

Francesco Clavica - Publication list

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Peer-reviewed articles

Mantegazza A.*, **Clavica F.**, Obrist D. 'In vitro investigations of red blood cell phase separation in a complex microchannel network' *Biomicrofluidics (accepted)*, 2020.

Chakrabarty B., Bijos D., Vahabi B., **Clavica F.**, Kanai A.J., Pickering A., Fry C., Drake M.J.* 'Modulation of Micromotions Alters Intravesical Pressure in the Rat Bladder' *Frontiers in Physiology*, 9:1937, 2019.

Haeberlin A., Schurch K., Niederhauser T., Sweda R. Schneider M. P. Obrist D., Burkhard F., **Clavica F.*** 'Cardiac electrophysiology catheters for electrophysiological assessments of the lower urinary tract - an ex vivo feasibility study in living ureters' *Neurourology and Urodynamics* 87-96, 2019.

Niederhauser T., Gafner E, Cantieni T., Grämiger M., Haeberlin A., Obrist D., Burkhard F., **Clavica F.*** 'Detection and quantification of overactive bladder activity in patients: Can we make it better and automatic?' *Neurourology and Urodynamics*, 1-9, 2018.

van Asselt E, Choudhary M, **Clavica F**, van Mastrigt R.* 'Urethane anesthesia in acute lower urinary tract studies in the male rat.' *Laboratory Animals*: 1-7, 2017

Clavica F.*, Homsy A., Jeandupeux L., Obrist D., 'Red blood cell phase separation in symmetric and asymmetric microchannel networks: effect of capillary dilation and inflow velocity' *Scientific Reports, Nature publishing group*, 6:36763, 2016.

Choudhary M.* , **Clavica F.**, van Mastrigt Ron, van Asselt E. 'A novel single compartment in vitro model for electrophysiological research using the Perfluorocarbon FC-770', *Physiological Research*, 20;65(2):341-8, 2016.

Choudhary M. S., van Asselt E., van Mastrigt R., **Clavica F.***, 'Neurophysiological modelling of bladder afferent activity in the rat overactive bladder model', *Journal of Physiological Sciences*, 65(4):329-38, 2015.

Clavica F.*, Parker K., Khir W. A., 'Wave intensity analysis in air-filled flexible vessels', *Journal of Biomechanics*, 26, 48(4):687-94, 2015.

Clavica F.*, Choudhary M. S., van Asselt E., van Mastrigt R., 'Frequency analysis of urinary bladder pre-voiding activity in normal and overactive rat detrusor.' *Neurourology and Urodynamics*, vol. 34, pp. 794-9, 2015.

Clavica F.*, Zhao X., ElMahdy M., Drake M.J., Zhang X., Carugo D., 'Beyond the Abstract - A biomimetic artificial model to investigate flow dynamics in the obstructed and stented ureter', *UroToday International Journal* 2014.

Clavica F.*, Zhao X., ElMahdy M., Drake M.J., Zhang X., Carugo D., 'Investigating the flow dynamics in the obstructed and stented ureter by means of a biomimetic artificial model.' *PLOS ONE*; 9(2):e87433, 2014.

Patents

Clavica F., Obrist D., Burkhard F., Schneider M., 'Urinary pumping device with an implantable activation arrangement'; European Patent Application EP19/154102.8 priority date: 29.01.2019

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Clavica F., Obrist D., Burkhard F., Schneider M., 'External impedance pump for emptying the bladder'; Swiss Patent Application CH 00096/19priority date: 29.01.2019

Bernard A., Heeb P., Nef C., Obrist D., **Clavica F.**, Frey S., Schwartz R., Hoem J. and Bludau O.. Microfluidic coronary circulatory model. United States Patent Application 4629.003PRV, 2018

Peer-reviewed conference papers

Clavica F. *, Roth J., Schneider M.P., Civet Y., Burkhard F., Perriard Y., Obrist D. 'Impedance pumping as a non-invasive treatment for underactive bladder? An ex-vivo proof-of-concept-study in porcine bladders' *Institution of Mechanical Engineers' conference – Incontinence: the engineering challenge*, London, UK, November 2019.

Clavica F. *, Zheng S. Carugo, D., Mosayyebi, A., Waters, S., Civet, Y., Perriard, Y, Obrist D., Burkhard F. 'Development of a biologically inspired in-vitro platform for long-term assessment of commercial and innovative ureteral stents' *Institution of Mechanical Engineers' conference – Incontinence: the engineering challenge*, London, UK, November 2019.

Mosayyebi A., De Grazia A., **Clavica F.**, Lange D.; Somani B.; Manes C.; Carugo D., 'Does flow dynamics govern deposition of encrustation in ureteral stents?' *Institution of Mechanical Engineers' conference – Incontinence: the engineering challenge*, London, UK, November 2019.

Mantegazza A.* , **Clavica F.**, Obrist D. 'Microfluidic investigation of red blood cell phase separation in complex microchannel networks' *23rd International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS)*, Basel, Switzerland, October 2019

Clavica F. *, Roth J., Schneider M.P., Civet Y., Burkhard F., Perriard Y., Obrist D. 'Urine-Contactless Device to Empty Bladders: an Ex-Vivo Proof-of-Concept Study in Porcine Bladders' *49th Annual of Conference of International Continence Society (ICS)*, Gothenburg, Sweden, September 2019.

Mantegazza A.* , **Clavica F.**, Obrist D. 'Tubular pinch effect of red blood cells at low Reynolds number in in vitro models of microvascular bifurcations' *8th World Congress of Biomechanics, Dublin, Ireland, 2018*.

Mantegazza A.* , **Clavica F.**, Obrist D. 'In vitro measurements of apparent intrinsic viscosity in function of tube hematocrit and red blood cell velocity' *Blood flow conference*, Paris, France, 2017.

Niederhauser T., Cantieni T., Grämiger M., van Mastrikt R., Burkhard F., Obrist O., **Clavica F.***, 'Towards an automatic detection and quantification of urinary bladder activity in overactive bladder patients' *Annual congress of Swiss, Austrian and German Societies of Biomedical Engineering (BMT conference)*, Basel, Switzerland, 2016.

Clavica F.*, A. Homsy, L. Jeandupeux, H. Keppner, D. Obrist "Blood cell dynamics in a simple model of microvascular networks" *19th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS)*, Gyeongju, South Korea, 2015.

Grundmann A., **Clavica F.***, Landolt A., Barrett M., Weber D. Obrist "Measurement of Fluid Pressure in Microchannels" *19th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS)*, Gyeongju, South Korea, 2015.

Zolliker D., Niederhauser T., Grämiger M., van Mastrikt R., Burkhard F., Obrist O., **Clavica F.***, "Frequency analysis of urinary bladder pre-voiding activity in normal and overactive human detrusor: a pilot study" *Proceedings of the 37th Annual International IEEE EMBS Conference, Milan, Italy, 2015*.

Carugo D., Zhang X., Drake J. M., **Clavica F.***, "Formation and characteristics of laminar vortices in micro-scale environments within an obstructed and stented ureter: a computational study" *18th*

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International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS) San Antonio, USA, 2014.

Clavica F.*, Barrett M., Weiss P., Landolt A, Weber B., Obrist D., “In vivo assessment of hematocrit distribution at bifurcation in cerebral microcirculation” *Annual meeting of Swiss Society for Biomed. Engineering*, Zurich, Switzerland, 2014.

Choudhary M. S*, van Asselt E., **Clavica F.**, van Mastrigt R. ” Validation of rat overactive bladder model by bladder wall stress estimation”, *International Continence Society Conference (ICS)*, Barcelona, Spain, 2013.

Carugo D., ElMahdy M., Zhao X., Drake M.J., Zhang X., **Clavica F.***, “An Artificial Model for Studying Fluid Dynamics in the Obstructed and Stented Ureter”, *Proceedings of the 35th Annual International IEEE EMBS Conference*, Osaka, Japan, 2013.

Choudhary M. S, van Asselt E., van Mastrigt R., **Clavica F.***, “A Novel Single Compartment In Vitro model: Perfluorocarbons for Electrophysiological studies of the Rat Urinary Bladder”, *Proceedings of the 35th Annual International IEEE EMBS Conference*, Osaka, Japan, 2013.

Clavica F.*, Choudhary M. S., van Asselt E., van Mastrigt R., “Can an Algorithm Predict a Voiding Contraction in Unconscious Rats?”, *Proceedings of the 35th Annual International IEEE EMBS Conference*, Osaka, Japan, 2013.

Bijoš D., Drake M.J.*, **Clavica F.**, Vahabi B., “Identification of anoctamine (Ano1) calcium activated chloride channels in porcine urinary bladder and characterization of their functional role in the bladder using niflumic acid”, *International Continence Society Conference (ICS)*, Beijing, China, 2012.

Choudhary M. S., **Clavica F.***, van Asselt E., van Mastrigt R., “Frequency analysis of afferent nerve activity in the rat overactive urinary bladder model”, *Proceedings of the 34th Annual International IEEE EMBS Conference*, San Diego, USA, 2012

Clavica F.*, Alastruey J., Sherwin S J., Khir A.W., “One-dimensional computational model of an asymmetrical human bronchial tree”, *Physiologic Fluid Mechanics Conference*, London (UK) (winner of the best poster prize), 2011.

Clavica F.*, Alastruey J., Sherwin S.J., Khir A.W., “One-Dimensional Computational Model of Pulse Wave Propagation in the Human Bronchial Tree”, *Proceedings of the 32nd Annual International IEEE EMBS Conference*, Buenos Aires, Argentina, 2010.

Clavica F.*, Alastruey J., Sherwin S J., Khir A.W., “One-dimensional Modelling of Wave Propagation in a Model of Human airways”, *17th Congress of the European Society of Biomechanics*, Edinburgh, UK, 2010.

Clavica F.*, Alastruey J., Sherwin S.J., Khir A.W., “One-dimensional Modelling of Pulse Wave Propagation in a Model of Human airways”, *Proceedings of the 31st Annual International IEEE EMBS Conference*, Minneapolis, USA, 2009.