

Liste des publications

Année 2006

1. *Effect of cross-linking on the elasticity of polyelectrolyte multilayer films measured by colloidal probe AFM*, Francius, G.; Hemmerlé, J.; Ohayon, J.; Schaaf, P.; Voegel, J.C.; Picart, C. and Senger, B. *Microscopy Research and Technique* **69** 84-92 (2006)
2. *Polyelectrolyte multilayers with a tunable Young's modulus: Influence of film stiffness on cell adhesion*, Schneider, A.; Francius, G.; Obeid, R.; Schwinté, P.; Hemmerlé, J.; Frisch, B.; Schaaf, P.; Voegel, J.C.; Senger, B. and Picart, C. *Langmuir* **22** 1193-1200 (2006)
3. *AFM force spectroscopy of the fibrinogen adsorption process onto dental implants*, Boukari, A.; Francius, G.; and Hemmerlé, J. *Journal of Biomedical Materials Research: Part A*. **78** 466-472 (2006)
4. *Control of the drug accessibility on functional polyelectrolyte multilayer films*, Vodouhe, C.; Leguen, E.; Mendez Garza, J.; Francius, G.; Dejugnat, C.; Ogier, J.; Schaaf, P.; Voegel, J.C. and Lavalle, P. *Biomaterials*, **27** 4149-4156 (2006)
5. *Glycosylated polyelectrolyte multilayer films: differential adhesion of primary versus tumor cells*, Schneider, A.; Bolcato, A.L.; Francius, G.; Jedrzejwska, J.; Schaaf, P.; Voegel, J.C.; Frisch, B. and Picart, P. *Biomacromolecules*, **7** 2882-2889 (2006)
6. *Shear mechanical anisotropy of side chain liquid-crystal elastomers: Influence of sample preparation*, Rogez, D.; Francius, G.; Finkelmann, H. and Martinoty, P. *The European Physical Journal E – Soft Matter*, **20** 369-378 (2006)

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1. *Multifunctional Polyelectrolyte Multilayer Films: Combining Mechanical Resistance, Biodegradability and Bioactivity*, Schneider, A.; Vodouhe, C.; Richert, L.; Francius, G.; Le Guen, E.; Schaaf, P.; Voegel, J.-C.; Frisch, B. and Picart, C. *Biomacromolecules*, **8** 139-145 (2007)
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3. *Stiffening of soft polyelectrolyte architectures by multilayer capping evidenced by viscoelastic modeling based on AFM indentation measurements*, Francius, G.; Hemmerlé, J.; Lavalle, P.; Ball, V.; Picart, C.; Schaaf, P.; Voegel, J.-C. and Senger, B. *Journal of Physical Chemistry C*, **111** 8299-8306 (2007)
4. *Elasticity, biodegradability and cell adhesive properties of chitosan/hyaluronan multilayer films*, Schneider, A.; Richert, L.; Francius, G.; Voegel, J.-C.; Picart, C. *Biomedical Materials*, **2**, S45-S51 (2007)

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Année 2008

1. *Nanoscale membrane activity of surfactins: Influence of geometry, charge and hydrophobicity*, Francius, G.; Dufour, S.; Deleu, M.; Paquot, M. and Dufrêne, Y-F. *Biochimica et Biophysica Acta – Biomembranes*, **1778** 2058-2068 (2008)
2. *Nanostructure and nanomechanics of live *Phaeodactylum tricornutum* morphotypes*, Francius, G.; Tesson, B.; Dague, E.; Martin-Jézéquel, V. and Dufrêne, Y-F. *Environmental Microbiology*, **10** 1344-1356 (2008)
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4. *Detection, localization and conformational analysis of single polysaccharide molecules on live bacteria*, Francius, G., Lebeer, S.; Alsteens, D.; Wildling, L.; Gruber, J.H.; Hols, P.; De Keersmaecker, S.C.J.; Vanderleyden, J. and Dufrêne Y. F. *ACS Nano* **2** 1921-1929 (2008)
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2. *Identification of a Gene Cluster for the Biosynthesis of a Long, Galactose-Rich Exopolysaccharide in *Lactobacillus rhamnosus* GG and Functional Analysis of the Priming Glycosyltransferase*, Lebeer S.; Verhoeven TLA.; Francius G., Schoofs G.; Lambrichts I.; Dufrene YF.; Vanderleyden J. and De Keersmaecker SCJ. *Applied and Environmental Microbiology*, **75** 3554-3563 (2009)
3. *Stretching polysaccharides on live cells using single molecule force spectroscopy*, Francius G.; Alsteens D.; Dupres V.; Lebeer S.; De Keersmaecker SCJ.; Gruber HJ. and Dufrene YF. *Nature Protocols*, **4** 939-946 (2009)
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5. *Imaging Chemical Groups and Molecular Recognition Sites on Live Cells Using AFM*, Alsteens, D.; Duprès, V.; Dague, E.; Verbelen, C.; Andre, G.; Francius, G. and Dufrêne, Y. F., In *Applied Scanning Probe Methods XII: Characterization*, Bhushan, B.; Fuchs, H., Eds. Springer-Verlag Berlin: Berlin, 33-48 (2009).

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1. *Imaging Chemical Groups and Molecular Recognition Sites on Live Cells Using AFM*, Alsteens, D.; Duprès, V.; Dague, E.; Verbelen, C.; Andre, G.; Francius, G. and Dufrêne, Y. F., *Biosystems investigated by scanning probe microscopy*, 463-478 (2010).

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2. *Bacterial surface appendages strongly impact nanomechanical and electrokinetic properties of Escherichia coli cells subjected to osmotic stress*, Francius, G.; Polyakov, P.; Merlin, J.; Abe, Y.; Ghigo, J-M.; Merlin, C.; Beloin, C.; Duval, J.F.L. *PLoS One*, **6**, e20066 (2011)
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2. *Surface properties of bacteria sensitive and resistant to the class IIa carnobacteriocin Cbn BM1*, Jacquet, T.; Cailliez-Grimal, C.; Borges, F.; Gaiani, C.; Francius, G.; Duval, J.; Waldvogel, Y. and Revol-Junelles A-M. *Journal of Applied Microbiology*, **112**, 372-382 (2012)
3. *Polyethyleneimine-mediated flocculation of Shewanella oneidensis MR-1: Impacts of cell surface appendage and polymer concentration*, Krapf, M.E.M.; Lartiges, B.M.; Merlin, C.; Francius, G.; Ghanbaja, J. and Duval, J.F.L. *Water Research*, **46**, 1836-1846 (2012)
4. *Antibacterial activity of class IIa bacteriocin Cbn BM1 depends on the physiological state of the target bacteria*. Jacquet, T. ; Cailliez-Grimal, C. ; Francius, G. ; Borges, F. ; Imran, M. ; Duval, J.F.L. and Revol-Junelles, A.M. *Research in Microbiology*, **163**, 323-331 (2012)
5. *Production of Extracellular Glycogen by Pseudomonas fluorescens: Spectroscopic Evidence and Conformational Analysis by Biomolecular Recognition*. Quilès, F. ; Polyakov, P. ; Humbert, F. and Francius, G. *Biomacromolecules*, **13**, 2118-2127 (2012)

6. *Accumulation of MS2, GA, and Qbeta phages on high density polyethylene (HDPE) and drinking water biofilms under flow/non-flow conditions*, Pelleieux, S.; Bertrand, I.; Skali-Lami, S.; Mathieu, L.; Francius, G.; Gantzer, C., *Water Research*, **46**, 6574-6584 (2012)
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1. *Biomimetic Cryptic Site Surfaces for Reversible Chemo- and Cyto-Mechanoresponsive Substrates*. Bacharouche, J.; Badique, F.; Fahs, A.; Spanedda, M. V.; Geissler, A.; Malval, J.-P.; Vallat, M.-F.; Anselme, K.; Francius, G.; Frisch, B.; Hemmerlé, J.; Schaaf, P.; Roucoules, V., *ACS Nano*, **7**, 3457-3465 (2013)
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3. *Thermo-Regulated Adhesion of the Streptococcus thermophilus Argg0182 Strain*. Francius, G.; Henry, R.; Duval, J. F. L.; Bruneau, E.; Merlin, J.; Fahs, A.; Leblond-Bourget, N., *Langmuir*, **29**, 4847-4856 (2013)
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1. *Double Entrapment of VEGF by PCL nanoparticles loaded into Polyelectrolyte multilayer films*. Vrana, N. E.; Erdemli, O.; Francius, G.; Fahs, A.; Rabineau, M.; Debry, C.; Tezcaner, A.; Keskin, D.; Lavalle, P., *Journal of Material Chemistry B*, **2**, 999-1008 (2014)
2. *Dynamic modulation of fimbrial extension and FimH-Mannose binding force on live bacteria under pH changes: a molecular AFM analysis*. Jacquot, A.; Sakamoto, C.; Razafitianamaharavo, A.; Caillet, C.; Merlin, J.; Fahs, A.; Ghigo, J. M.; Duval, J.F.L.; Francius, G., *Journal of Biomedical Nanotechnology*, **10**, 3361-3372 (2014)
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5. *Formation and mechanical properties of membranes formed at the surface of walnut stain extract solutions.* Apaydin, K.; Mathieu, E.; Fabre, R.; Laachachi, A.; Ball, V.; Francius, G., *Journal of Bionanoscience*, **8**, 425-432 (2014)
6. *Significance of bacterial surface molecules interactions with milk proteins to enhance microencapsulation of Lactobacillus rhamnosus GG.* Burgain, J.; Scher, J.; Lebeer, S.; Vanderleyden, J.; Cailliez-Grimal, C.; Corgneau, M.; Francius, G.; Gaiani, C. *Food Hydrocolloids*, **41**, 60-70 (2014)
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10. *Morphological and physical analysis of phospholipids-based biomembranes.* Jacquot, A.; Francius, G.; Razafitianamaharavo, A.; Linder, M.; Arab-Tehrany, E. *PlosOne*, **9**, e107435 (2014)
11. *Is it possible to modulate the structure of skim milk particle through drying process and parameters?* Nikolova, Y.; Petit, J.; Sanders, C.; Gianfrancesco, A.; Desbenoit, N.; Frache, G.; Francius, G.; Scher, J.; Gaiani, C., *Journal of Food Engineering*, **142**, 179-189 (2014)
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2. *Atomic force microscopy analysis of IgG films at hydrophobic surfaces: A promising method to probe IgG orientations and optimize ELISA tests performance.* De Thier, P.; Bacharouche, J.; Skali-Lami, S. Duval, J.F.L.; Francius, G., *Biochimica et Biophysica Acta – Proteins and Proteomics*, **1854**, 138-145 (2015)

3. *Multivalency: Influence of the Residence Time and the Retraction Rate on Rupture Forces Measured by AFM.* Bacharouche, J.; Degardin, M.; Jierry, L.; Carteret, C.; Lavalle, P.; Hemmerle, J.; Senger, B.; Auzely-Velty, R.; Boulmedais, F.; Boturyn, D.; Guerente, L.; Schaaf, P.; Francius, G. *Journal of Material Chemistry B*, **3**, 1801-1812 (2015)
4. *Priming cells for their final destination: microenvironment controlled cell culture by a modular ECM-mimicking feeder film.* Barthes, J.; Vrana, N. E.; Ozcelik, H.; Gahoual, R.; Francois, Y. N.; Bacharouche, J.; Francius, G.; Hemmerle, J.; Metz-Boutigue, M.-H.; Schaaf, P.; Lavalle, P. *Biomaterials Science*, **3**, 1302-1311 (2015)
5. *Impacts of pH-mediated EPS structure on probiotic bacterial pili-whey proteins interactions.* Burgain, J.; Scher, J.; Lebeer, S.; Vanderleyden, J.; Corgneau, M.; Guerin, J.; Caillet, C.; Duval, J.; Francius, G.; Gaiani, C. *Colloids and surfaces. B, Biointerfaces*, **135**, 332-338 (2015)
6. *The damaged DNA binding 2 protein: a new modulator of TGF beta-1 signaling pathway and membrane nanomechanics in breast cancer cells.* Barbieux, C.; Francius, G.; Klotz, R.; Besancenot, V.; Brunner, E.; Soussen, C.; Brie, D.; Kaminski, S.; Becuwe, P.; Grandemange, S., *FEBS Journal*, **282**, 36-36 (2015)

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8. *Immunomodulation with Self-Crosslinked Polyelectrolyte Multilayer-Based Coatings*. Knopf-Marques, H.; Singh, S.; Htwe, SS.; Wolfova, L.; Buffa, R.; Bacharouche, J.; Francius, G.; Voegel, JC; Schaaf, P.; Ghaemmaghami, AM.; Vrana, NE.; Laval, P., *Biomacromolecules*, **17**, 2189-2198 (2016)
9. *Links between particle surface hardening and rehydration impairment during micellar casein powder storage*. Burgain, J.; Scher, J.; Petit, J.; Francius, G.; Gaiani., *Food Hydrocolloids*, **61**, 277–285 (2016)
10. *Nanoscale investigation of the interaction of colistin with model phospholipid membranes by Langmuir technique, and combined infrared and force spectroscopies*. Freudenthal, O.; Quilès, F.; Francius, G.; Wojszko, K.; Gorczyca, M.; Korchowiec, B.; Rogalska, E., *Biochimica et Biophysica Acta (BBA) - Biomembranes*, **1858**, 2592-2602 (2016)
11. *Bacterial repopulation of drinking water pipe walls after chlorination*. Mathieu, L.; Francius, G.; El Zein, R. ; Block, J-C., *Biofouling*, **32**, 925-934 (2016)
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4. *Auxiliary biomembranes as a directional delivery system to control biological events in cell-laden tissue engineering scaffolds*. Knopf-Marques, H.; Barthès, J.; Wolfova, L.; Vidal, B.; Koenig, G.; Bacharouche, J.; Francius, G.; Sadam, H.; Liivas, U.; Laval, P.; Vrana, N.E. *ACS Omega*, **2**, 918-929, (2017)
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1. *Structure-Reactivity Requirements with Respect to Nickel-Salen Based Polymers for Enhanced Electrochemical Stability.* Łepicka, K.; Pieta, P.; Francius, G.; Walcarius, A.; Kutner, W. *Electrochim. Acta*, **315**, 75-83, (2019)
2. *Adhesive interactions between lactic acid bacteria and β -lactoglobulin: specificity and impact on bacterial location in whey protein isolate.* Gomand, F., Borges, F., Guerin, J., El Kirat Chatel, S., Francius, G., Dumas, D., Burgain, J., Gaiani. *Frontiers in Microbiology*, **10**, 1512, (2019)
3. *The surface properties of milk fat globules govern their interactions with the caseins: role of homogenization and pH probed by AFM force spectroscopy.* Obeid, S., Guyomarc'h, F., Francius, G., Guillemin, H., Wua, X., Pezennec, S., Famelart, M-H., Cauty, C., Gaucheron, F., Lopez, C. *Colloids and Surfaces B*, **182**, 11036,3 (2019)
4. *Mesoporous silica templated-albumin nanoparticles with high doxorubicin payload for drug delivery assessed with a 3-D tumor cell model.* Ménard, M.; Meyer, F.; Parkhomenko, K.; Leuvrey, C.; Francius, G.; Bégin-Colin, S.; Mertz, D. *BBA General Subjects*, **1863**, 332-341, (2019)

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