

## Subdivision 7, Publications 2018 – 2020

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### Articles in journals

- 1) Schmidt, C.K., **Medina Sanchez, M.**, Edmondson, R.J., **Schmidt, O.G.**, Engineering microrobots for targeted cancer therapies from a medical perspective, *Nature Communications* 11 (2020), S. 5618/1-18 <https://www.nature.com/articles/s41467-020-19322-7>.
- 2) **Xu, H., Medina Sanchez, M., Zhang, W.**, Seaton, M.P.H., Brison, D.R., Edmondson, R.J., Taylor, S.S., Nelson, L., Zeng, K., Bagley, S., Ribeiro, C., Restrepo, L.P., Lucena, E., Schmidt, C.K., **Schmidt, O.G.**, Human spermbots for patient-representative 3D ovarian cancer cell treatment, *Nanoscale* 39 12 (2020), S. 20467-20481 <https://doi.org/10.1039/D0NR04488A>.
- 3) **Aziz, A.**, Pane, S., Iacovacci, V., Koukourakis, N., Czarske, J., Menciassi, A., **Medina Sanchez, M., Schmidt, O.G.**, Medical Imaging of Microrobots: Toward In Vivo Applications, *ACS Nano* 9 14 (2020), S. 10865–10893 <https://doi.org/10.1021/acsnano.0c05530>.
- 4) **Schwarz, L., Karnaushenko, D., Hebenstreit, F.**, Naumann, R., **Schmidt, O.G., Medina Sanchez, M.**, A Rotating Spiral Micromotor for Noninvasive Zygote Transfer, *Advanced Science* 18 7 (2020), S. 2000843/1-14 <https://doi.org/10.1002/advs.202000843>.
- 5) Magdanz, V., Khalil, I.S.M., Simmchen, J., Furtado, G.P., Mohanty, S., Gebauer, J., **Xu, H.**, Klingner, A., **Aziz, A., Medina Sanchez, M., Schmidt, O.G.**, Misra, S., IRONSperm: Sperm-templated soft magnetic microrobots, *Science Advances* 28 6 (2020), S. eaba5855/1-15 <https://advances.sciencemag.org/content/6/28/eaba5855>.
- 6) **Xu, H., Medina Sanchez, M., Schmidt, O.G.**, Magnetic Micromotors for Multiple Motile Sperm Cells Capture, Transport, and Enzymatic Release, *Angewandte Chemie - International Edition* 35 59 (2020), S. 15029-15037 <https://doi.org/10.1002/anie.202005657>.
- 7) **Striggow, F., Medina Sanchez, M.**, Auernhammer, G., Magdanz, V., Friedrich, B., **Schmidt, O.G.**, Sperm-Driven Micromotors Moving in Oviduct Fluid and Viscoelastic Media, *Small* 16 (2020), S. 2000213/1-13 <https://doi.org/10.1002/smll.202000213>.
- 8) Gérard, A., Woolfe, A., Mottet, G., Reichen, M., Castrillon, C., Menrath, V., Ellouze, S., Poitou, A., **Doineau, R.**, Briseno-Roa, L., Canales-Herrerias, P., Mary, P., Rose, G., Ortega, C., Delincé, M., Essono, S., Jia, B., Iannascoli, B., Richard-Le Goff, O., Kumar, R., Stewart, S., Pousse, Y., Shen, B., Grosselin, K., Saudemont, B., Sautel-Caillé, A., Godina, A., McNamara, S., Eyer, K., Millot, G., Baudry, J., England, P., Nizak, C., Jensen, A., Griffiths, A., Bruhns, P., Brenan, C., High-throughput single-cell activity-based screening and sequencing of antibodies using droplet microfluidics, *Nature Biotechnology* 6 38 (2020), S. 715-721 <https://doi.org/10.1038/s41587-020-0466-7>.
- 9) **Xu, H., Medina Sanchez, M.**, Maitz, M., Werner, C., **Schmidt, O.G.**, Sperm Micromotors for Cargo Delivery through Flowing Blood, *ACS Nano* 3 14 (2020), S. 2982-2993 <https://doi.org/10.1021/acsnano.9b07851>.
- 10) **Bandari, V.K., Nan, Y., Karnaushenko, D., Hong, Y., Sun, B., Striggow, F., Karnaushenko, D.D., Becker, C., Faghih, M., Medina Sanchez, M., Zhu, F., Schmidt, O.G.**, A flexible microsystem capable of controlled motion and actuation by wireless power transfer, *Nature Electronics* 3 3 (2020), S. 172-180 <https://www.nature.com/articles/s41928-020-0384-1>.

- 11) Wolff, N., Ciobanu, V., Enachi, M., Kamp, M., Braniste, T., Duppel, V., Shree, S., Raevschi, S., **Medina Sanchez, M.**, Adelung, R., **Schmidt, O.G.**, Kienle, L., Tiginyanu, I., Advanced Hybrid GaN/ZnO Nanoarchitected Microtubes for Fluorescent Micromotors Driven by UV Light, *Small* 2 16 (2019), S. 1905141/1-10 <https://doi.org/10.1002/smll.201905141>.
- 12) **Schwarz, L., Medina Sanchez, M., Schmidt, O.G.**, Sperm-hybrid micromotors: on-board assistance for nature's bustling swimmers, *Reproduction* 2 159 (2019), S. R83–R96 <https://rep.bioscientifica.com/view/journals/rep/aop/rep-19-0096.xml>.
- 13) Cirillo, G., Peitzsch, C., Vittorio, O., Curcio, M., Farfalla, A., Voli, F., Dubrovskaya, A., Iemma, F., Kavallaris, M., **Hampel, S.**, When polymers meet carbon nanostructures: expanding horizons in cancer therapy, *Future Medicinal Chemistry* 16 11 (2019), S. 2205–2231 <https://doi.org/10.4155/fmc-2018-0540>.
- 14) **Aziz, A., Medina Sanchez, M.**, Koukourakis, N., **Wang, J.**, Kuschmierz, R., Radner, H., Czarske, J.W., **Schmidt, O.G.**, Real-Time IR Tracking of Single Reflective Micromotors through Scattering Tissues, *Advanced Functional Materials* 51 29 (2019), S. 1905272/1-11 <https://onlinelibrary.wiley.com/doi/full/10.1002/adfm.201905272>.
- 15) **Cirillo, G.**, Vittorio, O., **Kunhardt, D.**, Valli, E., Voli, F., Farfalla, A., Curcio, M., Spizzirri, U.G., **Hampel, S.**, Combining Carbon Nanotubes and Chitosan for the Vectorization of Methotrexate to Lung Cancer Cells, *Materials* 18 12 (2019), S. 2889/1-14 <https://www.mdpi.com/1996-1944/12/18/2889>.
- 16) Requardt, H., Braun, A., Steinberg, P., **Hampel, S.**, Hansen, T., Surface defects reduce Carbon Nanotube toxicity in vitro, *Toxicology in Vitro* 60 (2019), S. 12-18 <https://www.sciencedirect.com/science/article/pii/S0887233318305800?via%3Dihub>.
- 17) Lerra, L., Farfalla, A., Sanz, B., Cirillo, G., Vittorio, O., Voli, F., Le Grand, M., Curcio, M., Nicoletta, F., Dubrovskaya, A., **Hampel, S.**, Iemma, F., Goya, G., Graphene Oxide Functional Nanohybrids with Magnetic Nanoparticles for Improved Vectorization of Doxorubicin to Neuroblastoma Cells, *Pharmaceutics* 1 11 (2019), S. 3/1-17 <https://doi.org/10.1080/10408436.2017.1370575>.
- 18) Khalil, I., Klingner, A., Magdanz, V., **Strigow, F., Medina Sanchez, M., Schmidt, O.G.**, Misra, S., Modeling of Spermibots in a Viscous Colloidal Suspension, *Advanced Theory and Simulations* 2 (2019), S. 1900072/1-11 <https://onlinelibrary.wiley.com/doi/full/10.1002/adts.201900072>.
- 19) **Aziz, A., Medina Sanchez, M.**, Claussen, J., **Schmidt, O.G.**, Real-Time Optoacoustic Tracking of Single Moving Micro-objects in Deep Phantom and Ex Vivo Tissues, *Nano Letters* 9 19 (2019), S. 6612-6620 <https://doi.org/10.1021/acs.nanolett.9b02869>.
- 20) **Gabler, F., Karnaushenko, D., Karnaushenko, D., Schmidt, O.G.**, Magnetic origami creates high performance micro devices, *Nature Communications* 10 (2019), S. 3013/1-10 <https://doi.org/10.1038/s41467019-10947-x>.
- 21) Wang, L.L., Popescu, M.N., Stavale, F., Ali, A., **Gemming, T.**, Simmchen, J., Cu@TiO<sub>2</sub> Janus microswimmers with a versatile motion mechanism, *Soft Matter* 34 14 (2018), S. 6969-6973.
- 22) Shin, N., Zessin, J., **Lee, M.H.**, Hambsch, M., Mannsfeld, S.C.B., Enhancement of n-Type Organic Field-Effect Transistor Performances through Surface Doping with Aminosilanes, *Advanced Functional Materials* 34 28 (2018), S. 1802265/1-7 <https://doi.org/10.1002/adfm.201802265>.
- 23) di Luca, M., Vittorio, O., Cirillo, G., Curcio, M., Czuban, M., Voli, F., Farfalla, A., **Hampel, S.**, Nicoletta, F.P., Iemma, F., Electro-responsive graphene oxide hydrogels for skin bandages: The outcome of gelatin and trypsin immobilization, *International Journal of Pharmaceutics* 1-2 546 (2018), S. 50-60 <https://doi.org/10.1016/j.ijpharm.2018.05.027>.

- 24) **Medina Sanchez, M., Magdanz, V.,** Guix, M., **Fomin, V., Schmidt, O.G.,** Swimming Microrobots: Soft, Reconfigurable, and Smart, *Advanced Functional Materials* 25 28 (2018), S. 1707228/1-27  
<https://onlinelibrary.wiley.com/doi/abs/10.1002/adfm.201707228>.
- 25) **Siles, P.F., Devarajulu, M., Zhu, F., Schmidt, O.G.,** Direct Imaging of Space-Charge Accumulation and Work Function Characteristics of Functional Organic Interfaces, *Small* 12 14 (2018), S. 1703647/1-9 <https://doi.org/10.1002/sml.201703647>.
- 26) **Medina Sanchez, M., Xu, H., Schmidt, O.G.,** Micro- and nano-motors: the new generation of drug carriers, *Therapeutic Delivery* 4 9 (2018), S. 303-316  
<https://doi.org/10.4155/tde-2017-0113>.
- 27) Vittorio, O., Le Grand, M., Makharza, S.A., Curcio, M., Tucci, P., Iemma, F., Nicoletta, F.P., **Hampel, S.,** Cirillo, G., Doxorubicin synergism and resistance reversal in human neuroblastoma BE(2)C cell lines: An in vitro study with dextran-catechin nanohybrids, *European Journal of Pharmaceutics and Biopharmaceutics* 122 (2018), S. 176-185  
<https://doi.org/10.1016/j.ejpb.2017.11.005>.
- 28) Guix, M., **Weiz, S.M., Schmidt, O.G., Medina Sanchez, M.,** Self-Propelled Micro/Nanoparticle Motors, *Particle and Particle Systems Characterization* 2 35 (2018), S. 1700382/1-31 <https://doi.org/10.1002/ppsc.201700382>.
- 29) **Xu, H., Medina Sanchez, M., Magdanz, V., Schwarz, L., Hebenstreit, F., Schmidt, O.G.,** Sperm-Hybrid Micromotor for Targeted Drug Delivery, *ACS Nano* 1 12 (2018), S. 327-337  
<https://doi.org/10.1021/acsnano.7b06398>.

#### Individual contributions to edited volumes

- 1) **Aziz, A., Medina Sanchez, M.,** Claussen, J., **Schmidt, O.G.,** Optoacoustic detection of 3D microstructures in deep tissue-mimicking phantoms, *Proceedings of MARSS 2019: The 4th International Conference on Manipulation, Automation, and Robotics at Small Scales* (2019) <https://ieeexplore.ieee.org/xpl/conhome/8852501/proceeding>.
- 2) **Schwarz, L., Medina Sanchez, M., Schmidt, O.G.,** Magnetic Micromotors for Resilient and Reversible Cargo Transport in and between Microfluidic Environments, *Proceedings of MARSS 2019: The 4th International Conference on Manipulation, Automation, and Robotics at Small Scales* (2019).
- 3) Reamon-Buettner, S.M., Voepel, I., Hiemisch, A., **Eckert, V.,** Schaudien, D., Ziemann, C., Adverse effects of long and straight multiwalled carbon nanotubes on cytoskeleton, nuclear lamina, and genome-wide transcriptome of primary human mesothelial cells, *NAUNYN-SCHMIEDEBERGS ARCHIVES OF PHARMACOLOGY Suppl. 1* 392 (2019), S. S72  
<http://publica.fraunhofer.de/documents/N-549444.html>.