

Projects of the SNI PhD School 2020

Project	Principle Investigator (PI) and Co-PI	PhD student
P1304 Folding mechanisms of beta-barrel outer membrane proteins and their catalysis by natural holdases and foldases	S. Hiller (Univ. Basel) D. Müller (D-BSSE)	N. Ritzmann
P1310 Plasmonic sensing in biomimetic nanopores	Y. Ekinici (PSI) R. Y. H. Lim (Univ. Basel)	D. Sharma
P1402 Lightweight structures based on hierarchical composites	C. Dransfeld (FHNW) C. Schönenberger (Univ. Basel)	W. Szmyt
P1407 Coupling a single ion to a nanomechanical oscillator	S. Willitsch (Univ. Basel) M. Poggio (Univ. Basel)	P. Fountas
P1501 Nanomechanical mass and viscosity measurement-platform for cell imaging	T. Braun (Univ. Basel) E. Meyer (Univ. Basel)	P. Oliva
P1502 Investigating individual multiferroic and oxidic nanoparticles	A. Kleibert (PSI) M. Poggio (Univ. Basel)	D. M. Bracher
P1503 Watching giant multienzymes at work using high-speed AFM	T. Maier (Univ. Basel) R. Y. H. Lim (Univ. Basel)	S. Singh
P1504 Valleytronics in strain-engineered graphene	C. Schönenberger (Univ. Basel) M. Calame (Univ. Basel)	L. Wang
P1505 A programmable e-beam shaper for diffractive imaging of biological structures at Å resolution	S. Tsujino (PSI) J. P. Abrahams (Univ. Basel)	P. Thakkar
P1601 Optical plasmonic nanostructures for enhanced photochemistry	E. Constable (Univ. Basel) S. Fricke (CSEM MuttENZ)	L. Driencourt
P1602 Self-assembly and magnetic order of 2D spin lattices on surfaces	T. A. Jung (Univ. Basel) J. Dreiser (PSI)	M. Heydari
P1603 A mechano-optical microscope for studying force transduction in living cells	R. Lim (Univ. Basel) E. Meyer (Univ. Basel)	T. Kozai
P1604 Selective reconstitution of biomolecules in polymer-lipid membranes	W. Meier (Univ. Basel) U. Pieles (FHNW)	S. Di Leone
P1606 Smart peptide nanoparticles for efficient and safe gene therapy	C. Palivan (Univ. Basel) J. K. Benenson (D-BSSE, ETHZ Basel)	S. Tarvirdipour
P1607 Understanding and engineering of phonon propagation in nanodevices by employing energy resolved phonon emission and adsorption spectroscopy	I. Zardo (Univ. Basel) C. Schönenberger (Univ. Basel)	L. Gubser
P1701 Van der Waals 2D semiconductor nanostructures with superconducting contacts	A. Baumgartner (Univ. Basel) C. Schönenberger (Univ. Basel)	M. Ramezani
P1702 Single organelle size sorting by a nanofluidic device	Y. Ekinici (PSI) H. Stahlberg (Univ. Basel)	T. Mortelmans
P1704 Evolving protease enzymes with new sequence specificity using peptide-hydrogel cell encapsulation	M. Nash (Univ. Basel) S. Reddy (D-BSSE, ETHZ Basel)	J. López Morales

Project	Principle Investigator (PI) and Co-PI	PhD student
P1705 Genetic selection of nanocatalysts	S. Panke (D-BSSE, ETHZ Basel) T. Ward (Univ. Basel)	E. Rousounelou
P1706 Ultrasensitive force microscopy and cavity optomechanics using nanowire cantilevers	M. Poggio (Univ. Basel) F. Braakman (Univ. Basel)	D. Jäger
P1707 Nano-photonics with van der Waals heterostructures	R. Warburton (Univ. Basel) I. Zardo (Univ. Basel)	L. Sponfeldner
P1708 Non-visual effects of LED lighting on humans	R. Ferrini (CSEM) E. Meyer (Univ. Basel)	T. Aderneuer
P1801 Bioinspired nanoscale drug delivery systems for efficient targeting and safe <i>in vivo</i> application	J. Huwyler (Univ. Basel) C. Palivan (Univ. Basel)	C. Alter
P1802 From Schrödinger's equation to biology: Unsupervised quantum machine learning for directed evolution of anti-adhesive peptides	M. Nash (Univ. Basel) A. von Lilienfeld (Univ. Basel)	V. Doffini
P1803 Nanoscale mechanical energy dissipation in quantum systems and 2D-materials	E. Meyer (Univ. Basel) M. Poggio (Univ. Basel)	A. Ollier
P1804 Picoscopic mass analysis of mammalian cells progressing through the cell cycle	D. Müller (ETHZ D-BSSE) W. Meier (Univ. Basel)	I. Incaviglia
P1805 High-throughput multiplexed microfluidics for antimicrobial drug discovery	E. van Nimwegen (Univ. Basel) V. Guzenko (PSI)	M.-E. Alaball Pujol
P1807 Andreev Spin Qubit (ASQ) in GeSi nanowires	C. Schönenberger (Univ. Basel) F. Braakman (Univ. Basel)	J.H. Ungerer
P1808 Quantum dynamics of an ultracold ion coupled to a nanomechanical oscillator	S. Willitsch (Univ. Basel) M. Poggio (Univ. Basel)	M. Weegen
P1901 Microfluidics to study Huntington's Disease by visual proteomics	T. Braun (Univ. Basel) H. Stahlberg (Univ. Basel)	A. Fränkl
P1902 Directional 3D nanofiber network to mimic <i>in-vivo</i> myocardial syncytium towards guiding contraction patterns in <i>in-vitro</i> heart models	M. Gullo (FHMW Muttenz) M. Poggio (Univ. Basel)	F. Züger
P1903 Neutron nanomediators for non-invasive temperature mapping of fuel cells	M. Kenzelmann (Univ. Basel/PSI) P. Boillat(PSI)	A. Ruffo
P1904 Revealing protein binding dynamics using time-resolved diffraction experiments at SwissFEL	C. Padeste (PSI) T. R. Ward (Univ. Basel)	M. Carrillo
P1905 Magnetic force microscopy with nanowire transducers	M. Poggio (Univ. Basel) E. Meyer (Univ. Basel)	L. Schneider
P1906 Machine learning assisted design of heteromeric self-assembled molecular capsules Spin-opto-nanomechanics	K. Tiefenbacher (Univ. Basel) A. von Lilienfeld (Univ. Basel)	I. Martyn
P1907 Spin-opto-nanomechanics	P. Treutlein (Univ. Basel) P. Maletinsky (Univ. Basel)	G.-L. Schmid
P1908 Chiral recognition in molecular nanowires from square-planar Platinum(II) complexes	O. Wenger (Univ. Basel) C. Sparr (Univ. Basel)	A. Huber