnaffé, Yanxia Hou, and Thierry Livache. Landscapes of Taste by a Novel Electronic Tongue for the Analysis of Complex Mixtures. *Sensor letters*, 12(6):1059 – 1064, June 2014. doi: 10.1166/sl.2014.3164. URL <https://hal.archives-ouvertes.fr/hal-01925383>.

Yanxia Hou, Maria Genua, Laurie-Amandine Garçon, Arnaud Buhot, Roberto Calemczuk, David Bonnaffé, Hugues Lortat-Jacob, and Thierry Livache. Electronic tongue generating continuous recognition patterns for protein analysis. *Journal of visualized experiments : JoVE*, (91):DOI 10.3791/51901, 2014. doi: 10.3791/51901. URL <https://hal.archives-ouvertes.fr/hal-01072629>.

Carine Brakha, Philippe Arvers, Florent Villiers, Alice Marlu, Arnaud Buhot, Thierry Livache, Roberto Calemczuk, Jean-Pierre Zarski, Christian Villiers, Patrice Marche, and Marie-Bernadette Villiers. Relationship between humoral response against hepatitis C virus and disease overcome. *SpringerPlus*, 3(1):56, 2014. URL <https://www.hal.inserm.fr/inserm-00941342>.

Camille Daniel, Yoann Roupioz, Didier Gasparutto, Thierry Livache, Arnaud Buhot, and Meni Wanunu. Solution-Phase vs Surface-Phase Aptamer-Protein Affinity from a Label-Free Kinetic Biosensor. *PLoS ONE*, 8(9):e75419, September 2013a. URL <https://hal.archives-ouvertes.fr/hal-01983222>.

Andrew Harrison, Hans Binder, Arnaud Buhot, Conrad J Burden, Enrico Carlon, Cynthia Gibas, Lara J Gamble, Avraham Halperin, Jef Hooyberghs, David P Kreil, Rastislav Levicky, Peter A Noble, Albrecht Ott, B Montgomery Pettitt, Diethard Tautz, and Alexander E Pozhitkov. Physico-chemical foundations underpinning microarray and next-generation sequencing experiments. *Nucleic Acids Research*, 41(5):2779–96, March 2013. doi: 10.1093/nar/gks1358. URL <https://hal.archives-ouvertes.fr/hal-00973375>.

Camille Daniel, Ferial Melaine, Yoann Roupioz, Thierry Livache, and Arnaud Buhot. Real time monitoring of thrombin interactions with its aptamers: Insights into the sandwich complex formation. *Biosensors and Bioelectronics*, 40(1):186–192, February 2013b. doi: 10.1016/j.bios.2012.07.016. URL <https://hal-cea.archives-ouvertes.fr/cea-02531637>.

Yanxia Hou, Maria Genua, Dayane TadaBatista, Roberto Calemczuk, Arnaud Buhot, Pauline Fornarelli, Jamal Koubachi, David Bonnaffé, Els Saesen, Cédric Laguri, Hugues Lortat-Jacob, and Thierry Livache. Continuous Evolution Profiles for Electronic-Tongue-Based Analysis. *Angewandte Chemie International Edition*, 51(41):10394–10398, October 2012. doi: 10.1002/anie.201205346. URL <https://hal.archives-ouvertes.fr/hal-02105334>.

Jie Liu, Pascale Pham, Vincent Haguët, Fabien Sauter-Starace, Loïc Leroy, André Roget, Emeline Descamps, Aurélie Bouchet, Arnaud Buhot, Pascal Mailley, and Thierry Livache. Polarization-Induced Local Pore-Wall Functionalization for Biosensing: From Micropore to Nanopore. *Analytical Chemistry*, 84(7):3254–3261, March 2012. URL <https://hal.archives-ouvertes.fr/hal-01985109>.

Julia Pingel, Arnaud Buhot, Roberto Calemczuk, and Thierry Livache. Temperature scans/cycles for the detection of low abundant DNA point mutations on microarrays. *Biosensors and Bioelectronics*, 31(1):554–557, January 2012. URL <https://hal.archives-ouvertes.fr/hal-01985105>.

Christophe Bounaix Morand du Puch, Ewa Barbier, Alexandra Kraut, Yohann Couté, Julia Fuchs, Arnaud Buhot, Thierry Livache, Michel Seve, Alain Favier, Thierry Douki, Didier Gasparutto, Sylvie Sauvaigo, and Jean Breton. TOX4 and its binding partners recognize DNA adducts generated by platinum anticancer drugs. *Archives of Biochemistry and Biophysics*, 507(2):296–303, March 2011. URL <https://hal.archives-ouvertes.fr/hal-01985110>.

- Sarah Milgram, Sandra Cortes, Marie-Bernadette Villiers, Patrice Marche, Arnaud Buhot, Thierry Livache, and Yoann Roupioz. On chip real time monitoring of B-cells hybridoma secretion of immunoglobulin. *Biosensors and Bioelectronics*, 26(5):2728–32, January 2011. doi: 10.1016/j.bios.2010.09.044. URL <https://www.hal.inserm.fr/inserm-00940323>.
- Arnaud Buhot. Viscosity and Renewal Time of Polymer Reptation Models. *Macromolecules*, 43(21): 9155–9159, November 2010. doi: 10.1021/ma1015402. URL <https://hal-cea.archives-ouvertes.fr/cea-02531619>.
- J. Fuchs, J.-B. Fiche, Arnaud Buhot, R. Calemczuk, and T. Livache. Salt Concentration Effects on Equilibrium Melting Curves from DNA Microarrays. *Biophysical Journal*, 99(6):1886–1895, September 2010a. doi: 10.1016/j.bpj.2010.07.002. URL <https://hal-cea.archives-ouvertes.fr/cea-02531617>.
- Julia Fuchs, Daniela Dell’Atti, Arnaud Buhot, Roberto Calemczuk, Marco Mascini, and Thierry Livache. Effects of formamide on the thermal stability of DNA duplexes on biochips. *Analytical Biochemistry*, 397(1):132–134, February 2010b. doi: 10.1016/j.ab.2009.09.044. URL <https://hal-cea.archives-ouvertes.fr/cea-02531612>.
- C. Corne, J.-B. Fiche, V. Cunin, Arnaud Buhot, J. Fuchs, R. Calemczuk, A. Favier, T. Livache, and D. Gasparutto. SPR-imaging based assays on an oligonucleotide-array to analyze DNA lesions recognition and excision by repair proteins. *Nucleic Acids Symposium Series*, 52(1):249–250, September 2008a. doi: 10.1093/nass/nrn126. URL <https://hal-cea.archives-ouvertes.fr/cea-02531609>.
- J. Fiche, J. Fuchs, Arnaud Buhot, R. Calemczuk, and T. Livache. Point Mutation Detection by Surface Plasmon Resonance Imaging Coupled with a Temperature Scan Method in a Model System. *Analytical Chemistry*, 80(4):1049–1057, February 2008. URL <https://hal.archives-ouvertes.fr/hal-01985117>.
- Christelle Corne, Jean-Bernard Fiche, Didier Gasparutto, Valérie Cunin, Emmanuel Suraniti, Arnaud Buhot, Julia Fuchs, Roberto Calemczuk, Thierry Livache, and Alain Favier. SPR imaging for label-free multiplexed analyses of DNA N-glycosylase interactions with damaged DNA duplexes. *Analyst*, 133(8):1036, 2008b. URL <https://hal.archives-ouvertes.fr/hal-01985122>.
- Yeonee Seol, Gary Skinner, Koen Visscher, Arnaud Buhot, and Avraham Halperin. Stretching of Homopolymeric RNA Reveals Single-Stranded Helices and Base-Stacking. *Physical Review Letters*, 98(15), April 2007. URL <https://hal.archives-ouvertes.fr/hal-01985126>.
- J.B. Fiche, Arnaud Buhot, R. Calemczuk, and T. Livache. Temperature Effects on DNA Chip Experiments from Surface Plasmon Resonance Imaging: Isotherms and Melting Curves. *Biophysical Journal*, 92(3):935–946, February 2007. doi: 10.1529/biophysj.106.097790. URL <https://hal-cea.archives-ouvertes.fr/cea-02531595>.
- A. Halperin, Arnaud Buhot, and E. Zhulina. Hybridization at a Surface: The Role of Spacers in DNA Microarrays. *Langmuir*, 22(26):11290–11304, December 2006a. doi: 10.1021/la0616606. URL <https://hal-cea.archives-ouvertes.fr/cea-02531589>.
- A. Halperin, Arnaud Buhot, and E. Zhulina. Hybridization at a Surface: The Role of Spacers in DNA Microarrays. *Langmuir*, 22(26):11290–11304, December 2006b. URL <https://hal.archives-ouvertes.fr/hal-01985132>.
- A. Halperin, Arnaud Buhot, and E. Zhulina. On the hybridization isotherms of DNA microarrays: the Langmuir model and its extensions. *Journal of Physics: Condensed Matter*, 18(18):S463–S490, May 2006c. doi: 10.1088/0953-8984/18/18/S01. URL <https://hal-cea.archives-ouvertes.fr/cea-02531576>.
- A. Halperin, Arnaud Buhot, and E. Zhulina. On the hybridization isotherms of DNA microarrays: the Langmuir model and its extensions. *Journal of Physics: Condensed Matter*, 18(18):S463–S490, May 2006d. URL <https://hal.archives-ouvertes.fr/hal-01985138>.

- Arnaud Buhot. Exact curvilinear diffusion coefficients in the repton model. *European Physical Journal E: Soft matter and biological physics*, 18(2):239–244, October 2005a. URL <https://hal.archives-ouvertes.fr/hal-01985144>.
- A. Halperin, Arnaud Buhot, and E.B. Zhulina. Brush Effects on DNA Chips: Thermodynamics, Kinetics, and Design Guidelines. *Biophysical Journal*, 89(2):796–811, August 2005a. doi: 10.1529/biophysj.105.063479. URL <https://hal-cea.archives-ouvertes.fr/cea-02531570>.
- A. Halperin, Arnaud Buhot, and E.B. Zhulina. Brush Effects on DNA Chips: Thermodynamics, Kinetics, and Design Guidelines. *Biophysical Journal*, 89(2):796–811, August 2005b. URL <https://hal.archives-ouvertes.fr/hal-01985140>.
- Arnaud Buhot. Cluster algorithm for nonadditive hard-core mixtures. *Journal of Chemical Physics*, 122(2):024105, January 2005b. URL <https://hal.archives-ouvertes.fr/hal-01985143>.
- Arnaud Buhot and A. Halperin. Hybridization Isotherms of DNA Microarrays and the Quantification of Mutation Studies. *Clinical Chemistry*, 50(12):2254–2262, December 2004. URL <https://hal.archives-ouvertes.fr/hal-01985145>.
- A. Halperin, Arnaud Buhot, and E.B. Zhulina. Sensitivity, Specificity, and the Hybridization Isotherms of DNA Chips. *Biophysical Journal*, 86(2):718–730, February 2004. URL <https://hal.archives-ouvertes.fr/hal-01985148>.
- Arnaud Buhot. Kovacs effect and fluctuation–dissipation relations in 1D kinetically constrained models. *Journal of Physics A: Mathematical and General (1975 - 2006)*, 36(50):12367–12377, December 2003. URL <https://hal.archives-ouvertes.fr/hal-01985149>.
- Arnaud Buhot, Juan Garrahan, and David Sherrington. Simple strong glass forming models: mean-field solution with activation. *Journal of Physics A: Mathematical and General (1975 - 2006)*, 36(2):307–328, January 2003a. doi: 10.1088/0305-4470/36/2/302. URL <https://hal-cea.archives-ouvertes.fr/cea-02531522>.
- Arnaud Buhot, Juan Garrahan, and David Sherrington. Simple strong glass forming models: mean-field solution with activation. *Journal of Physics A: Mathematical and General (1975 - 2006)*, 36(2):307–328, January 2003b. URL <https://hal.archives-ouvertes.fr/hal-01985151>.
- Arnaud Buhot and Juan Garrahan. Fluctuation-Dissipation Relations in the Activated Regime of Simple Strong-Glass Models. *Physical Review Letters*, 88(22), May 2002a. URL <https://hal.archives-ouvertes.fr/hal-01985153>.
- Arnaud Buhot and Avraham Halperin. Extension Behavior of Helicogenic Polypeptides. *Macromolecules*, 35(8):3238–3252, April 2002. URL <https://hal.archives-ouvertes.fr/hal-01985156>.
- David Sherrington, Lexie Davison, Arnaud Buhot, and Juan Garrahan. Glassy behaviour in simple kinetically constrained models: topological networks, lattice analogues and annihilation-diffusion. *Journal of Physics: Condensed Matter*, 14(7):1673–1682, February 2002. doi: 10.1088/0953-8984/14/7/323. URL <https://hal-cea.archives-ouvertes.fr/cea-02531499>.
- Arnaud Buhot and Juan Garrahan. Crossover from fragile to strong glassy behaviour in the spin facilitated chain model. *Journal of Physics: Condensed Matter*, 14(7):1499–1507, February 2002b. doi: 10.1088/0953-8984/14/7/308. URL <https://hal-cea.archives-ouvertes.fr/cea-02531542>.
- Arnaud Buhot and Juan Garrahan. Crossover from fragile to strong glassy behaviour in the spin facilitated chain model. *Journal of Physics: Condensed Matter*, 14(7):1499–1507, February 2002c. URL <https://hal.archives-ouvertes.fr/hal-01985158>.
- Arnaud Buhot, Mirta Gordon, and Jean-Pierre Nadal. Rigorous Bounds to Retarded Learning. *Physical Review Letters*, 88(9), February 2002. doi: 10.1103/PhysRevLett.88.099801. URL <https://hal-cea.archives-ouvertes.fr/cea-02531504>.

- Arnaud Buhot and Juan Garrahan. Crossover from fragile to strong glassy behavior in kinetically constrained systems. *Physical Review E*, 64(2), July 2001. URL <https://hal.archives-ouvertes.fr/hal-01985161>.
- Arnaud Buhot and Mirta Gordon. Robust learning and generalization with support vector machines. *Journal of Physics A: Mathematical and General (1975 - 2006)*, 34(21):4377–4388, June 2001. doi: 10.1088/0305-4470/34/21/301. URL <https://hal-cea.archives-ouvertes.fr/cea-02531374>.
- Lexie Davison, David Sherrington, Juan Garrahan, and Arnaud Buhot. Glassy behaviour in a 3-state spin model Glassy behaviour in a 3-state spin model. *Journal of Physics A: Mathematical and General J. Phys. A: Math. Gen.*, 34:5147 – 5182, 2001. URL <https://hal-cea.archives-ouvertes.fr/cea-02531535>.
- Arnaud Buhot and A. Halperin. On the helix-coil transition in grafted chains. *EPL - Europhysics Letters*, 50(6):756–761, June 2000a. doi: 10.1209/epl/i2000-00545-8. URL <https://hal-cea.archives-ouvertes.fr/cea-02531420>.
- Arnaud Buhot and Mirta Gordon. Storage capacity of a constructive learning algorithm. *Journal of Physics A: Mathematical and General (1975 - 2006)*, 33(9):1713–1727, March 2000. doi: 10.1088/0305-4470/33/9/301. URL <https://hal-cea.archives-ouvertes.fr/cea-02531433>.
- Arnaud Buhot and A. Halperin. Extension of Rod-Coil Multiblock Copolymers and the Effect of the Helix-Coil Transition. *Physical Review Letters*, 84(10):2160–2163, March 2000b. doi: 10.1103/PhysRevLett.84.2160. URL <https://hal-cea.archives-ouvertes.fr/cea-02531366>.
- Arnaud Buhot. Buhot Replies:. *Physical Review Letters*, 84(8):1841–1841, February 2000. doi: 10.1103/PhysRevLett.84.1841. URL <https://hal-cea.archives-ouvertes.fr/cea-02531362>.
- Arnaud Buhot and Werner Krauth. Phase separation in two-dimensional additive mixtures. *Physical Review E*, 59(3):2939–2941, March 1999. doi: 10.1103/PhysRevE.59.2939. URL <https://hal-cea.archives-ouvertes.fr/cea-02531354>.
- Arnaud Buhot. Packing Fraction at Phase-Separation Transition in Hard-Core Mixtures. *Physical Review Letters*, 82(5):960–963, February 1999a. doi: 10.1103/PhysRevLett.82.960. URL <https://hal-cea.archives-ouvertes.fr/cea-02531344>.
- Mirta Gordon and Arnaud Buhot. Bayesian learning versus optimal learning. *Physica A: Statistical Mechanics and its Applications*, 257(1-4):85–98, August 1998. doi: 10.1016/S0378-4371(98)00130-7. URL <https://hal-cea.archives-ouvertes.fr/cea-02531339>.
- Arnaud Buhot and Werner Krauth. Numerical Solution of Hard-Core Mixtures. *Physical Review Letters*, 80(17):3787–3790, April 1998. doi: 10.1103/PhysRevLett.80.3787. URL <https://hal-cea.archives-ouvertes.fr/cea-02531277>.
- Arnaud Buhot and Mirta Gordon. Phase transitions in optimal unsupervised learning. *Physical Review E*, 57(3):3326–3333, March 1998. doi: 10.1103/PhysRevE.57.3326. URL <https://hal-cea.archives-ouvertes.fr/cea-02531330>.
- Arnaud Buhot, Juan-Manuel Torres Moreno, and Mirta Gordon. Finite size scaling of the Bayesian perceptron. *Physical Review E*, 55(6):7434–7440, June 1997. doi: 10.1103/PhysRevE.55.7434. URL <https://hal-cea.archives-ouvertes.fr/cea-02531315>.
- Marielle El Kazzy, Charlotte Hurot, Jonathan S. Weerakkody, Arnaud Buhot, and Yanxia Hou. Biomimetic olfactory biosensors and bioelectronic noses. In *Advances in Biosensors: Reviews*, volume 3, pages 15–63. November 2020. URL <https://hal.archives-ouvertes.fr/hal-03340460>.
- Sophie Brenet, Aurélian John-Herpin, Francois-Xavier Gallat, Arnaud Buhot, Thierry Livache, Cyril Herrier, Tristan Rousselle, and Yanxia Hou. *Development of a novel multiplexed optoelectronic nose for analysis of volatile organic compounds*. IEEE, 2019. URL <https://hal.archives-ouvertes.fr/hal-02107984>.

Arnaud Buhot. *Etude de propriétés d'apprentissage supervisé et non supervisé par des méthodes de Physique Statistique*. Theses, Université Joseph-Fourier - Grenoble I, May 1999b. URL <https://tel.archives-ouvertes.fr/tel-00001642>. Bertrand Fourcade (Président du Jury) David Sherrington (Rapporteur) Jean-Pierre Nadal (Rapporteur) Elisabeth Dubois-Violette Chris Van den Broeck Mirta B. Gordon (Directrice de thèse).