

## VILLUM Young Investigators 2012-2018

2018	Project Title	Organisation Name	Department Name	Primary Applicant	Amount Granted
1	Unraveling the complex and prebiotic chemistry of star-forming regions	University of Copenhagen	Niels Bohr Institute	Lars E. Kristensen	DKK 9.368.760,00
2	STING: Studying Transients In the Nuclei of Galaxies	University of Copenhagen	Niels Bohr Institute	Georgios Leloudas	DKK 9.906.646,00
3	Deciphering Cosmic Neutrinos with Multi-Messenger Astronomy	University of Copenhagen	Niels Bohr Institute	Markus Ahlers	DKK 7.350.000,00
4	Detecting and investigating signatures of natural selection driven by epidemics of deadly infectious diseases	University of Copenhagen	Department of Biology	Ida Moltke	DKK 5.000.000,00
5	Evolution-guided discovery of novel receptor ligands from animal venoms	University of Copenhagen	Department of Biology	Helena Safavi-Hemami	DKK 9.528.994,00
6	A partial cumulate origin of the subcontinental lithospheric mantle?	University of Copenhagen	Department of Geosciences and Natural Resource Management	Kristoffer Szilas	DKK 7.398.929,00
7	Cracking the mosquito olfactory code to beat malaria	University of Southern Denmark	Department of Biology	Olena Riabinina	DKK 9.294.645,00
8	Atomic Ensembles for Clean Energy and Synthesis (AtomSyn)	University of Copenhagen	Department of Chemistry	María Escudero Escribano	DKK 9.999.987,00
9	Water: Divide and Conquer (Split and Purify)	University of Copenhagen	Department of Chemistry	Jiwoong Lee	DKK 7.000.000,00
10	Two-dimensional silicon for electronics	Technical University of Denmark	Department of Micro- and	Luca Camilli	DKK 9.567.895,00
11	Toward Causal Learning in Real World Applications: Advances in Nonlinear and Time Series Models (CausalANTS)	University of Copenhagen	Department of Mathematics	Jonas Peters	DKK 8.172.740,00
12	Acceptorless alcohol dehydrogenation in ionic liquid by homogeneous catalysis	Technical University of Denmark	Department of Chemistry	Martin Nielsen	DKK 9.928.835,00
13	Protein Superstructures as Smart Biomaterials (ProSmart)	University of Copenhagen	Department of Pharmacy and Analytical Chemistry	Vito Foderà	DKK 8.590.854,00
14	Optical Time-Lens for Ultrahigh Capacity Passive Optical Network (Lens-PON)	Technical University of Denmark	Department of Photonics Engineering	Pengyu Guan	DKK 9.981.115,00
15	Complex Shapes	Aarhus University	Department of Mathematics	Cristiano Spotti	DKK 7.000.000,00
16	Glutathione transferases in plant specialized metabolism	University of Copenhagen	Department of Plant and Environmental Sciences	Nanna Bjarnholt	DKK 9.996.847,00
17	Ultra fast super-resolution imaging in 3 D for Visualizing transport of Nano particles and Membrane Nano-domains	University of Southern Denmark	Department of Chemistry, Bioscience and Environmental Technology	Eva Arnspang Christensen	DKK 8.076.450,00
18	Large-scale acoustic holography	Technical University of Denmark	Department of Electrical Engineering	Efren Fernandez-Grande	DKK 7.224.374,00
2017	Project Title	Organisation Name	Department Name	Primary Applicant	Amount Granted
1	Exploring the unique chemistry of lanthanide ions	University of Copenhagen	Department of Chemistry	Thomas Just Sørensen	DKK 9.900.991,00
2	Measuring with no tape	Technical University of Denmark	DTU Compute	Søren Hauberg	DKK 9.719.117,00
3	Novel molecular targets for beetle pest control - from genome to phenome	University of Copenhagen	Department of Biology	Kenneth Halberg	DKK 8.490.281,00
4	Breaking barriers in scattering amplitudes: Understanding via computation (and vice versa) computerteknologi (og omvendt)	University of Copenhagen	Niels Bohr Institute	Jacob Bourjaily	DKK 7.390.515,00
5	Udvikling af to-dimensionelle materialer ved hjælp af syntetisk design	Technical University of Denmark	DTU Chemistry	Kasper Steen Pedersen	DKK 8.569.347,00
6	Electronic structure up-close with photoemission at the nanoscale	Aarhus University	Science and Technology	Søren Ulstrup	DKK 9.974.962,00
7	Cycling in the "plastisphere": The biogeochemical fate of marine (micro)plastic	University of Southern Denmark	Department of Biology	Nicole Rita Elisabeth Posth	DKK 9.746.336,00
8	Energy-efficient optical communications at 2 micron beyond capacity crunch	Technical University of Denmark	Department of Photonics	Hao Hu	DKK 10.005.091,00
9	Structural characterization of inorganic nanoclusters: Materials chemistry between molecules and solids molekylær og partikler	University of Copenhagen	Department of Chemistry	Kirsten Marie Ørnstbjerg Jensen	DKK 9.998.048,00
10	The influence of Earth surface processes on Scandinavian ice sheet evolution and collapse	Aarhus University	Department of Geoscience	Vivi Kathrine Pedersen	DKK 7.496.783,00
11	HiddenRisk – understanding the impact of human activities on subterranean biodiversity	University of Copenhagen	Natural History Museum of Denmark	Ana Sofia Reboleira	DKK 7.075.471,00
12	Towards sustainable protein sources for Europe: Biosynthesis and transport of the lupin alkaloids	University of Copenhagen	Department of Plant and Environmental Sciences	Fernando Geu Flores	DKK 9.996.017,00
13	Non-natural selection of carbohydrate-based receptors	Technical University of Denmark	DTU Chemistry	Sophie Beeren	DKK 9.998.528,00
14	Will the three-wave interaction prevent the fusion dream?	Technical University of Denmark	DTU Physics	Stefan Kragh Nielsen	DKK 7.846.488,00
15	Deciphering the role of microbial dark matter by novel DNA sequencing approaches	Aalborg University	Department of Chemistry and Bioscience	Mads Albertsen	DKK 9.990.381,00
16	Dispersal, differentiation and speciation in island bird communities	University of Copenhagen	Natural History Museum of Denmark	Knud Jønsson	DKK 9.999.971,00
2016	Project Title	Organisation Name	Department Name	Primary Applicant	Amount Granted
1	Palæogenomic insights into late Pleistocene megafauna dynamics and extinction	University of Copenhagen	Natural History Museum of Denmark	Eline Lorenzen	DKK 6.999.639,00

2	Novel tools for highly efficient detection of nucleic acids - going beyond amplification	University of Southern Denmark	Department of Physics, Chemistry and Pharmacy	Kira Astakhova	DKK 6.959.400,00
3	NADEC - Advanced NanoBiosensor for Rapid and Sensitive Detection of Multiple Contaminants in Food	Technical University of Denmark	DTU Nanotech	Yi Sun	DKK 6.995.869,00
4	Big Data Bioinformatics - when biochemical signaling networks meet huge spatiotemporal OMICS data	University of Southern Denmark	Department of Mathematics and Computer Science	Jan Baumbach	DKK 6.408.150,00
5	Probing the Structures and Atmospheres of Small Exoplanets	University of Copenhagen	Natural History Museum of Denmark	Lars A. Buchhave	DKK 6.838.855,00
6	Type theories for reactive programming	IT University of Copenhagen	Computer Science	Rasmus Ejlers Møgelberg	DKK 6.439.546,00
7	Mesoscopic electron transport in correlated oxides heterostructures	University of Copenhagen	Niels Bohr Institute	Thomas Sand Jespersen	DKK 7.000.000,00
8	Engineering highly selective heterogenous nanoparticle catalysts	Technical University of Denmark	DTU Chemistry	Søren Kegnæs	DKK 6.997.977,00
9	Marine biodiversity and ecosystem functioning: Key patterns and processes in nature	Technical University of Denmark	DTU Aqua	Martin Lindegren	DKK 4.700.000,00
10	Gas to stars, stars to dust - tracing star-formation through cosmic time	University of Copenhagen	Niels Bohr Institute	Georgios Magdis	DKK 4.999.257,00
11	Neutrinos on Ice	University of Copenhagen	Niels Bohr Institute	David Jason Koskinen	DKK 4.910.549,00
12	Appl. of water vapor sorption and spectroscopy for novel characterization of surface and engineering soil properties	Aarhus University	Department of Agroecology	Emmanuel Arthur	DKK 4.471.427,00
13	The limits of computation	Aarhus University	Department of Computer Science	Kasper Green Larsen	DKK 5.000.000,00
14	Theory of astrophysical neutrinos and their sources	University of Copenhagen	Niels Bohr Institute	Irene Tamborra	DKK 4.996.416,00
15	Joined at the hip: Quantifying effective concentrations in supra-molecular biological assemblies	Aarhus University	Department of Molecular Biology and Genetics	Magnus Kjærgaard	DKK 5.000.000,00
16	Sugar export from plant leaves: From biometrics to biophysics	Technical University of Denmark	DTU Physics	Kaare Hartvig Jensen	DKK 4.463.788,00
17	How does climate change impact plants and their herbivores? Eucalyptus and the Koala	University of Copenhagen	Department of Plant and Environmental Sciences	Elizabeth Heather Neilson	DKK 4.993.975,00
18	Quantifying convective precipitation extremes under changing climate	University of Copenhagen	Niels Bohr Institute	Jan Olaf Mirko Härter	DKK 6.974.592,00
19	Protein level regulation of transcription factor networks	University of Copenhagen	Department of Plant and Environmental Sciences	Meike Burow	DKK 6.999.825,00
20	Topological photonic circuits	University of Copenhagen	Niels Bohr Institute	Søren Stobbe	DKK 6.999.931,00
<b>2015</b>					
1	Zero-Delay Information Processing in Feedback Systems	Aalborg University	Department of Electronic Systems	Jan Østergaard	DKK 5.791.024,00
2	In silico design of efficient materials for next generation batteries (Mat4Bat)	Technical University of Denmark	DTU Energy	Juan Maria Garcia Lastra	DKK 6.997.318,00
3	Spectrum and Energy Efficient Signalling Techniques for Optical Fiber Data Communications	Technical University of Denmark	Department of Photonics	Juan José Vegas Olmos	DKK 6.773.802,00
4	Multispecies biofilms: Unraveling the black box	University of Copenhagen	Department of Biology	Mette Burmølle	DKK 6.961.662,00
5	Structure functions correlations: New insights in old premises	University of Copenhagen	Department of Chemistry	Nikos Hatzakis	DKK 6.766.341,00
6	Past and future dynamics of the Greenland Ice Sheet: What is the ocean hiding?	The Geological Survey of Denmark and Greenland (GEUS)	-	Camilla Snowman Andresen	DKK 6.993.742,00
7	How termite farmers keep fungus crops disease-free (TREASURE)	University of Copenhagen	Department of Biology	Michael Thomas-Poulsen	DKK 6.690.432,00
8	HEFT: Systematic Exploration of the nature of the Higgs like Boson, and the Standard Model Effective Theory	University of Copenhagen	Niels Bohr Institute	Michael Trott	DKK 6.992.617,00
9	A high-throughput screening approach for advancing the engineering of new materials	Technical University of Denmark	DTU Nanotech	Alireza Dolatshahi-Pirouz	DKK 3.999.982,00
10	Revealing the Role of Species Interactions in Biogeography	University of Copenhagen	Natural History Museum of Denmark	Sally Anne Keith	DKK 3.962.678,00
11	Study of the molecular mechanisms in zinc signaling - investigating its role as a second messenger	University of Southern Denmark	Department of Biochemistry and Molecular Biology	Tine Engberg Thingholm	DKK 3.993.150,00
12	Solar Connections	Aarhus University	Department of Geoscience	Christoffer Karoff	DKK 3.485.816,00
13	Nuclear astrophysics at the precision frontier	Aarhus University	Department of Physics and Astronomy	Oliver Kirsebom	DKK 2.856.349,00
14	Galactic archaeology: unraveling the history of the Milky Way	Aarhus University	Department of Physics and Astronomy	Victor Silva Aguirre	DKK 3.995.998,00
15	Population Genomics of Bronze Age Europeans	University of Copenhagen	Natural History Museum of Denmark	Morten Erik Allentoft	DKK 3.927.213,00
16	Partitioned quantum teleportation of multi-photon states	Technical University of Denmark	Department of Physics	Jonas Schou Neergaard-Nielsen	DKK 3.999.707,00
17	Particle seeded III-V semiconductor nanostructures: Going beyond gold for low dimensional nanostructure fabrication	University of Copenhagen	Niels Bohr Institute	Jessica Bolinsson	DKK 2.448.206,00
18	The genetic basis of host specificity: Can pathogenic host jumps be predicted?	University of Copenhagen	Department of Plant and Environmental Sciences	Henrik Hjarvard De Fine Licht	DKK 3.944.400,00

19	Shedding light on dark matter in galaxy clusters	University of Copenhagen	Niels Bohr Institute	Claudio Grillo	DKK 3.983.134,00
20	Semi-analytical anyon models	Aarhus University	Department of Physics and Astronomy	Anne Ersbak Bang Nielsen	DKK 3.960.739,00
21	Special geometry, torsion and symmetry	Aarhus University	Department of Mathematics	Thomas Bruun Madsen	DKK 2.095.358,00
<b>2014</b>					
1	Identifying the genetic basis for eukaryotic speciation and genus formation using a unique high resolution DNA-compe	Technical University of Denmark	DTU Bioengineering	Mikael Rørdam Andersen	DKK 6.866.416,00
2	Intelligent 3D cell scaffolds for environmental applications	Technical University of Denmark	DTU Nanotech	Stephan Sylvest Keller	DKK 6.995.115,00
3	Characterizing the regulatory circuitry of global lipid metabolism	University of Southern Denmark	Department of Molecular Bioscience	Christer S. Ejsing	DKK 5.313.000,00
4	Glacial history of the Northeast Greenland icesheet and its contribution to sealevel change during the last 11.700 years	Aarhus University	Department of Geoscience	Nicolaj Krog Larsen	DKK 6.992.118,00
5	Quantum dynamics in non-equilibrium systems	University of Copenhagen	Niels Bohr Institute	Mark Rudner	DKK 6.964.987,00
6	Quantum dot Energy level Engineering for laser applications on InP and Si platforms (QUEENS)	Technical University of Denmark	Department of Photonics	Elizaveta Semenova	DKK 6.977.938,00
7	Spatial Calibration and Evaluation in distributed hydrological modeling using satellite remote sensing data (SPACE)	GEUS - De Nationale Geologiske Undersøgelser for Danmark og Grønland	-	Simon Stisen	DKK 6.964.400,00
8	Quantum network of artificial atoms	Technical University of Denmark	Department of Photonics	Nika Akopian	DKK 3.997.067,00
9	Unlocking the potential of Monte Carlo in molecular simulation	University of Copenhagen	Department of Biology	Wouter Krogh Boomsma	DKK 3.989.688,00
10	Characterizing the differences and similarities between the genomes of industrially relevant microorganisms	University of Copenhagen	Department of Biology	Rute Fonseca	DKK 3.962.379,00
11	A genomic approach to study and conserve the biodiversity of the African megafauna	University of Copenhagen	Department of Biology	Rasmus Heller	DKK 3.591.203,00
12	Dissipative Engineering of Topological phases of matter	University of Copenhagen	Niels Bohr Institute	Michael J. Kastoryano	DKK 3.801.700,00
13	Photocatalytic low-dimensional hybrid organic-inorganic materials	Aarhus University	iNANO	Nina Lock	DKK 3.868.354,00
14	Dynamic quantum crystallography: Direct insights into the properties of crystalline materials	University of Copenhagen	Department of Chemistry	Anders Østergaard Madsen	DKK 3.990.421,00
15	A New phenomenon Yet to be resolved in ductile PLATE tearing (AnyPLATE)	Technical University of Denmark	Department of Mechanical Engineering	Kim Lau Nielsen	DKK 1.931.688,00
16	Onset and duration of the greatest speciation event of the Phanerozoic: Were present day biodiversity levels reached	University of Copenhagen	Natural History Museum of Denmark	Christian Mac Ørum Mosdal	DKK 3.742.494,00
17	Novel materials for high capacity batteries - Going beyond lithium	Aarhus University	iNANO	Dorthe B. Ravnsbæk	DKK 3.830.011,00
18	Primary producers under thinning ice - past responses and future projections for High Arctic Greenland	The Geological Survey of Denmark and Greenland (GEUS)	-	Sofia Ribeiro	DKK 3.716.468,00
19	Crystallization studied by interface pinning: from ab initio to coarse grained models	Roskilde Universitet	-	Ulf R. Pedersen	DKK 3.999.200,00
20	Bridging Scales to Understand and Predict Arctic Vegetation Under Climate Change (BRISCA)	Aarhus University	Department of Bioscience	Signe Normand	DKK 3.999.906,00
<b>2013</b>					
1	Trusted Cryptographic Primitives	Technical University of Denmark	Department of Applied Mathematics and Computer Science	Christian Rechberger	DKK 6.946.086,00
2	Organic photovoltaic - materials for energy production	Technical University of Denmark	DTU Energy	Eva Bundgaard	DKK 7.000.000,00
3	Assembling Large Molecules - Making Tools for Biology	Aarhus University	Department of Chemistry	Henrik Helligsø Jensen	DKK 6.610.950,00
4	Changing Scales in Computational Materials Science	University of Copenhagen	Department of Pharmacy and Analytical Chemistry	Jacco van de Streek	DKK 6.974.491,00
5	Optical Nanoengineered Components for Highcapacity Integrated silicon Photonics	Technical University of Denmark	Department of Photonics	Lars Hagedorn Frandsen	DKK 6.995.290,00
6	Exploring the role of interspecies interactions in relation to development and evolutionary dynamics	Technical University of Denmark	DTU Bioengineering	Lars Jelsbak	DKK 6.901.441,00
7	Solar variability and North Atlantic climate during the last 1500 years	Aarhus University	Department of Geoscience	Mads Faurschou Knudsen	DKK 6.734.750,00
8	Development of new silver nanocluster fluorophores for fluorescence nanoscopy	University of Copenhagen	Department of Chemistry	Tom Vosch	DKK 5.897.568,00
9	Controlling the conductor-insulator phase transition for light	University of Copenhagen	Niels Bohr Institute	David Garcia	DKK 3.479.547,00
10	Advanced Conductance Mapping : Multi-Metrology	Technical University of Denmark	DTU Nanotech	Dirch Hjorth Petersen	DKK 3.720.060,00
11	Super Resolution Microscopy in Membranes and Tissue	University of Southern Denmark	Department of Biochemistry and Molecular Biology	Jonathan Brewer	DKK 3.662.400,00
12	Phylogeography: Understanding ecological communities in space and time	University of Copenhagen	Department of Biology	Katharine Marske	DKK 3.913.125,00

13	Microbial community on the Greenland Ice Sheet as a possible factor affecting the physical behaviour of the ice sh	The Geological Survey of Denmark and Greenland (GEUS)	-	Marek Stibal	DKK 3.999.098,00
14	Morphology and Interfaces in Organic Bulk Heterojunction Solar Cells	Aarhus University	iNANO	Michael Ryan Hansen	DKK 3.613.746,00
15	The molecular mechanisms to break flower bud dormancy in fruit trees	University of Copenhagen	Department of Plant and Environmental Sciences	Raquel Sanchez Perez	DKK 3.905.165,00
16	Single-molecule photothermal spectroscopy with nanostrings	Technical University of Denmark	DTU Nanotech	Silvan Schmid	DKK 3.953.320,00
17	Oxygen Regulation on Earth - Testing Hypotheses for Early Animal Evolution	University of Copenhagen	Natural History Museum of Denmark	Tais Wittchen Dahl	DKK 3.123.235,00
18	Membrane interactions of heterologously expressed plant enzymes	Technical University of Denmark	DTU Biosustain	Susanna Seppälä	DKK 3.000.000,00
19	Disentangling mutation and selection in human evolution	Aarhus University	Bioinformatics Research Centre	Søren Besenbacher	DKK 2.603.353,00
<b>2012</b>					
1	Spatio-Temporal Filtering Methods for Enhancement and Separation of Speech	Aalborg University	Department of Architecture, Design and Media Technology	Mads Græsbøll Christensen	DKK 6.953.640,00
2	How small animals provide clues to large scale questions	University of Copenhagen	Department of Biology	Katrine Worsaae	DKK 4.866.480,00
3	Investigations of the membrane thermoelectric effect for solar-heat powered hydrogen production	Aarhus University	Department of Engineering	Anders Bentien	DKK 5.071.460,00
4	Layered Double Hydroxides - Functional Materials Inspired by Nature	University of Southern Denmark	Department of Physics, Chemistry and Pharmacy	Ulla Gro Nielsen	DKK 6.540.241,00
5	Approaching the ultimate capacity limits of optical communication	Technical University of Denmark	Department of Photonics	Darko Zibar	DKK 6.918.923,00
6	Dealing with uncertainty in low coverage sequencing data - with application for disease mapping	University of Copenhagen	The Bioinformatics Centre	Anders Albrechtsen	DKK 2.277.815,00
7	Earth Patterns	University of Copenhagen	Niels Bohr Institute	Joachim Mathiesen	DKK 6.441.621,00
8	Plant cell walls - rapid forward genetics	University of Copenhagen	Department of Plant and Environmental Sciences	Jesper Harholt	DKK 3.859.530,00
9	High-pressure synthesis and characterization of novel materials	Aarhus University	Department of Chemistry	Martin Bremholm	DKK 2.840.216,00
10	Arctic ecosystems under climate change: What controls emission of biogenic volatile organic compounds?	University of Copenhagen	Department of Biology	Riikka Rinnan	DKK 6.788.095,00
11	The Origin of the Matter/Antimatter Asymmetry in the Universe	University of Copenhagen	Niels Bohr Institute	Anders Tranberg	DKK 4.113.522,00
12	Fundamental Astrophysical Processes in Dilute Plasmas	University of Copenhagen	Niels Bohr Institute	Martin Pessah	DKK 4.463.900,00
13	High Resolution Networks	Technical University of Denmark	DTU Compute	Sune Lehmann	DKK 6.979.125,00
14	Biophysical study of cytoskeletal filaments and membrane shaping proteins in membrane protrusions	University of Copenhagen	Niels Bohr Institute	Poul Martin Bendix	DKK 3.376.175,00
15	Combined real-time Atomic Force Microscopy and Force Spectroscopy	Aarhus University	iNANO	Mingdong Dong	DKK 3.970.453,00