

Curriculum Vitae

Askhat N. Jumabekov
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PERSONAL INFORMATION

Name: Askhat N. Jumabekov, Dr. rer. nat. (PhD)
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EMPLOYMENT HISTORY

- Aug. 2018 - present** **Nazarbayev University (NU)**
Assistant Professor | Department of Physics | School of Science and Technology
| NU | Astana, Kazakhstan
- May 2015 – Apr. 2018** **Commonwealth Scientific and Industrial Research Organisation (CSIRO)**
Postdoctoral Fellow | CSIRO Manufacturing | Clayton, Australia
- Feb. 2015 – Apr. 2015** **Ludwig Maximilian University of Munich (LMU)**
Postdoctoral Fellow | Department of Physical Chemistry | Faculty of Chemistry
and Pharmacy | LMU | Munich, Germany
- Sep. 2005 – Mar. 2008** **Institute of Experimental and Theoretical Physics (IETP)**
Junior Research Assistant | IETP | Al Farabi Kazakh National University |
Almaty, Kazakhstan

EDUCATION

- Oct. 2010 – Jan. 2015** **Ludwig Maximilian University of Munich (LMU)**
Doctor of Natural Sciences (Dr. rer. nat.) | Physical Chemistry | Faculty of
Chemistry and Pharmacy | LMU | Munich, Germany
Thesis: Lead Sulfide Quantum Dot-Based Nanostructured Solar Cells | 2014 |
Munich, Germany
- Oct. 2009 – Sep. 2010** **Imperial College London**
Master of Research (MRes) | Nanomaterials | Department of Chemistry |
Imperial College London | London, United Kingdom
Thesis: Metal-Organic Frameworks with Unusual Magnetic Properties | 2010 |
London, United Kingdom
- Apr. 2009 – Sep. 2009** **University College London (UCL)**
Pre-Sessional Courses | UCL | London, United Kingdom
- Sep. 2003 – June 2008** **Al Farabi Kazakh National University (KazNU)**

Engineer-Specialist (BSc) | Radiophysics and Electronics | Department of Physics | KazNU | Almaty, Kazakhstan
Thesis: Investigation of Optical Characteristics of Hydrogenated Amorphous Silicon Thin Films | 2008 | Almaty, Kazakhstan

Sep. 1991 – June 2003

School (Primary, Secondary & High Schools)
Diploma of High School | Kazakhstan

RESEARCH EXPERIENCE

May 2015 – Apr. 2018

Melbourne Centre for Nanofabrication (MCN)
MCN | Clayton, Australia
Nanofabrication and Microfabrication of Novel Back-Contact Electrodes

Jan. 2006 – Feb. 2006

Joint Institute for High Temperatures of the Russian Academy of Science (JIHT RAS)
JIHT RAS | Moscow, Russia
Electric Probe Diagnostics of Dusty Plasma Parameters

SCHOLARSHIPS

Oct. 2010 – Sep. 2013

Scholarship of the German Academic Exchange Service (DAAD) for Postgraduate Studies (Doctor's Degree)

Apr. 2009 – Sep. 2010

Scholarship of Ministry of Education of Kazakhstan for Postgraduate Studies (Master's Degree)

Sep. 2003 – June 2008

Scholarship of Ministry of Education of Kazakhstan for Undergraduate Studies (Bachelor's Degree)

AWARDS & PRIZES

Mar. 2013

Best Poster Award – Nanosystems Initiative Munich (NIM) Winter School 2013 | Tyrol, Austria

INVITED SEMINAR TALKS

May 2017

Institute for Nanospectroscopy | Helmholtz-Zentrum Berlin | Berlin | Germany

SUPERVISING & MENTORING ACTIVITIES

May 2015 – Apr. 2018

Mentored five PhD Candidates, three from Monash University (Melbourne, Australia), one from Georgia Tech (Atlanta, USA) and one from LMU (Munich, Germany)

Oct. 2010 – Jan. 2015

Supervised Three Bachelor and Two Master Students from LMU (Munich, Germany)

TEACHING ACTIVITIES

Oct. 2010 – Jan. 2015

Physical Chemistry Laboratory Courses and Infrared Spectroscopy Laboratory Courses | Department of Physical Chemistry | LMU | Munich, Germany

LANGUAGES

Kazakh (native); **Russian** (fluent); **English** (fluent); **German** (limited working proficiency).

SCIENTIFIC CONFERENCES

May 2017	International Conference on Hybrid and Organic Photovoltaics (HOPV 17) Lausanne, Switzerland (Oral Presentation)
Nov. 2016	Asia-Pacific Solar Research Conference (APSRC 2016) Canberra, Australia (Oral Presentation)
May 2014	International Conference on Hybrid and Organic Photovoltaics (HOPV 14) Lausanne, Switzerland (Poster Presentation)
Sep. 2013	Centre for NanoScience (CeNS) Workshop 2013 Venice, Italy (Poster Presentation)
July 2013	Nanosystems for Solar Energy Conversion Munich, Germany (Poster Presentation)
March 2013	Nanosystems Initiative Munich (NIM) Winter School 2013 Tirol, Austria (Poster Presentation)
May 2012	International Conference on Hybrid and Organic Photovoltaics (HOPV 12) Uppsala, Sweden (Poster Presentation)
June 2010	TechConnect World 2010: Nanotech, Clean Technology, Microtech, Bio Nanotech Los Angeles, USA (Oral Presentation)
May 2008	Fifth International Conference on the Physics of Dusty Plasmas (ICPDP5) Ponta Delgada, Portugal (Poster Presentation)
Aug. 2007	2nd International Conference on the Physics of Dusty and Burning Plasmas Odessa, Ukraine (Poster Presentation)
Sep. 2006	Fifth International Conference on Plasma Physics and Plasma Technology (PPPT-5) Minsk, Belarus (Oral Presentation)

PUBLICATIONS

- D. M. Bacal, N. N. Lal, **A. N. Jumabekov**, Q. Hou, A. S. R. Chesman, U. Bach. A Solution Processed Antireflective Coating for Back-Contact Perovskite Solar Cells. (*Submitted, ACS Applied Materials & Interfaces*); **Impact Factor (IF) 7.5**
- G. DeLuca, **A. N. Jumabekov**, Y. Hu, A. N. Simonov, J. Lu, B. Tan, G. W. P. Adhyaksa, E. C. Garnett, E. Reichmanisa, A. S. R. Chesman, U. Bach, . Transparent Quasi-Interdigitated Electrodes for Semi-Transparent Perovskite Back-Contact Solar Cells. (*Submitted, ACS Applied Energy Materials*)
- Q. Hou, D. M. Bacal, **A. N. Jumabekov**, W. Li, Z. Wang, X. Lin, S. H. Ng, B. Tan, Q. Bao, A. S. R. Chesman, Y.-B. Cheng, U. Bach. Back-Contact Perovskite Solar Cells with Honeycomb-Like Charge Collecting Electrodes. *Nano Energy* **50**, 710-716 (2018). <https://doi.org/10.1016/j.nanoen.2018.06.006>; **IF 12.9**
- **A. N. Jumabekov**, J. A. Lloyd, D. M. Bacal, U. Bach, A. S. R. Chesman. Fabrication of Back-Contact Electrodes Using Modified Natural Lithography. *ACS Applied Energy Materials* **1**, 1077-1082 (2018). **DOI:** 10.1021/acsaem.7b00213; (**Cover Image:** <https://pubs.acs.org/toc/aaemcq/1/3>)

- X. Lin, **A. N. Jumabekov**,* N. N. Lal, A. R. Pascoe, D. E. Gómez, N. W. Duffy, A. S. R. Chesman, K. Sears, M. Fournier, Y. Zhang, Q. Bao, Y. Cheng, L. Spiccia, U. Bach. Dipole-Field-Assisted Charge Extraction in Metal-Perovskite-Metal Back-Contact Solar Cells. *Nature Communications* **8**, 613 (2017). DOI: 10.1038/s41467-017-00588-3; **IF 13.1**
- D. D. Medina, M. L. Petrus, **A. N. Jumabekov**,* J. T. Margraf, S. Weinberger, J. M. Rotter, T. Clark, T. Bein. Directional Charge-Carrier Transport in Oriented Benzodithiophene Covalent Organic Framework Thin Films. *ACS Nano* **11**, 2706-2713 (2017). DOI: 10.1021/acsnano.6b07692; **IF 13.9**
- **A. N. Jumabekov**,* E. Della Gaspera, Z.-Q. Xu, A. S. R. Chesman, J. van Embden, S. A. Bonke, Q. Bao, D. Vaka, U. Bach. Back-Contacted Hybrid Organic-Inorganic Perovskite Solar Cells. *Journal of Materials Chemistry C* **4**, 3125-3130 (2016). DOI: 10.1039/C6TC00681G; **IF 5.2**
- **A. N. Jumabekov**, N. Cordes, T. D. Siegler, P. Docampo, A. Ivanova, K. Fominykh, D. D. Medina, L. M. Peter, T. Bein. Passivation of PbS Quantum Dot Surface with L-Glutathione in Solid-State Quantum-Dot-Sensitized Solar Cells. *ACS Applied Materials & Interfaces* **8**, 4600-4607 (2016). DOI: 10.1021/acsaami.5b10953; **IF 7.5**
- **A. N. Jumabekov**, T. D. Siegler, N. Cordes, D. D. Medina, D. Böhm, P. Garbus, S. Meroni, L. M. Peter, T. Bein. Comparison of Solid-State Quantum-Dot-Sensitized Solar Cells with *ex Situ* and *in Situ* Grown PbS Quantum Dots. *The Journal of Physical Chemistry C* **118**, 25853-25862 (2014). DOI: 10.1021/jp5051904; **IF 4.5**
- **A. N. Jumabekov**, F. Deschler, D. Böhm, L. M. Peter, J. Feldmann, T. Bein. Quantum-Dot-Sensitized Solar Cells with Water-Soluble and Air-Stable PbS Quantum Dots. *The Journal of Physical Chemistry C* **118**, 5142-5149 (2014). DOI: 10.1021/jp4110773; **IF 4.5**
- T. S. Ramazanov, **A. N. Jumabekov**,* S. A. Orazbayev, M. K. Dosbolayev, M. N. Jumagulov. Optical and Kinetic Properties of the Dusty Plasma in Radiofrequency Discharge. *Physics of Plasmas* **19**, 023706 (2012). <https://doi.org/10.1063/1.3690103>; **IF 2.1**
- R. P. Davies, **A. Jumabekov**,* R. J. Less, P. D. Lickiss, K. Robertson, K. G. Sandeman, A. J. P. White. The Potential of Silicon-Based Ligands in Metal-Organic Frameworks. *NSTI-Nanotech 2010* **2**, 103-106 (2010). ISBN 978-1-4398-3402-2
- T. S. Ramazanov, S. K. Kodanova, O. F. Petrov, S. N. Antipov, K. N. Dzhumagulova, M. K. Dosbolayev, **A. N. Jumabekov**. An Investigation of Dust Particles Orbiting a Langmuir Probe. *Journal of Physics A: Mathematical and Theoretical* **42**, 214026 (2009). DOI: 10.1088/1751-8113/42/21/214026; **IF 1.8**
- G. I. Sukhinin, A. V. Fedoseev, T. S. Ramazanov, R. Z. Amangaliyeva, M. K. Dosbolayev, **A. N. Jumabekov**. Non-Local Effects in a Stratified Glow Discharge with Dust Particles. *Journal of Physics D: Applied Physics* **41**, 245207 (2008). DOI: 10.1088/0022-3727/41/24/245207; **IF 2.5**
- S. A. Moiorov, T. S. Ramazanov, K. N. Dzhumagulova, M. K. Dosbolayev, **A. N. Jumabekov**. Investigation of Plasma-Dust Structures in He-Ar Gas Mixture. *Physics of Plasmas* **15**, 093701 (2008). DOI: 10.1063/1.2977763; **IF 2.1**
- T. S. Ramazanov, K. N. Dzhumagulova, **A. N. Jumabekov**, and M. K. Dosbolayev. Structural Properties of Dusty Plasma in Direct Current and Radio Frequency Gas Discharges. *Physics of Plasmas* **15**, 053704 (2008). DOI: 10.1063/1.2918336; **IF 2.1**

PUBLICATIONS WITH JOURNAL COVER IMAGES

- **A. N. Jumabekov, J. A. Lloyd, D. M. Bacal, U. Bach, A. S. R. Chesman.** Fabrication of Back-Contact Electrodes Using Modified Natural Lithography. *ACS Applied Energy Materials* **1**, 1077-1082 (2018).
DOI: 10.1021/acsaem.7b00213

(<https://pubs.acs.org/toc/aaemcq/1/3>)

