

## Selected Publications and Patents

---

Mechanical characteristics of beta sheet-forming peptide hydrogels are dependent on peptide sequence, concentration and buffer composition  
Franziska Koch; Michael Müller; Finja König; Nina Meyer; Jamin Gattlen; Uwe Pieleles; Kirsten Peters; Bern Kreikemeyer; Stephanie Mathes; Sina Saxer ; 2018 Royal Society Open Science 5(3)

Epithelial growth factor receptor expression influences 5-ALA induced glioblastoma fluorescence  
Andrea O.Fontana; Deborah Piffaretti; Francesco Marchi; Floriana Burgio; AnaBela Faia\_Torres; Paolo Paganetti; Sandra Pinton; Uwe Pieleles, Michael Reinert; 2017; Journal of Neurooncology, p 133

Characterization and in ovo vascularisation of a 3D-printed hydroxyapatite scaffold with different extracellular matrix coatings under perfusion culture  
Floriana Burgio; Natalie Rimmer; Uwe Pieleles; Johana Buschmann; Marina Beaufiles Hugo; 2018; Open Biology 7 (12)

Hematite photoanode co-functionalized with self-assembling melanin and C-phycocyanin for solar water splitting at neutral pH  
Krstina Schrantz et al. *Catayis today*; Vol 284; p 44-51

Self-Sealing and Puncture Resistant Breathable Membranes for Water-Evaporation  
Applications Rother M Barmettler J, Reichmuth A, Araujo JV, Rytka C, Glaied O, Pieleles U, Bruns N *Adv Mater*. 2015;; 6620-4

Franziska Koch, Anja-M Möller, Martin Frenz, Uwe Pieleles, Kathrin Kuehni-Boghenbor, Meike Mevissen  
*Toxicol In Vitro* 2014 Aug 21;28(5):990-8. Epub 2014 Apr 21. An in vitro toxicity evaluation of gold-, PLLA- and PCL-coated silica nanoparticles in neuronal cells for nanoparticle-assisted laser-tissue soldering.

Joachim Koeser, Thiago Saads Carvalho, Uwe Pieleles, Adrian Lussi *J Mater Sci Mater Med* 2014 Jul 30;25(7):1671-7. Epub 2014 Mar 30 [Preparation and optimization of calcium fluoride particles for dental applications.](#)

Olivier Braissant, Philippe Chavanne, Michael de Wild, Uwe Pieleles, Sabrina Stevanovic, Ralf Schumacher, Lukas Straumann, Dieter Wirz, Philipp Gruner, Alexander Bachmann, Gernot Bonkat *J Biomed Mater Res B Appl Biomater* 2014 Oct 7. Epub 2014 Oct 7. Novel microcalorimetric assay for antibacterial activity of implant coatings: The cases of silver-doped hydroxyapatite and calcium hydroxide.

Poly(N-vinylpyrrolidone)-Poly(dimethylsiloxane)-Based Polymersome Nanoreactors for Laccase-Catalyzed Biotransformations  
Mariana Spulber, Patric Baumann, Sina S. Saxer, Uwe Pieleles, Wolfgang Meier, and Nico Bruns *Biomacromolecules* 2014 15 (4), 1469-1475

Jasmin Waser-Althaus, Achim Salamon, Marcus Waser, Celestino Padeste, Michael Kreutzer, Uwe Pieleles, Bert Müller, Kirsten Peters *J Mater Sci Mater Med* 2014 Feb 8;25(2):515-25. Epub 2013 Nov 8. Differentiation of human mesenchymal stem cells on plasma-treated polyetheretherketone.

3D printed chitosan / hydroxyapatite scaffolds for potential use in regenerative medicine  
Chavanne Philippe; Stevanovic Sabrina; Wuthrich Alain; Braissant Olivier; Pieleles Uwe; Gruner Philipp; Schumacher Ralf *Biomedizinische Technik. Biomedical engineering* (2013).

Schonbachler, Andrea; Glaied, Olfa; Huwyler, Jorg; Frenz, Martin Pieleles, Uwe : *Journal of Photochemistry and Photobiology, A: Chemistry* (2013), 261, 12-19. Indocyanine green loaded biocompatible nanoparticles: Stabilization of indocyanine green (ICG) using biocompatible silica-poly( $\epsilon$ -caprolactone) grafted nanocomposites;

Photoreaction of a Hydroxyalkylphenone with the Membrane of Polymersomes: A Versatile Method To Generate Semipermeable Nanoreactors  
Spulber, Mariana; Najer, Adrian; Winkelbach, Katharina; Glaied, Olfa; Waser, Marcus Pieleles, Uwe; Meier, Wolfgang; Bruns, Nico *Journal of the American Chemical Society* (2013), 135(24), 9204-9212

J. Althaus, C. Padeste, J. Köser, U. Pieleles, K. Peters, and B. Müller  
Nanostructuring polyetheretherketone for medical implants *European Journal of Nanomedicine* (2012) 2011-001

Micro- and nanostructured polymer substrates for biomedical applications  
By Althaus, Jasmin; Urwyler, Prabitha; Padeste, Celestino; Heuberger, Roman; Deyhle, Hans; Schiff, Helmut; Gobrecht, Jens; Pieleles, Uwe; Scharnweber, Dieter; Peters, Kirsten; et al  
*Proceedings of SPIE* (2012), 8339(Bioinspiration, Biomimetics, and Bioreplication),

Radio (14C)- and fluorescent-doubly labeled silica nanoparticles for biological and environmental toxicity assessment  
Geranio, Luca; Hommes, Gregor; Shahgaldian, Patrick; Wirth-Heller, Amina; Pieleles, Uwe; Corvini, Philippe F.-X.  
*Environmental Chemistry Letters* (2010), 8(3), 247-251.

Assessment of uptake and toxicity of fluorescent silica nanoparticles in zebrafish (*Danio rerio*) early life stages.  
Karl Fent, Christin J Weisbrod, Amina Wirth-Heller and Uwe Pieleles *Aquat Toxicol* (2010) 100(2), 218-228

Preparation, chemistry and physical properties of bone-derived hydroxyapatite particles having a negative zeta potential  
*Materials Chemistry and Physics*, Volume 132, Issues 2–3, 15 February 2012, Pages 446-452  
Ali Doostmohammadi, Ahmad Monshi, Rasoul Salehi, M.H. Fathi, Saeed Karbasi, Uwe Pieleles, A.U. Daniels

Bogni, S; Schöni, D; Constantinescu, M; Wirth, A; Vajtai, I; Bregy, A; Raabe, A; Pieleles, U; Frenz, M; Reinert, M: Tissue fusion, a new opportunity for sutureless bypass surgery. *Acta neurochirurgica. Supplement* 2011;112():45-53.

Daniel S Schöni, Serge Bogni, Amadé Bregy, Amina Wirth, Andreas Raabe, Istvan Vajtai, Uwe Pieles, Michael Reinert and Martin Frenz Lasers Nanoshell assisted laser soldering of vascular tissue Surg Med 43(10):975-983 (2011)

Design of a high-throughput device for screening surface modification protocols Saxer, Sina; Pieles, Uwe; Elsener, Martin; Horisberger, Michael; Tosatti, Samuele; Textor, Marcus; Gademann, Karl; Zuercher, Stefan Progress in Organic Coatings (2010), 67(1), 20-27.

Kruse A; Pieles U; Riener M O; Zunker Ch; Bredell M G; Gratz K W Craniomaxillofacial fibrous dysplasia: a 10-year database 1996-2006. The British journal of oral & maxillofacial surgery (2009), 47(4), 302-5.

Kind, L.; Plamper, F.A.; Göbel, R.; Manton, A.; Müller, A.H.E.; Pieles, U.; Taubert, A.; Meier, W.: Silsesquioxane/Polyamine Nanoparticle-Templated Formation of Star- Or Raspberry-Like Silica Nanoparticles, Langmuir 25, 7109 (2009).

Shahgaldian, Patrick; Sciotti, Michel A.; Pieles, Uwe. Amino-Substituted Amphiphilic Calixarenes: Self-Assembly and Interactions with DNA. Langmuir (2008), 24(16), 8522-8526.

Legrand, Sebastien; Catheline, Amelie; Kind, Lucy; Constable, Edwin C.; Housecroft, Catherine E.; Landmann, Lukas; Banse, Petra; Pieles, Uwe; Wirth-Heller, Amina. Controlling silica nanoparticle properties for biomedical applications through surface modification. New Journal of Chemistry (2008), 32(4), 588-593.

J. Koeser,\* P. Shahgaldian, M. Bammerlin, F. M. Battiston and U. Pieles, J. Phys. Conf. Series. 2007, 61, 612-617, "Time resolved analysis of molecular interactions using nanomechanical cantilever sensors"

Sustained polymer membranes fabricated by nanoimprint lithography Schiff, Helmut; Bellini, Sandro; Pieles, Uwe; Gobrecht, Jens Journal of Microlithography, Microfabrication, and Microsystems (2006), 5(1),

#### **Patent applications**

04/2016 Patent applications filed with SKAN AG „New catalyst for the rapid decomposition of H<sub>2</sub>O<sub>2</sub>

05/2016 Patent application pending with Credentis AG „New applications of self assembled peptides for treatment of periimplantitis“

03/2016 Patent application pending with Ziegler AG „New coatings for applications for release liner“