List of publications of Pierre Lambert

List fulfilling the Guide for applicants 2018's requirements

1. Published works, as an author, a co-author or a publisher

1. **Lambert, P.**, et al. (2013, September 30). *Surface Tension Effects in Microsystems: Engineering Below the Capillary Length*. Springer.

2. **Lambert, P.**, & Raman, V. (2009, February). *Recueil d'exercices pour le cours de mécanique rationnelle*. Presses Universitaires de Bruxelles.

3. **Lambert, P.** (2007). *Capillary Forces in Microassembly*. NY: Springer.

4. **Lambert, P.** (2004, April). *Mécanique appliquée: Notes de cours à l'attention des étudiants de première candidature HORTA*. Presses universitaires de Bruxelles.

2. Book chapters or participation to a collective book, as an author or a co-author of the section

1. Mastrangeli, M., & **Lambert, P.** (2013). Lateral capillary forces. In *Surface Tension in Microsystems: Engineering Below the Capillary Length* (1 ed., pp. 45-69). Springer. https://dipot.ulb.ac.be/dspace/bitstream/2013/152633/1/MastrangeliCh3.pdf

2. **Lambert, P.**, & Régnier, S. (2011, January). Microworld Modeling in Vacuum and Gaseous Environments. In *Robotic Microassembly* (pp. 1-54). Piscataway: John Wiley and Sons. doi:10.1002/9780470634417.ch1

3. **Lambert, P.**, & Régnier, S. (2011, January). Microworld Modeling: Impact of Liquid and Roughness. In *Robotic Microassembly* (pp. 55-105). Piscataway: John Wiley and Sons. doi:10.1002/9780470634417.ch2

4. Chaillet, N., Hafez, M., & **Lambert, P.** (2010). Actuators for Microrobotics. In *Microrobotics for micromanipulation* (1 ed., pp. 99-178). Wiley. doi:10.1002/9781118622810.ch2

5. Gauthier, M., **Lambert, P.**, & Régnier, S. (2010). Microhandling and Micromanipulation Strategies. In *Microrobotics for micromanipulation* (1 ed., pp. 179-242). Wiley. doi:10.1002/9781118622810.ch3

6. Gauthier, M., **Lambert, P.**, & Régnier, S. (2010). The Physics of the Microworld. In *Microrobotics for micromanipulation* (1 ed., pp. 1-98). Wiley. doi:10.1002/9781118622810.ch1

7. Chau, A., **Lambert, P.**, Delchambre, A., & Bouillard, P. (2003). Behaviour of Flexure Hinges for Use as Articulations in High Precision Mechanisms. In H. Knobloch & Y. Kaminorz (Eds.), *MicroNano Integration* (pp. 287-288). Postdam: Springer.(VDI-Buch). doi:10.1007/978-3-642-18727-8_42

8. **Lambert, P.**, Chaillet, N., & Hafez, M. (s.d.). La microrobotique: applications à la micromanipulation. In *Actionneurs pour la microrobotique*. Editions Hermès.

9. Régnier, S., Chaillet, N., & **Lambert, P.** (s.d.). La microrobotique: applications à la micromanipulation. In *Micropréhension et stratégies de micromanipulation*. Editions Hermès.

10. Agnus, J., Chaillet, N., Hafez, M., Gauthier, M., **Lambert, P.**, & Régnier, S. (s.d.). La microrobotique: applications à la micromanipulation. In *La physique du micromonde*.

3. Articles published in peer-review journals

1. Terrazas Mallea, R., Bolopion, A., Beugnot, J.-C., **Lambert, P.**, & Gauthier, M. (2018, June 13). Closed-loop particle motion control using laser-induced thermocapillary convective flows at the fluid/gas interface at micrometric scale. *IEEE/ASME transactions on mechatronics*.
https://dipot.ulb.ac.be/dspace/bitstream/2013/271743/3/terrazas2018_TMECH2843887_WithChanges.pdf

2. Dehaeck, S., **Lambert, P.**, & Scheid, B. (2018, April 25). Adaptive Stitching for Meso-Scale Printing with Two-Photon Lithography. *Additive Manufacturing*, *21*, 589-597.

3. Terrazas Mallea, R., Bolopion, A., Beugnot, J.-C., **Lambert, P.**, & Gauthier, M. (2017, December). 1D manipulation of a micrometer size particle actuated via thermocapillary convective flows. *Proceedings of the ... IEEE/RSJ International Conference on Intelligent Robots and Systems*, *2017-September*, 8202187, 408-413. doi:10.1109/IROS.2017.8202187

4. Compère, P., **Lambert, P.**, Gernay, S., Labousse, S., & Gilet, T. (2017, November 08). Multiscale tarsal adhesion kinematics of freely-walking dock beetles. *Journal of the Royal Society interface*.

5. Toncheva, A., Willocq, B., Khelifat, F., Douhéret, O., **Lambert, P.**, Dubois, P., & Raquez, J.-M. (2017, November 01). Bilayer solvent and vapor-triggered actuators made of cross-linked polymer architectures via Diels-Alder pathways. *Journal of materials chemistry. B*, *5*(28), 5556-5563. doi:10.1039/c7tb01661a

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7. Innocenti, B., Larrieu, J.-C., **Lambert, P.**, & Pianigiani, S. (2017, October). Automatic characterization of soft tissues material properties during mechanical tests. *Muscles, Ligaments and Tendons Journal*, *7*(4), 529-537.

8. Wang, J.-P., Francois, B., & **Lambert, P.** (2017, September 10). Equations for hydraulic conductivity estimation from particle size distribution: A dimensional analysis. *Water resources research*, *53*(9), 8127-8134. doi:10.1002/2017WR020888

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9. Wang, J.-P., Hu, N., Francois, B., & **Lambert, P.** (2017, September 01). Estimating Water Retention Curves and Strength Properties of Unsaturated Sandy Soils from Basic Soil Gradation Parameters. *Water resources research*, *53*(7), 6069-6088. doi:10.1002/2017WR020411
https://dipot.ulb.ac.be/dspace/bitstream/2013/253734/3/WRR_paper.pdf

10. Blanc, L., Delchambre, A., & **Lambert, P.** (2017, July 11). Flexible Medical Devices: Review of Controllable Stiffness Solutions. *Actuators*, *6*(3), 23. doi:10.3390/act6030023
https://dipot.ulb.ac.be/dspace/bitstream/2013/254519/3/actuators-06-00023.pdf

11. Terrazas Mallea, R., Bolopion, A., Beugnot, J.-C., **Lambert, P.**, & Gauthier, M. (2017, April). Laser-induced thermocapillary convective flows: A new approach for non-contact actuation at microscale at the fluid/gas interface. *IEEE/ASME transactions on mechatronics*, *22*(2), 693-704. doi:10.1109/TMECH.2016.2639821

12. Munoz, E., Quispe, J., **Lambert, P.**, Bolopion, A., Terrazas Mallea, R., Régnier, S., & Vela, E. (2017, March 20). Optimizing the Speed of Single Infrared-Laser-Induced Thermocapillary Flows Micromanipulation by Using Design of Experiments. *Journal of micro-bio robotics*. doi:10.1007/s12213-017-0097-3

13. Fernandez Toledano, J. C., Blake, T., **Lambert, P.**, & De Coninck, J. (2017, March 14). On the cohesion of fluids and their adhesion to solids: Young's equation at the atomic scale. *Advances in colloid and interface science*. doi:10.1016/j.cis.2017.03.006
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14. Mastrangeli, M., Zhou, Q., Sariola, V., & **Lambert, P.** (2017). Surface Tension-driven Self-Alignment. *Soft matter*, *13*, 304-327. doi:10.1039/c6sm02078j
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15. Ribaut, C., Loyez, M., Larrieu, J.-C., Chevineau, S., **Lambert, P.**, Remmelink, M., Wathiez, R., & Caucheteur, C. C. (2017). Cancer biomarker sensing using packaged plasmonic optical fiber gratings : towards in vivo diagnosis. *Biosensors & bioelectronics*, *92*, 449-456. doi:10.1016/j.bios.2016.10.081

16. Hellegouarch, S., Fueyo Roza, L., Artoos, K., **Lambert, P.**, & Collette, C. (2016, October). Linear encoder based low frequency inertial sensor. *International Journal of Optomechatronics*, *10*(3-4), 120-129. doi:10.1080/15599612.2016.1217109

17. Gernay, S., Federle, W., **Lambert, P.**, & Gilet, T. (2016, August 03). Elasto-capillarity in insect fibrillar adhesion. *Journal of the Royal Society interface*. doi:10.1098/rsif.2016.0371
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18. Matsuoka, H., Kanda, T., Wakimoto, S., Suzumori, K., & **Lambert, P.** (2016). Development of a rubber soft actuator driven with gas/liquid phase change. *International Journal of Automation Technology*, *10*(4), 517-524.

19. Wang, J.-P., Gallo, E., Francois, B., Gabrieli, F., & **Lambert, P.** (2016). Capillary force and rupture of funicular liquid bridges between three spherical bodies. *Powder technology*, *305*, 89-98. doi:10.1016/j.powtec.2016.09.060
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21. Mastrangeli, M., Arutinov, G., Smits, E. C. P., & **Lambert, P.** (2015). Modeling capillary forces for large displacements. *Microfluidics and Nanofluidics*, *18*(4), 695-708. doi:10.1007/s10404-014-1469-9
https://dipot.ulb.ac.be/dspace/bitstream/2013/175260/4/Mastrangeli-MufNaf2014.pdf

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23. Buttafuoco, A., Lenders, C., Clavel, R., **Lambert, P.**, & Kinnaert, M. (2014). Design, Manufacturing and Implementation of a Novel 2-Axis Force Sensor for Haptic Applications. *Sensors and actuators. A, Physical*., sna.2014.01.019. doi:10.1016/j.sna.2014.01.019
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24. Arutinov, G., Smits, E. C. P., Albert, P., **Lambert, P.**, & Mastrangeli, M. (2014). In-Plane Mode Dynamics of Capillary Self-Alignment. *Langmuir*, *30*(43), 13092–13102. doi:10.1021/la502831r
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25. Mertens, B., De Leener, B., Debeir, O., Beumier, C. M., **Lambert, P.**, & Delchambre, A. (2013, May 08). Robust Structured Light Pattern for Use with a Spatial Light Modulator in 3-D Endoscopy. *International Journal of Optomechatronics*, *7*(2), 105-121. doi:10.1080/15599612.2013.785041
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27. Valsamis, J.-B., Mastrangeli, M., & **Lambert, P.** (2013). Vertical excitation of axisymmetric liquid bridges. *European journal of mechanics. B, Fluids*, *38*, 47-57. doi:10.1016/j.euromechflu.2012.09.008
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30. Lenders, C., Gauthier, M., Cojan, R., & **Lambert, P.** (2012). Three DOF Microrobotic Platform Based on Capillary Actuation. *IEEE transactions on robotics*, *28*(5), 1157-1161. doi:10.1109/TRO.2012.2199009

31. Dong, W., Gauthier, M., Lenders, C., & **Lambert, P.** (2012). A gas bubble-based parallel micro manipulator: conceptual design and kinematics model. *Journal of micromechanics and microengineering*, *22*(5), 057001. doi:10.1088/0960-1317/22/5/057001

32. Ivan, I. A., Agnus, J., & **Lambert, P.** (2011). PMN-PT (lead magnesium niobate-lead titanate) piezoelectric material micromachining by excimer laser ablation and dry etching (DRIE). *Sensors and actuators. A, Physical*, *177*, 37-47. doi:10.1016/j.sna.2011.09.015
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33. Tortissier, G., Ginet, P., Jalabert, L., **Lambert, P.**, Kim, B., & Fujita, H. (2011). CF4 plasma treatment-assisted inkjet printing for color pixel flexible display. *Journal of micromechanics and microengineering*, *21*, 105021. doi:10.1088/0960-1317/21/10/105021

34. Park, J., Nishida, S., **Lambert, P.**, Kawakatsu, H., & Fujita, H. (2011). High-resolution cantilever biosensor resonating at air–liquid in a microchannel. *Lab on a chip*. doi:10.1039/C1LC20608G

35. Sausse, M., & **Lambert, P.** (2011). Compact polymer multi-nozzles electrospray device with integrated microfluidic feeding system. *Journal of electrostatics*, *69*(4), 313-319. doi:10.1016/j.elstat.2011.04.006
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36. Renaudot, R., Agache, V., Daunay, B., **Lambert, P.**, Kumemura, M., Fouillet, Y., Collard, D., & Fujita, H. (2011). Optimization of Liquid DiElectroPhoresis (LDEP) Digital Microfluidic Transduction for Biomedical Applications. *Micromachines*, *2*, 258-273. doi:10.3390/mi2020258

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41. Mastrangeli, M., Valsamis, J.-B., Van Hoof, C., Celis, J.-P., & **Lambert, P.** (2010). Lateral capillary forces of cylindrical fluid menisci: a comprehensive quasi-static study. *Journal of micromechanics and microengineering*, *20*, 075041.
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42. Alvo, S., **Lambert, P.**, Gauthier, M., & Régnier, S. (2010). A van der Waals Force Based Adhesion Model for Micromanipulation. *Journal of adhesion science and technology*, *24*, 2415-2428. doi:10.1163/016942410X508334

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47. Sausse, M., Delchambre, A., Régnier, S., & **Lambert, P.** (2009). Electrostatic forces in micromanipulations: review of analytical models and simulations including roughness. *Applied surface science*, *253*, 6203-6210. doi:10.1016/j.apsusc.2007.01.098
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48. Lenders, C., Valsamis, J.-B., Desaedeleer, M., Delchambre, A., & **Lambert, P.** (2008). Assembly of a micro ball-bearing using a capillary gripper and a microcomponent feeder. *IFIP*, *260*, 265-274. doi:10.1007/978-0-387-77405-3_26

49. **Lambert, P.**, Chau, A., & Delchambre, A. (2008). Comparison between Two Capillary Forces Models. *Langmuir*, *24*(7), 3157-3163.

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52. **Lambert, P.**, & Régnier, S. (2006, June). Surface and contact forces models within the framework of microassembly. *Journal of micromechatronics*, *3*(2), 123-157. doi:10.1163/156856306777544970

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58. Vandaele, V., **Lambert, P.**, & Delchambre, A. (2005). Non contact handling in microassembly: acoustical levitation. *Precision engineering*, *29*, 491-505.

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4. Articles published in conference proceedings

1. Guelpa, V., Prax, J.-S., Vitry, Y., Lehmann, O., Dehaeck, S., Sandoz, P., Clévy, C., Le Fort-Piat, N., **Lambert, P.**, & Laurent, G. J. (2017, July 10). 3D-Printed Vision-Based Micro-Force Sensor Dedicated to In Situ SEM Measurements. *Proc. of IEEE International Conference on Advanced Intelligent Mechatronics*.

2. Wang, J.-P., Francois, B., & **Lambert, P.** (2017, October 19). From basic particle gradation parameters to water retention curves of unsaturated sandy soils. *15th Int. Conference of the International Association for Computer Methods and Recent Advances in Geomechanics*.
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4. Mertens, B., De Leener, B., Debeir, O., Beumier, C. M., **Lambert, P.**, Delchambre, A., et al. (2012, October 29). Robust Structured Light Pattern for Use with a Hologram in 3D Endoscopy. *Proceedings of the 2012 International Symposium on Optomechatronic Technologies (ISOT'12)*. IEEE.

5. Blanc, L., Francois, B., Delchambre, A., & **Lambert, P.** (2017, August 28). Granular Jamming as Controllable Sti#ness Mechanism for Endoscopic and Catheter Applications. *23ème Congrès Français de Mécanique*.

6. Terrazas Mallea, R., Beugnot, J.-C., **Lambert, P.**, Bolopion, A., & Gauthier, M. (2017, October 01). 1D manipulation of a micrometer size particle actuated via thermocapillary convective flows. *Proc. IEEE/RSJ International Conference on Intelligent Robots and Systems*.

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2. Robert, F., Duchateau, V., Raman, V., Boey, C., & **Lambert, P.** (2007). *Détecter les préconceptions pour corriger les représentations erronées des étudiants: application à la mécanique et à l'électronique*. Paper session presented at 24e congrès de l'Association internationale de pédagogie universitaire (AIPU) (05-2007).

3. De Greef, A., **Lambert, P.**, & Delchambre, A. (2006). *A minimally invasive surgery actuator based on a flexible and inflatable structure*. Paper session presented at IEEE Benelux EMBS Symposium (07-08/12/2006: Bruxelles).

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6. **Lambert, P.**, & Zhou, Q. (s.d.). *Fluidic assembly and capillary forces*. Paper session presented at conférence Smart Systems Integration (10-11/03/2009).

6. Patents

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