

Biomaterial design & development

Sabine Van Rijt

Dr. Sabine van Rijt is an Assistant Professor in the MERLN Institute for Technology-Inspired Regenerative Medicine. She obtained her PhD in Inorganic Chemistry with Prof. Peter Sadler at the University of Warwick (UK). She then moved to Germany where she received an Alexander von Humboldt postdoctoral fellowship and an award from the Bavaria government to perform her postdoctoral work at the Helmholtz Centre Munich (Germany). During this time, she developed novel therapies for the treatment of lung disease based on multifunctional nanoparticles carrying small-molecule therapeutics. In her current work as Assistant Professor at MERLN she works in the field of inorganic nanomaterials for tissue regeneration. In particular, she is interested in developing multifunctional nanoparticles to prepare instructive surfaces, to synthesize responsive nanobiomaterials for tissue regeneration, and to develop nanoparticles for theranostic applications. As a participant of the Gravitation consortium Materials-driven Regeneration (www.mdr.nl), she is researching material instructed bone regeneration processes. Under a ZonMW TOP grant (2017), she works together with clinicians to further develop nanoparticles for imaging applications and apply them in various in vivo models. She is also active in two large EU consortia H2020 grants using nanoparticles to improve our understanding of in vivo stem cell regenerative processes (PREMSTEM) and within 3D assemblies (JOINTPROMISE).

Matt Baker

Matthew Baker received his B.S. in chemistry (2006) at Clemson University and his PhD in 2012 in Physical Organic Chemistry under the guidance of Dr. Ronald K. Castellano at the University of Florida. After his PhD, he moved to Eindhoven University of Technology to design and characterize water-soluble supramolecular polymers under guidance of Prof. E. W. Meijer. Here he started a foray into regenerative medicine with supramolecular hydrogelators for extracellular matrix (ECM) mimics. In 2015, he joined the MERLN institute at Maastricht University to develop polymeric and supramolecular materials for tissue engineering and started the BioMatt group as assistant professor in 2017. His research interests include the synthesis and characterization of novel and dynamic materials to mimic the cellular environment and to influence cellular behavior. Of particular interest is the use of reversible supramolecular interactions (e.g. host-guest, supramolecular polymers, hydrogen bonding) to build these materials, the use of fabrication technologies (e.g. 3D printing) to create relevant 3D tissue constructs, and the design of biomimetic mechanophores.