PCNSPA 2018
Photonic Colloidal Nanostructures: Synthesis, Properties, and Applications

Holiday Inn St. Petersburg Moskovskye Vorota Hotel
4 - 8 June 2018, St. Petersburg, Russia

4 June, Monday

14.30 - 14.35 Opening of PCNSPA 2018
14.35 - 14.40 Remembering Helmuth Möhwald, Gleb B. Sukhorukov

Focus on Fundamental Properties		
Chair: Alexander O. Govorov		
14.40 - 15.20	**Brahim Lounis** Bordeaux, France	**Invited Talk** *Reading the Spectral Fingerprint of Individual Nanocrystals*
15.20 - 16.00	**Dmitri Yakovlev** Dortmund, Germany	**Invited Talk** *Spin-Dependent Phenomena in Colloidal Nanocrystals*
16.00 - 16.20	Serguei V. Goupalov Jackson, Mississippi, USA	*Probing Morphological Effects with Polarization Photoluminescence Spectroscopy of Single Colloidal Nanoplatelets*
16.20 - 16.40 Coffee break		
16.40 - 17.20	**Anna V. Rodina** St. Petersburg, Russia	**Invited Talk** *Dangling Bond Spins in Colloidal Nanostructures*
17.20 - 17.40	Elena V. Shornikova Dortmund, Germany	*Negatively Charged Excitons in CdSe/CdS Colloidal Nanoplatelets with Thick Shells*
17.40 - 17.55	Aleksandr A. Golovatenko St. Petersburg, Russia	*A Comparative Study of the Band-Edge Exciton Fine Structure in c-CdSe and w-CdSe Colloidal Quantum Dots*
17.55 - 18.10	Ina V. Kalitukha St. Petersburg, Russia	*Electron, Hole and Exciton g-factors in $CsPbBr_3$ Colloidal Nanocrystals and CdSe/CdS Nanoplatelets Measured by Spin-Flip Raman Scattering*

18.30 - 21.30 Welcome reception

5 June, Tuesday

Focus on Synthetic Approaches and Fundamental Properties		
	Chair: Alexander Eychmüller	
10.00 - 10.40	**Mikhail V. Artemyev** Minsk, Belarus	**Invited Talk** *2D Colloidal Quantum Wells: Control of Physical Properties through Chemistry*
10.40 - 11.20	**Celso de Mello-Donegá** Utrecht, The Netherlands	**Invited Talk** *Nanoscale Ion-Exchange: a Versatile Route to Tailored Colloidal Nanostructures*
11.20 - 11.40 Coffee break		
11.40 - 12.00	Louis Biadala Dortmund, Germany	*Addressing Exciton Fine Structure in Colloidal Two-Dimensional CdSe Nanoplatelets*
12.00 - 12.20	Juan I. Climente Castelló de la Plana, Spain	*An Effective Mass Model for Colloidal Nanoplatelets*
12.20 - 12.35	Christian Meerbach Dresden, Germany	*Brightly Luminescent Core/Shell CdSe/Cd(Zn)S Nanoplatelets with Continuously Tunable Optical Properties*
12.35 - 12.50	Alexander W. Achtstein Berlin, Germany	*Tuning the Photonic Properties of Colloidal Quantum Wells*
12.50 - 13.05	Nathalie Pytlik Dresden, Germany	*Biosynthesis of Gold Nanoparticles by the Diatom Stephanopyxis turris*

13.05 - 14.20 Lunch break

Focus on Applications		
	Chair: Dmitri Yakovlev	
14.20 - 15.00	**Bruno Chaudret** Toulouse, France	**Invited Talk** *InP QDs for Temperature Monitoring in Magnetically Induced Catalysis*
15.00 - 15.40	**Alexander Eychmüller** Dresden, Germany	**Invited Talk** *Gels and Aerogels for Electrocatalysis*
15.40 - 16.00	Ekaterina V. Skorb St. Petersburg, Russia	*Evolution of Light-Induced Processes at Heterostructured Interfaces*
16.00 - 16.20 Coffee break		
16.20 - 16.35	Franziska Eichler Dresden, Germany	*Exploring the Interior of Mixed Crystals Consisting of Quantum Dots Encapsulated into Ionic Salt Matrices*
16.35 - 16.50	Belen Albela Lyon, France	*Towards Multifunctional Carriers based on Mesoporous Silica Nanoparticles*
16.50 - 17.05	David Beke Budapest, Hungary	*Tuning the Size of Silicon Carbide Nanoparticles using No-Photon Excitation Chemistry*
17.05 - 17.20	Victor A. Krivenkov Moscow, Russia	*Photoelectrochemical Response from Quantum Dots-Bacteriorhodopsin Hybrid Material under Near-Infrared Two-Photon Excitation*
17.20 - 17.35	Nikolay V. Ryzhkov St. Petersburg, Russia	*Semiconductors for Light Regulated Proton Pumping*
17.35 - 17.50	Luisa Sonntag Dresden, Germany	*Prospects of Metal Nanowire Networks as Transparent Electrodes for Organic Solar Cells and Light Emitting Diodes*

6 June, Wednesday

Focus on Nanocrystal Surface and Luminescence Decay		
	Chair: Bruno Chaudret	
10.00 - 10.40	**Nikolai Gaponik** Dresden, Germany	**Invited Talk** *Advanced Surface Design of Nanoparticles*
10.40 - 11.00	Vladimir F. Razumov Chernogolovka, Russia	*A New Photoluminescence Law and its Verification on the Example of Colloidal Quantum Dots and Nanoclusters Based on them*
11.00 - 11.20	Roman B. Vasiliev Moscow, Russia	*Spontaneous Folding of Ultrathin Colloidal CdTe and CdSe Nanosheets: Structure, Optical Properties and the Role of Ligands*
11.20 - 11.40 Coffee break		
11.40 - 12.00	Sergey A. Tovstun Chernogolovka, Russia	*Time-Resolved Photoluminescence of InP/ZnS Colloidal Quantum Dot Nanoclusters*
12.00 - 12.15	Chenghui Xia Utrecht, The Netherlands	*Efficient FRET-Based Nanoprobes Using Colloidal Quantum Dot-Dark Quencher as Donor-Acceptor Pair*
12.15 - 12.30	Anastasia S. Kulagina St. Petersburg, Russia	*Photodynamics of Transient Processes in Colloidal CdSe/ZnS QDs after Ultrafast Excitation*

12.30 - 14.20 Lunch break

Focus on Luminescence Decay		
	Chair: Anna V. Rodina	
14.20 - 15.00	**Andries Meijerink** Utrecht, The Netherlands	**Invited Talk** *Photonic Effects in Lanthanide-Doped nanocrystals*
15.00 - 15.40	**Ute Resch-Genger** Berlin, Germany	**Invited Talk** *Spectroscopic Characterization of Semiconductor and Lanthanide-Based Nanocrystals with Vis and NIR Emission*
15.40 - 16.00	Konstantin K. Pukhov Moscow, Russia	*Radiative Properties of a Quantum Dot in a Dielectric Shell*
16.00 - 16.15	Michael Greben Prague, Czech Republic	*Fully Radiative Emission of Size-Selected Colloidal Silicon Nanocrystals*
16.15 - 16.30	Irina V. Martynenko Berlin, Germany	*Photoluminescence Quantum Yield of Semiconductor Quantum Dots: Excitation Energy Dependence*
16.30 - 18.00	**Poster session + Special evening coffee**	

7 June, Thursday

Focus on Biomedical Applications		
	Chair: Gleb B. Sukhorukov	
10.00 - 10.40	**Mingyuan Gao** Beijing, China	**Invited Talk** *Functional Nanoparticles for Tumour Imaging*
10.40 - 11.20	**Igor Nabiev** Reims, France	**Invited Talk** *Advanced Nanotools for Imaging of Solid Tumors and Circulating and Disseminated Cancer Cells*
11.20 - 11.40 Coffee break		
11.40 - 11.55	Ana Rita O. Rodrigues Braga, Portugal	*Magnetoliposomes Based on Manganese Ferrite/Gold Nanoparticles for Applications in Cancer Therapy*
11.55 - 12.10	Christian Kijatkin Osnabrueck, Germany	*Nonlinear Optical Performance of Harmonic Nanoparticles*
12.10 - 12.25	Delphine Dassonville Lyon, France	*Core-Shell Location for Two Types of Quantum Dots in Mesoporous Silica Nanoparticles : Dual-Color Probe for Biomedical Imaging*
12.25 - 12.40	Yury A. Kyzishchin Moscow, Russia	*Optimization of the Excitation and Registration Modes to Detect Ultra-Small Amounts of Quantum Dots Based on Cadmium Selenide*

12.40 - 14.20 Lunch break

Focus on Carbon-Based Nanostructures		
	Chair: Celso de Mello-Donegá	
14.20 - 15.00	**Andrey L. Rogach** Kowloon, Hong Kong S.A.R.	**Invited Talk** *Synthesis, Optical Properties, and Applications of Carbon Dots*
15.00 - 15.40	**Gleb B. Sukhorukov** London, UK	**Invited Talk** *Optical Properties of Nanoparticles Formed in situ in Organized Structures*
15.40 - 16.00 Coffee break		
16.00 - 16.40	**Mikhail I. Vasilevskiy** Braga, Portugal	**Invited Talk** *Influence of Graphene on the Light Absorption and Emission Properties of Neighbouring Nanoparticles*
16.40 - 16.55	Yuan Xiong Kowloon, Hong Kong S.A.R.	*Carbonization Conditions Influence the Emission Characteristics and the Stability Against Photobleaching of Nitrogen Doped Carbon Dots*
16.55 - 17.10	Aleksandr Aleksenskii St. Petersburg, Russia	*Transition Sol-Gel in Nanodiamond Hydrosols*
17.10 - 17.25	César Rui Bernardo Braga, Portugal	*Influence of Graphene-Covered Substrate on Light Emission and Raman Scattering in Colloidal QDs*

8 June, Friday

Focus on Plexitonic Coupling and Chirality		
	Chair: Andries Meijerink	
10.00 - 10.40	**Alexander O. Govorov** Athens, Ohio, USA	**Invited Talk** *Bio-Plasmonics and Bio-Excitonics with Colloidal Nanocrystals: Chirality and Efficient Energy Transfer*
10.40 - 11.20	**Yurii K. Gun'ko** Dublin, Ireland	**Invited Talk** *Chiroptically Active Colloidal Nanostructures*
11.20 - 11.40 Coffee break		
11.40 - 12.00	Antoine Coste Versailles, France	*Dramatic decrease of the optical losses at 4K for thick-shell CdSe/CdS nanocrystals coupled to a flat gold film*
12.00 - 12.15	Simon A. Goncharov Moscow, Russia	*Photoluminescence Properties of Thin-Film Nanohybrid Material Based on Quantum Dots and Gold Nanorods*
12.15 - 12.30	Thomas Hendel San Sebastián, Spain	*From Weak to Strong Coupling - Plexcitonic Hybrid Structures from J aggregates and Different Shaped Gold Nanoparticles*
12.30 - 12.45	Xavier Quélin Versailles, France	*Realizing a nanoscale versatile active probe with a single CdSe/CdS nanocrystal attached at the end of a SNOM tip*
12.45 - 13.00	Anastasia K. Visheratina St. Petersburg, Russia	*Interaction of Semiconductor Nanocrystals and Chiral Molecules*
13.00 - 13.15	Anvar S. Baimuratov St. Petersburg, Russia	*Topological Distortion of Semiconductor Nanocrystals*
13.15 - 13.30	Yulia A. Gromova St. Petersburg, Russia	*Magnetic Circular Dichroism in 2D Colloidal Semiconductor Nanocrystals*
13.30 - 13.40 Closing remarks **13.40 - 14.00 Final Coffee break**		

Poster Session

P1: *Revealing the Formation Mechanism of $CsPbBr_3$ Perovskite Nanocrystals Produced via a Slowed-Down Microwave Assisted Synthesis*
Yanxiu Li

P2: *Near Infrared-Emitting Cu-In-Se-Based Quantum Dots via Cation Exchange*
Josephine F. L. Lox

P3: *Exciton-Phonon Coupling in Mono- and Bilayer $MoTe_2$*
Alexander W. Achtstein

P4: *Room Temperature Kinetics of Photoluminescence Decay of Colloidal Quantum Dots: Non-Exponential Behaviour and Detrapping of Charge Carriers*
Evgeny N. Bodunov

P5: *Studies on the Formation Mechanism of Supercrystals Prepared by Nanoparticle Self-Assembly*
Annett Reichhelm

P6: *Plasmon-Enhanced Förster Energy Transfer between Rhodamine and Squarilium Dye*
Niyazbek Kh. Ibrayev

P7: *Growth of the Thinnest Population of CdSe Nanosheets with UV Luminescence*
Daria A. Karlova

P8: *NIR-Emitting CuInS2/ZnS Dot-in-Rod Colloidal Heteronanocrystals by Seeded Growth*
Chenghui Xia

P9: *Integration of β-$NaYF_4$ Upconversion Nanoparticles into Polymers for Polymer Optical Fiber Applications*
Laurie Neumann

P10: *pH Sensitive Quantum Dots in a Hydrogel for Microfluidic Applications*
Aliaksei Dubavik

P11: *Size-Dependent Molar Absorption Coefficients of $CuInS_2$ Colloidal Quantum Dots*
Chenghui Xia

P12: *Interaction of CdSe/ZnS Quantum Dots with Plasmonic Nanoparticles Deposited on Amorphous Hydrogenated Carbon Thin Films*
Darya Khmelevskaya

P13: *The Influence of Metal Nanoparticles on Luminescence Properties of Phosphor Microcrystals*
Anna S. Matsukovich

P14: *Synthesis and Characterization of New Photoluminescent Gold Nanoclusters*
Liudmila L. Trotsiuk

P15: *Plasmonic Enhancement of Luminescence for Gold Nanorod-Quantum Dot Nanostructures*
Liudmila L. Trotsiuk

P16: *Conductivity of Two-Dimensional Lead Halide Perovskite Supercrystals*
Ilia A. Vovk

P17: *Synthesis, Structure and Optical Properties of Ultrathin CdSe/CdS and CdSe/ZnS Core-Shell Nanosheets*
Bedil M. Saidzhonov

P18: *Properties of Stimulated Emission PM567 Dye In Pores of Anodized Aluminium Oxide*
Aitbek K. Aimukhanov

P19: *Strong Coupling of Excitons in Quantum Dots with Surface Plasmon-Polaritons*
Viktor M. Nalbandyan

P20: *Synthesis of Ternary Metal Chalcogenide Colloidal Nanocrystals in Aqueous Solutions*
Dmitrii. S. Mazing

P21: *Optical Activity of Semiconductor Nanosprings with an Extra Electron*
Tatiana P. Pereziabova

P22: *TDDFT Approach to Chiral Surface Complexes of PAN Molecules and CdSe/ZnS Quantum Dots*
Evgeny V. Kundelev

P23: *Confocal Microscopy as an Approach for Studying the Optical Properties of Single Semiconductor Nanostructures*
Viktor Zakharov

P24: *Influence of Silver Nanoparticles on the Photocatalytic Properties of TiO2 Films*
Timur M. Serikov

P25: *QDs - SPIONs Complexes for Theranostics*
Anastasiia Bazhenova

P26: *Photonics of Rhodamine 6G Dye in the Presence of Nanoparticles «Plasmon Core – Semiconductor Shell»*
Dmitriy A. Afanasyev

P27: *Enhancement of PL from Near-Infrared Emitters Deposited onto a Thin Layer of Semiconductor Plasmonic Nanocrystals*
Aleksandr P. Litvin

P28: *Influence of Concentration and pH of a Solution of Fructose on the Spectral-Luminescent Characteristics of Carbon Nanoparticles*
Ivan A. Yurlov

P29: *Reference Free Low-Coherence Interferometry of Colloidal Suspensions*
Ekaterina V. Ushakova

P30: *Near Infrared LED Based on PbS Nanocrystals*
Dmitry A. Onishchuk

P31: *Circular Dichroism Study of Colloidal Semiconductor Nanoscrolls*
Nikita V. Tepliakov

P32: *Speckle Correlometry Diagnostic of Multiphase Disperse System for Tissue Engineering Applications*
Elena A. Isaeva

P33: *Photoelectric Properties of CdSe Nanoplatelets /Graphene Multilayered Nanoplatform*
Pavel O. Ilin

P34: *Porous Superstructures Based on Alloyed Quantum Dots*
Evgeniia A. Stepanidenko

P35: *Surface-Enhanced Raman Spectroscopy on a Nanoporous Silicate Substrate*
Elena Kriukova

P36: *The Nonlinear Behaviour of the Complex Dielectric Function of Colloidal Suspensions of SiOx Nanoparticles*
Sergey S. Volchkov

P37: *Luminescent Microthermometry Using Semiconductor Nanoplatelets*
Daniil Gozhalskiy

P38: *Factors Influencing the Stability of Langmuir Films of Colloidal Quantum Dots*
Sergey A. Savin

P39: *Photoinduced Change of Properties of Hybrid Structures Based on Core/Shell Quantum Dots and Azo-Dye Molecules*
Kirill I. Annas

P40: *Investigation of Resonance Properties of Disperse Systems Based on Silicides, Nitrides and Silicon Using One-Oscillator Models of Lorentz and Drude*
Sergey S. Volchkov

P41: *Temperature Dependent NIR Photoluminescence of PbS Quantum Dot Monolayers*
Ivan D. Skurlov

P42: *Luminol Chemiluminescence Enhancement in the Presence of Colloidal Plasmonic Nanoparticles*
Daler R. Dadadzhanov

P43: *Nanoporous Silicate Matrices in Biomedical Research*
Azat O. Ismagilov

P44: *Photoinduced Processes in QDs/TiO_2 NPs Multilayered Structures*
Ekaterina P. Kolesova

P45: *Photoactivation of QDs/Graphene Nanostructures*
Ivan A. Reznik

P46: *Chemical Synthesis of Silver Nanorods for Near IR Applications*
Yuliya A. Razumova

P47: *PbS Quantum Dot NIR Emission Enhanced by Semiconductor Plasmonic Nanocrystals*
Anton A. Babaev