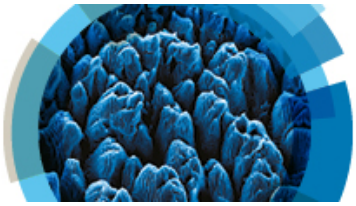
Luminescent silicon nanostructures

Faraday Discussion



12–14 February 2020
York, UK

Wednesday 12 February

11:00	Registration, Tea and Coffee	
12:00	Lunch	
12:45	**Welcome and Introductions** Paola Ceroni, *Chair of Scientific Committee*	
12:55	**Outline of Discussion Format** Emma Lockyer and Ellis Wilde *Royal Society of Chemistry Publishing Editors*	
13:00	**Introductory Lecture (Session Chair: Michael Sailor)** Leigh Canham *University of Birmingham, UK*	
	Session 1: Synthesis and functionalisation of silicon nanostructures (Session Chair: Jonathan Veinot)	
14:00	**Fast room-temperature functionalization of silicon nanoparticles using alkyl silanols** Alyssa F. J. van den Boom, Sidharam P. Pujari, Fatma Bannani, Hafedh Driss, and Han Zuilhof *Wageningen University, The Netherlands*	**Paper 28893**
14:05	**Photophysical properties of ball milled silicon nanostructures** Ankit Goyal, Menno Demmenie, Chia-Ching Huang, Peter Schall and Katerina Dohnalova Newell *University of Amsterdam, The Netherlands*	**Paper 28845**
14:10	**Amine functionalised silicon nanocrystals with bright red and long-lived emission** Giacomo Morselli, Francesco Romano and Paola Ceroni *University of Bologna, Italy*	**Paper 28891**
14:15	Discussion	
15:30	Afternoon tea	
16:00	**Dual-emission fluorescent silicon nanoparticle-based nanothermometer for ratiometric detection of intracellular temperature in living cells** Jinhua Wang, Airui Jiang, Jingyang Wang, Bin Song and Yao He *Soochow University, China*	**Paper 28892**
16:05	**The shell matters: one step synthesis of core–shell silicon nanoparticles with room temperature ultranarrow emission linewidth** Anna Fucikova, Ilya Sychugov and Jan Linnros *Charles University, Czech Republic*	**Paper 28820**
16:10	**Critical assessment of wet-chemical oxidation synthesis of silicon quantum dots** Jonathan L. Wilbrink, Chia-Ching Huang, Katerina Dohnalova and Jos M. J. Paulusse *University of Twente, The Netherlands*	**Paper 28909**
16:15	Discussion	
17:30	Lightning poster presentations (by invitation of the scientific committee)	
18:00	Poster Session and Wine Reception	

Thursday 13 February

	Session 2: Optical and electronic properties: from theory to experiments (Session Chair: Katerina Dohnalova Newell)	
09:00	**The influence of hydrofluoric acid etching processes on the photocatalytic hydrogen evolution reaction using mesoporous silicon nanoparticles** Sarah A. Martell, Ulrike Werner-Zwanziger and Mita Dasog *Dalhousie University, Canada*	**Paper 28910**
09:05	**Low temperature radical initiated hydrosilylation of silicon quantum dots** Timothy T. Koh, Tingting Huang, Joseph Schwan, Pan Xia, Sean T. Roberts, Lorenzo Mangolini and Ming L. Tang *University of California, Riverside, USA*	**Paper 28895**
09:10	**Modulating donor-acceptor transition energies in phosphorus-boron co-doped silicon nanocrystals via X- and L-type ligands** Gregory F. Pach, Gerard M. Carroll, Hanyu Zhang and Nathan R. Neale *National Renewable Energy Laboratory, USA*	**Paper 28818**
09:15	Discussion	
10:30	Morning Tea	
11:00	***Ab initio* studies of the optoelectronic structure of undoped and doped silicon nanocrystals and nanowires: the role of size, passivation, symmetry and phase** Stefano Ossicini, Ivan Marri, Michele Amato, Maurizia Palummo, Enric Canadell and Riccardo Rurali *University of Modena and Reggio Emilia, Italy*	**Paper 28838**
11:05	**The red and blue luminescence in silicon nanocrystals with an oxidized, nitrogen-containing shell** Pavel Galář, Tomáš Popelář, Josef Khun, Irena Matulková, Ivan Němec, Kateřina Dohnalova Newell, Alena Michalcová, Vladimír Scholtz and Kateřina Kůsová *Institute of Physics of the Czech Academy of Sciences, Czech Republic*	**Paper 28957**
11:10	**Tight-binding calculations of the optical properties of Si nanocrystals in a SiO2 matrix** Mikhail O. Nestoklon, Ivan D. Avdeev, Alexey V. Belolipetskiy, Ilya Sychugov, Federico Pevere, Jan Linnros and Irina N. Yassievich *Ioffe Institure, Russian Federation*	**Paper 28995**
11:15	**Power-dependent photoluminescence decay kinetics of silicon nanocrystals under continuous and pulsed excitation** Michael Greben and Jan Valenta *Charles University, Czech Republic*	**Paper 28807**
11:20	Discussion	
13:00	Lunch	
	Session 3: Silicon nanostructures for sensing and bioimaging (Session Chair: Leigh Canham)	
14:00	**Luminescent silicon nanoparticles for distinctive tracking of cellular targeting and trafficking** Gi-Heon Kim, Goun Lee, Myoung-Hee Kang, Minjong Kim, Yusung Jin, Sungjun Beck, Jihyun Cheon, Joonyoung Sung and Jinmyoung Joo *Ulsan National Institute of Science and Technology (UNIST), Republic of Korea*	**Paper** 28808
14:05	**The effects of drying technique and surface pre-treatment on the cytotoxicity and dissolution rate of luminescent porous silicon quantum dots in model fluids and**	**Paper 28961**

	living cells Maxim B. Gongalsky, Uliana A. Tsurikova, Catherine J. Storey, Yana V. Evstratova, Andrew A. Kudryavtsev, Leigh T. Canham and Liubov A. Osminkina *Lomonosov Moscow State University, Russian Federation*	
14:10	**Synthesis and characterization of isothiocyanate functionalized silicon nanoparticles and their uptake in cultured colonic cells** Yimin Chao, Ashley I. Marsh, Mehrnaz Behray, Feng Guan, Anders Engdahl, Yueyang Chao, Qi Wang, and Yongping Bao *University of East Anglia, UK*	**Paper 28727**
14:15	Discussion	
15:30	Afternoon tea	
16:00	**Shedding light on the aqueous synthesis of silicon nanoparticles by reduction of silanes with citrates** John L. Z. Ddungu, Simone Silvestrini, Alessandra Tassoni and Luisa De Cola *University of Strasbourg, France*	**Paper 28894**
16:05	**Ultrasmall silicon nanoparticles as a promising platform for multimodal imaging** Garima Singh, John L. Z. Ddungu, Nadia Licciardello, Ralf Bergmann, Luisa De Cola and Holger Stephan *Helmholtz-Zentrum Dresden-Rossendorf, Germany*	**Paper 28796**
16:10	Discussion	
17:00	Close of sessions	
18:30	Pre-Dinner Drinks	
19:00	Conference Dinner	

Friday 14 February

	Session 4: Silicon nanostructures for energy conversion and devices (Session Chair: Brian Korgel)	
09:00	**Bridging energy bands to the crystalline and amorphous states of Si QDs** Bruno Alessi, Manuel Macias-Montero, Chiranjeevi Maddi, Paul Maguire, Vladimir Svrcek and Davide Mariotti *Ulster University, Northern Ireland*	**Paper 28962**
09:05	**Silicon photosensitisation using molecular layers** Lefteris Danos, Nathan R. Halcovitch, Ben Wood, Henry Banks, Michael P. Coogan, Nicholas Alderman, Liping Fang, Branislav Dzurnak and Tom Markvart *Lancaster University, UK*	**Paper 28989**
09:10	**The next big thing for silicon nanostructures – CO_2 photocatalysis** Wei Sun, Xiaoliang Yan, Chenxi Qian, Paul N. Duchesne, Sai Govind Hari Kumar and Geoffrey A. Ozin *Zhejiang University, China; University of Toronto, Canada*	**Paper 28890**
09:15	Discussion	
10:30	Morning Tea	
11:00	**Concluding Remarks Lecture** (Session Chair: Paola Ceroni) Brian Korgel *The University of Texas at Austin, United States*	
11:45	**Acknowledgements**	

12:00	**Close of meeting**

Presenting authors are indicated in the programme by an underline. The affiliation is for the presenting author. Please note that this is a draft programme and timings may change.