2018

**Stem Cell Expansion and Fate Decision on Liquid Substrates Are Regulated by Self-Assembled Nanosheets.**

**Surface-Initiated Poly(oligo(2-alkyl-2-oxazoline)methacrylate) Brushes.**

**Impact of surface adhesion and sample heterogeneity on the multiscale mechanical characterisation of soft biomaterials.**

**Protein Nanosheet Mechanics Controls Cell Adhesion and Expansion on Low-Viscosity Liquids.**

**Cardiomyocytes Sense Matrix Rigidity through a Combination of Muscle and Non-muscle Myosin Contractions.**

**Highly Stable RNA Capture by Dense Cationic Polymer Brushes for the Design of Cytocompatible, Serum-Stable SiRNA Delivery Vectors.**
Li D, Sharili AS, Connelly J and Gautrot JE. *Biomacromolecules.*

**Biofunctionalised Patterned Polymer Brushes via Thiol-Ene Coupling for the Control of Cell Adhesion and the Formation of Cell Arrays.**
Colak B, Di Cio S and Gautrot JE. *Biomacromolecules.*

**A drug eluting poly(trimethylene carbonate)/poly(lactic acid)-reinforced nanocomposite for the functional delivery of osteogenic molecules.**

2017

**Design of Polymer Brushes for Cell Culture and Cellular Delivery.**
Li D and Gautrot JE. *Polymer and Biopolymer Brushes: For Materials Science and Biotechnology.*

**The Solution Conformation of Polymer Brushes Determines their Interactions with DNA and Transfection Efficiency.**
Krishnamoorthy M, Li D, Sharili AS, Gulin-Sarfraz T, Rosenholm JM and Gautrot JE. *Biomacromolecules.*

**Physico-chemical characterization of Antheraea mylitta silk mats for wound healing applications.**
Tunable and processable shape memory composites based on degradable polymers.
Zhang X, Geven MA, Grijpma D, Peijs T and Gautrot JE. *Polymer.*

The culture of HaCaT cells on liquid substrates is mediated by a mechanically strong liquid-liquid interface.

Fabrication and Characterization of Conductive Conjugated Polymer-Coated Antheraea mylitta Silk Fibroin Fibers for Biomedical Applications.

2016


Adhesive ligand tether length affects the size and length of focal adhesions and influences cell spreading and attachment.

Impact of the Molecular Environment on Thiol-Ene Coupling For Biofunctionalization and Conjugation.

Ultrafast diffusion-controlled thiol-ene based crosslinking of silicone elastomers with tailored mechanical properties for biomedical applications.
Nguyen KDQ, Megone WV, Kong D and Gautrot JE. *Polymer Chemistry.* vol. 7, (33) 5281-5293.

"Polymer-polymer composites for the design of strong and tough degradable biomaterials".

Failure mechanisms in denture adhesives.

Study of thiol-ene chemistry on polymer brushes and application to surface patterning and protein adsorption.
Tan KY, Ramstedt M, Colak B, Huck WTS and Gautrot JE. *Polymer Chemistry.* vol. 7, (4) 979-990.

Cell sensing of physical properties at the nanoscale: Mechanisms and control of cell adhesion and phenotype.

2015

The RAPIDOS project-European and Chinese collaborative research on biomaterials.

High-sensitivity light-addressable potentiometric sensors using silicon on sapphire functionalized with self-assembled organic monolayers.

Conductive surfaces with dynamic switching in response to temperature and salt.

2014

Surface initiated polymer brushes in the biomedical field: Applications in membrane science, biosensing, cell culture, regenerative medicine and antibacterial coatings.
Biofunctionalization of PEGylated microcapsules for exclusive binding to protein substrates.
Deo DI, Gautrot JE, Sukhorukov GB and Wang W. *Biomacromolecules* vol. 15, (7) 2555-2562.

The nanoscale geometrical maturation of focal adhesions controls stem cell differentiation and mechanotransduction.

Directing cell migration using micropatterned and dynamically adhesive polymer brushes.

2013

Decoupling geometrical and chemical cues directing epidermal stem cell fate on polymer brush-based cell micro-patterns.

The surface charge of anti-bacterial coatings alters motility and biofilm architecture.

2012

Mimicking normal tissue architecture and perturbation in cancer with engineered micro-epidermis.

Extracellular-matrix tethering regulates stem-cell fate.

2011

Polymer brushes showing non-fouling in blood plasma challenge the currently accepted design of protein resistant surfaces.

Formation of pickering emulsions using ion-specific responsive colloids.

Shape-induced terminal differentiation of human epidermal stem cells requires p38 and is regulated by histone acetylation.
Connelly JT, Mishra A, Gautrot JE and Watt FM. *Plos One* vol. 6, (11).

Island brushes to control adhesion of water in oil droplets on planar surfaces.

Recent advances in entropy-driven ring-opening polymerizations.

2010

Actin and serum response factor transduce physical cues from the microenvironment to regulate epidermal stem cell fate decisions.

Exploiting the superior protein resistance of polymer brushes to control single cell adhesion and polarisation at the micron scale.
Shape memory properties of main chain bile acids polymers.

Protein-resistant NTA-functionalized polymer brushes for selective and stable immobilization of histidine-tagged proteins.

2009

Shape memory polymers based on naturally-occurring bile acids.

Biofunctionalized protein resistant oligo(ethylene glycol)-derived polymer brushes as selective immobilization and sensing platforms.

The effects of surface chemistry on epidermal stem cell differentiation.
Huck WTS, Gautrot J and Watt F. *Abstracts of Papers of The American Chemical Society* vol. 237.,

New degradable polymers made from natural compounds bile acids by ROMP.
Gautrot JE, Zhang J, Shao Y and Zhu XX. *Abstracts of Papers of The American Chemical Society* vol. 237.,

Polymers containing in-chain quinone moieties: synthesis and properties.
Hodge P and Gautrot JE. *Polymer International* vol. 58, (3) 261-266.

Macroyclic bile acids: from molecular recognition to degradable biomaterial building blocks.

Synthesis of electron-accepting polymers containing phenantra-9,10-quinone units.

2008

High molecular weight bile acid and ricinoleic acid-based copolyesters via entropy-driven ring-opening metathesis polymerisation.
Gautrot JE and Zhu XX. *Chem Commun (Camb)* (14) 1674-1676.

2007

Poly(dibenzo[a,c]phenazine-2,7-diyl)s - Synthesis and characterisation of a new family of electron-accepting conjugated polymers.
Gautrot JE and Hodge P. *Polymer* vol. 48, (24) 7065-7077.

Silver nanoparticles stabilized by nitrocellulose as low conversion temperature precursors for inkjet-printed electronic circuits.

Chondroitin-4-sulfate: a bioactive macromolecule to foster vascular healing around stent-grafts after endovascular aneurysm repair.

Synthesis and characterization of core-shell microspheres with double thermosensitivity.

Synthesis and characterization of core-shell microspheres with double thermosensitivity.

Molar mass of main-chain bile acid-based oligoesters measured by SEC, MALDI-TOF spectrometry and NMR spectroscopy: a comparative study.
2,6-Diaryl-9,10-anthraquinones as models for electron-accepting polymers.

Preparation and thermo-responsive light diffraction behaviors of soft polymerized crystalline colloidal arrays.

Nitrocellulose-stabilized silver nanoparticles as low conversion temperature precursors useful for inkjet printed electronics.

2006

Experimental evidence for carbonyl-pi electron cloud interactions.

Main-chain bile acid based degradable elastomers synthesized by entropy-driven ring-opening metathesis polymerization.

Enhancing the photoluminescence intensity of conjugated polycationic polymers by using quantum dots as antiaggregation reagents.

Biodegradable polymers based on bile acids and potential biomedical applications.

2005

Electrode specific electropolymerization of ethylenedioxythiophene: Injection enhancement in organic transistors.