Dr. Karine Anselme

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University training and degree

1986 - 1989 PhD thesis in Cell Biology, University of Lyon (France)
2000 Habilitation, University of Littoral Côte d'Opale (Boulogne sur mer, France)

Postgraduate professional career

2010 - pres. CNRS principal investigator at IS2M, 'Biointerfaces' team leader.
2003-2010 CNRS researcher at IS2M, 'Surfaces-Living matter interactions' team.
1990 - 2003 Researcher at the Research Laboratory on Biomaterials and Biotechnologies, Littoral Côte d'Opale University, Berck/ mer, 'Cell/materials Interactions' team leader.

Fields of Interest: Biomaterials, Cell/material interactions, Mechanobiology, Tissue engineering

Track record **122 publications in ISI Web (06/07/2018); 5958 citations; h index = 36**

Leading research activities

2018-pres.: IS2M executive assistant charged with scientific animation
2016-pres.: member of Haute-Alsace University directorate
2016-pres.: member of steering committee of Center for Interactive Materials and Bioinspired Technologies (FIT), Freiburg University
2012- pres.: vice-president of French Society for Biomaterials (Biomat)
2012-2016: member of CNRS national committee (section 11 "Supra and macromolecular systems and materials: elaboration, properties, functions " and CID54 "Experimental methods, concepts and instrumentation in material science and bioengineering")
2012-2016: member of Haute-Alsace University academic council
2011-2012 : vice-president of ANR evaluation committee SVSE5: "Physics and chemistry of life, innovation in biotechnology"
2009-pres.: member of IS2M laboratory council, scientific committee and steering committee
2008- pres.: member of the National Research Group (GDR) "Mechanotransduction"
2005- pres.: member of French Think Tank on "Tissue engineering" (GRIT)
2002-2011: member of Editorial board 'Biomaterials' journal
1991- pres.: member of European Society for Biomaterials (ESB)

Selected publications

[1] K.Anselme, N. Tusamda Wakhloo, P. Rougerie, L. Pieuchot, *Role of the cellular nucleus as an integrator of cell-scale topographic landscape, Advanced Healthcare Materials* (2018) 1701154.
[2] I. Brigaud, et al., *Synergistic effects of BMP-2, BMP-6 or BMP-7 with human plasma fibronectin onto hydroxyapatite coatings: a comparative study,* Acta Biomaterialia (2017) 55, 481-492.
[3] F. Badique, D. R. Stamov, P. Davidson, M. Veuillet, G. Reiter, J.N. Freund, C. M. Franz, K. Anselme, *Directing nuclear deformation on micropillared surfaces by substrate geometry and cytoskeleton organization*, Biomaterials, (2013) 34(12), 2991-3001
[4] M. Bigerelle, S. Giljean, K. Anselme, *Existence of a typical threshold in the response of human mesenchymal stem cells to peaks-and-valleys topography*, Acta Biomaterialia, (2011), 7(9), 3302-3311.
[5] K.Anselme et al., *The interaction of cells and bacteria with surfaces structured at the nanometer scale* (Invited review), Acta Biomaterialia, 6(10), 3824-3846 (2010).
[6] P. M. Davidson, H. Özçelik, V. Hasirci, G. Reiter, K. Anselme, *Micro-structured surfaces cause deformation of the cell nucleus without killing cells*. Advanced Materials (2009) 21 (35), 3586-3590.
[7] M. Rouahi, E. Champion, P. Hardouin, K. Anselme*, *Quantitative kinetic analysis of gene expression during human osteoblastic adhesion on orthopaedic materials*, Biomaterials, 27, 2829-2847 (2006)
[8] K. Anselme, *Osteoblast adhesion on biomaterial*. Biomaterials (2000) 21;667-681.

Theses supervised

- M. Rouahi (2002-2005) Influence of microstructure of hydroxyapatite ceramics on protein adsorption and human bone cells adhesion.
  Now: research engineer, University of Toulouse, France.
- S. Giljean (2004-2007) Multi-scale roughness characterization of metallic materials for biomedical applications: effect on wettability and adhesion of bone cells.
  Now: assistant professor, University of Haute-Alsace, France.
- E. Araujo dos Santos (2005-2008), Chemical and topographical influence of hydroxyapatite and beta-tricalcium phosphate surfaces on human osteoblastic cells behavior. Sandwich PhD thesis (stay in France sept 2005- august 2006), Federal University of Rio de Janeiro, Brazil.
  Now: assistant professor, Federal University of Sergipe, Brazil.
- H. Marques da Silva (2006-2009), Evaluation of protein adsorption and osteoblast behavior on hydroxyapatite containing silicon. Sandwich PhD thesis (stay in France feb 2008- march 2009), Federal University of Rio de Janeiro, Brazil.
  Now: post-doc researcher, University of Strasbourg, France.
- J. Möller (2007-2010) Nanoporous vectors of biomolecules based on calcium phosphate ceramics for bone regeneration. Now: House wife.
- F. Sima (2007-2011) Synthesis of hybrid biomimetic nanostructures (calcium phosphates + proteins) by advanced laser techniques. Structural, biochemical and biological studies. Co-supervised PhD thesis with University of Bucharest.
  Now: Researcher, University of Bucharest, Romania.
- P. Davidson (2008-2011) The interaction of healthy and cancerous cells with nano- and microtopography. Now: post-doc researcher, Curie Institute, Paris.
- D. Campos (2008-2012) Study of behavior of bone cells cultured on collagen type I-hydroxyapatite composites. Co-supervised thesis with Federal University of Rio de Janeiro, Brazil. Now: project manager, Tornier, Montbonnot, France.
- D. Tavarès (2008-2012) In vitro evaluation of the behavior of human osteoprogenitor cells and macrophages on tricalcium phosphate samples doped or not with magnesium. Co-supervised thesis with Federal University of Rio de Janeiro, Brazil.
  Now: assistant professor, Federal University of Sergipe, Brazil.
- F. Badique (2010-2013) Mechanobiology of cancer cells on surfaces with controlled topography and chemistry. Now: project manager, Viollier AG, Allschwil, Switzerland.
- W. Querido (2011-2014) The effects of strontium ranelate on the bone-like apatite produced in osteoblast cell culture and on the interaction of cells with biomaterials. Co-supervised thesis with Federal University of Rio de Janeiro, Brazil.
  Now: post-doc researcher, USA.
- N. Tusamda (2015-2018) Deformability of cancerous cells on 3D microstructured surfaces.

Post-doc supervised

- Dr Mihaela Mateescu-Ciobanu, march 2008 - december 2009, IS2M, Mulhouse
- Dr Eduardo Almeida, october 2009 - september 2010, IS2M, Mulhouse
- Dr Laurent Pieuchot, august 2014 - september 2016, IS2M, Mulhouse
- Dr Vanessa Belaud, jan 2016 – dec 2016, IS2M, Mulhouse
- Dr Isabelle Brigaud, march 2015 – present, IS2M, Mulhouse
- Dr Pablo Rougerie, april 2015 – present, ICB, UFRJ, Rio de Janeiro

Last grants and financial supports

• 2012-2017 ANR Blanc SINUS SURF « Model sinusoidal surfaces for characterizing the influence of topographically-induced deformation on eucaryotic cells »
• 2013-2017 ANR International (France-Romania) BIOCOAT-BY-LASER « Innovative biomimetic nano-structured coatings for orthopaedic implants by advanced pulsed laser methods »
• 2014-2017 Special Visiting Researcher, Ciencia sem Fronteiras fellowship, Rio de Janeiro, Brazil, « Cell response to micro-structured surfaces: Application for biomaterials and cancer research »
• 2015 Ligue Contre le Cancer Grand-Est « Deformability of cancerous cells nuclei on microstructured surfaces: Relation with agressivity of metastatic cells»
• 2015-2019 IRTG GFK1642 “Soft Matter Science: Concepts for the Design of Functional Materials”
• 2016-2019 Interreg V “NANOTRANSMED: Nanomedicine: from diagnosis to implantology”