Curriculum Vitae

Harshal Zope was born in Bhusawal, India on 26th Jan 1986. He finished his secondary school education at K. Narkhede Vidyalay, Bhusawal and later on moved to K.T.H.M. College Nashik for his higher secondary school. He pursued his interest in research by joining Institute of Biotechnology and Bioinformatics, University of Pune, India. In Pune University, he obtained a 5 years integrated M.Sc. degree in Biotechnology (2008) as well as M.Tech degree in Biotechnology (2009). During his dual masters education, he worked on several projects and gained expertize as well as interest in peptide research.

In Feb 2010, he joined Leiden University for his PhD research under the supervision of Dr. Alexander Kros. During his PhD, he worked on peptide based functional biomaterials for various applications such as understanding membrane fusion, drug delivery and vaccine development. His PhD research has led to several publication in peer reviewed journals and was also showcased at renowned conferences like the Gordon research conference (GRC), "peptides, chemistry & biology of", 2014 in USA and the EMBO workshop on "cell-cell fusion", 2014 in Israel. His strong desire to develop a therapeutic product for society led to the filing of a patent on "cell surface engineering and direct drug delivery mediated by lipidated coiled-coil motif" as well as "enhanced in vivo uptake of drugs in a zebrafish based toxicity screening assay".

Currently, Harshal Zope is a postdoctoral fellow at laboratory of nanomedicine, Harvard Medical School/Brigham and Women's Hospital (HMS/BWH), Boston, USA. In the group of Prof. Omid Farokhzad and Prof. Jinjun Shi, he is developing a novel nanotechnology platform for HIV vaccine and cancer therapy.

List of patents and publications

Patent published on cell surface engineering and direct drug delivery mediated by lipidated coiled-coil motif, **H. Zope**, F. Versluis, H. R. Marsden and A. Kros, **2012,** PCT/EP2012/071320.

Patent in process on enhanced in vivo uptake of drugs in a zebrafish based toxicity screening assay, **H. Zope**, A. Ordas, H. Spaink and A. Kros, **2013.**

H. Zope, J. Voskuhl and A. Kros; insights into membrane fusion: an influence of variable polyethylene glycol linker region, *(manuscript in preparation)*

H. Zope,* P. Racz,* Y. Gao,* A. Ordas, H. Spaink and A. Kros, in vivo uptake of drugs in a zebrafish based toxicity screening assay, *(manuscript in preparation)*

G. Martelli, **H. Zope,** E. Nicolosi, R. Kieltyka and A. Kros; "influence of lipid bilayer thickness in membrane fusion", *(manuscript in preparation)*

V. Dmitrović, **H. Zope** , J. J.M. Lenders , G. de With and N.A.J.M. Sommerdijk and A. Kros; random polypeptides and their effect on $CaCO_3$ biomineralization, *(manuscript in preparation)*

M. Rabe, A. Boyle, **H. Zope**, F. Versluis and A. Kros; determination of oligomeric states of peptide complexes using thermal unfolding curves, *(manuscript in preparation)*

M. Rabe, **H. Zope and** A. Kros; Accesibility of ^{13}C labeled amides in amphipathic helices in peptide-peptide and peptide-membrane complexes, *(manuscript in preparation)*

J. J.M. Lenders, **H. Zope**, A. Yamagishi, P. H.H. Bomans, A. Arakaki, A. Kros, G. de With and N.A.J.M. Sommerdijk; bioinspired magnetite crystallization directed by random copolypeptides, *Adv. Funct. Mater.,* ***Accepted***

H. Zope,* V. Dmitrović,* J. J.M. Lenders,* G. de With, N.A.J.M. Sommerdijk and A. Kros; a library of random copolypeptides by solid phase synthesis, **2014**, *Biomacromolecules,* 15(10), 3687-95

M. Rabe, C. Schwieger, **H. Zope**, F. Versluis and A. Kros; membrane interactions of fusogenic coiled-coil peptides: implications for lipopeptide mediated vesicle fusion, **2014***, Langmuir,* 30 (26), 7724-7735**.**

H. Zope,* F. Versluis,* A. Ordas, J. Voskuhl, H. Spaink and A. Kros; *In vitro* and *In vivo* bio-membrane engineering using coiled-coil motif, *Angew Chem. Int. Ed. Eng*., **2013***, 52, 14247-14251.*

H. Zope,* C. Barnier Quer,* P.H.H. Bomans, N.A.J.M. Sommerdijk, W. Jiskoot and A. Kros; peptide amphiphile nanoparticles enhance the immune response against a CpG adjuvanted influenza antigen, *Ad. Healthc. Mater.,* **2013,** *3, 343-348.*

G. Martelli, **H. Zope**, M.B. Capell and A. Kros; coiled-coil peptide motifs as thermo responsive valves for mesoporous silica nanoparticles, *Chem. Commun.,* **2013**, 49, 9932-9934.

F. Versluis, J. Voskuhl, B. Van Kolck, **H. Zope**, Bremmer M., Albregtse T. and A. Kros; in situ modification of plain liposomes with lipidated coiled coil forming peptides induces membrane fusion, *J. Am. Chem. Soc*., **2013**, vol. 135, 8057–8062.

A.S. Schenk, **H. Zope**, Y.Y. Kim, A. Kros., N.A.J.M. Sommerdijk and F.C. Meldrum; polymer-induced liquid precursor (PILP) phases of calcium carbonate formed in the presence of synthetic acidic polypeptides-relevance to bio-mineralization, *Faraday Discussions,* **2012**, vol. 159, 327-344.

J. Voskuhl, C. Wendeln, F. Versluis, E. Fritz, O. Roling, **H. Zope**, C. Schulz, S. Rinnen, H.F. Arlinghaus, B.J Ravoo, and A. Kros; immobilization of liposomes and vesicles on patterned surfaces by a peptide coiled-coil binding motif, *Angew. Chem.-Int. Edit*, **2012**, 51(50), 12616–12620.

T. Zheng, J. Voskuhl, F. Versluis, **H. Zope**, I. Tomatsu, H.R. Marsden, and A. Kros; controlling the rate of coiled coil driven membrane fusion, *Chem. Commun.,* **2012***,* 49*,* 3649-3651.

C. Barnier Quer, H.R. Marsden, S. Romeijn, **H. Zope**, A. Kros and W. Jiskoot; polymersomes enhance the immunogenicity of influenza subunit vaccine, *Polym. Chem***.**, **2011**, 2, 1482-1485.

I. Tomatsu, H.R. Marsden, M. Rabe, F. Versluis, T. Zheng, **H. Zope** and A. Kros; influence of pegylation on peptide-mediated liposome fusion, *J. Mater. Chem*., **2011**, 21, 18927-18933.

*Both authors contributed equally