

Contact

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Top Skills

Engineering
Scientific Research

Dr. Konstantin Kisly

Executive, Research Scientist, Ph.D.
Palo Alto, California, United States

Summary

- Co-founder of Alef Aeronautics - next breakthrough in transportation
- Proven expertise in engineering, material science, prototyping, software, simulations, aerodynamics
- Scaling Engineering Teams, Technical Decision-Making Under Uncertainty, Cross-Disciplinary Coordination, Innovation in Emerging Technologies, Startup Execution & Product Delivery in scientific and engineering R&D
- Proven track record of accomplishment in scientific research: 9 publications in peer-reviewed journals
- Co-founder of Nova Ukraine - a nonprofit humanitarian organization

Core Skills

Aerospace & Mechanical

- Aircraft Structures & Integrated Vehicle Design, Propulsion Systems Integration, Flight Dynamics & Control Concepts, Mechanical Systems Engineering

Electrical Electronics, Energy systems

- Power Electronics & Distribution, High-Voltage Power Systems (100–200V class), Battery Architecture & Pack Design, Thermal Management (Passive & Active), High C-rate Performance Optimization

Software and Embedded

- Embedded Firmware Systems, Flight Control Systems, CAN / UAVCAN Communication, System Integration & Debugging

Simulation & Analysis

- CFD, Structural and Multiphysics Simulation, System-Level Modeling & Performance Optimization

Product & Execution

- Multidisciplinary Engineering Leadership, Prototype Development & Validation, R&D Strategy & Execution, Engineering Process Development, Technical Roadmapping, Rapid Iteration in Deep Tech Environments, System Architecture & Vehicle Integration

Experience

Alef Aeronautics Inc

Co-Founder, VP, Director of Engineering

March 2016 - Present (10 years 1 month), San Mateo, US

- Led multidisciplinary engineering organization developing a roadable eVTOL “flying car” platform from concept through prototype and testing
- Directed R&D across materials science, electrical/electronics, mechanical systems, embedded firmware, and vehicle software
- Oversaw system architecture and high-level vehicle design, including aerostructures, propulsion, energy systems, and control systems
- Managed cross-functional teams (aero, structures, battery, embedded, simulation) to deliver integrated vehicle solutions
- Led advanced simulation efforts including CFD, structural analysis, and system-level modeling for performance optimization
- Owned battery system strategy (high-voltage architecture, thermal management, power delivery for vertical lift vs cruise modes)
- Supervised development of flight control systems and embedded firmware integration
- Directed prototype build, ground validation, and flight/drive testing campaigns
- Established engineering processes, technical roadmaps, and execution strategy aligned with company milestones

Prism Skylabs Inc

R&D / Hardware & Software Validation Engineer, San Francisco, US

April 2014 - March 2017 (3 years)

- Led evaluation and validation of hardware and software systems for retail video surveillance platforms
- Conducted root cause analysis and drove improvements in system stability and functionality
- Evaluated embedded firmware, iOS applications, APIs, and edge client software for performance, stability, and system integration
- Analyzed analytics data, performed statistical evaluation, and identified performance patterns and system dependencies
- Collaborated operations teams to investigate common issues and incorporate them into test scenarios

Intel Labs

Research Scientist

January 2013 - January 2014 (1 year 1 month), Santa Clara, US

- Contributed to the National Institutes of Health \$1K Genome initiative by advancing materials and chemistry for next-generation on-chip DNA sequencing platforms
- Led development and optimization of surface chemistries for functionalizing silica nanogap chips and bead-based systems, enabling controlled biomolecular interactions.
- Designed and synthesized functional nucleotide analogs with reversible terminators and engineered signaling moieties (UV, redox-active tags) for high-fidelity detection
- Investigated advanced molecular systems including phosphorothioate chemistries, cleavable linkers, and tunable dyes with targeted optical properties
- Established end-to-end materials workflows: synthesis, purification, characterization, and quality control of small molecules and oligonucleotide derivatives.
- Drove materials performance improvements through structure–function analysis, signal-to-noise optimization, and integration with electrochemical and optical detection system
- Collaborated cross-functionally with bioengineering and device teams to translate novel materials into scalable sequencing architectures

Nanosyn Inc

Research Scientist

October 2007 - March 2012 (4 years 6 months), Menlo Park, US

- Responsible for the independent design, synthesis purification and characterization of various small organic molecules for clients in the biopharmaceutical industry
- Designed and synthesized HDAC-inhibitors, PEGylated opioid-based prodrug candidates
- Developed and prepared amino acid derivatives, oligopeptides
- Responsible for scale-up process optimization and implementation for the synthesis of a lead compound

Chemical Block Ltd.

Research Scientist

February 2004 - April 2007 (3 years 3 months)

- Performed multi-step synthesis of scaffolds, building blocks and heterocyclic compound libraries for biological activity screening.
- Performed scale-up custom synthesis up to 1 kg in 50 L reactor.
- Natural products isolation and modification (levoglucosenone, building-blocks from dill, parsley).
- Participated in design and synthesis libraries of potential anti-mitotic 1,2,4-oxadiazoles for binding with tubulin of Sea Urchins eggs, served as a model for anticancer activity screening.

Education

N. D. Zelinsky Institute of Organic Chemistry Academy of Sciences
Ph.D., Engineering Chemistry · (2003 - 2007)

Mendeleyev University of Chemical Technology
MS, chemistry · (2001 - 2003)

Mendeleyev University of Chemical Technology
Bachelor of Science (BS), chemistry · (1997 - 2001)

PUBLICATIONS

A. V. Samet, K. A. Kislyi, V. N. Marshalkin, Y. A. Strelenko, M. M. Raihstat, Y. V. Nelyubina, and V. V. Semenov. A straightforward preparation of benzo[*f*]naphtho[*b*][1,4]oxazepines from TNT // *Tetrahedron*, 64, 1163-1167

K. A. Kislyi, A. V. Samet, Y. A. Strelenko, and V. V. Semenov. Synthetic Utilization of Polynitroaromatic Compounds. 6. Remarkable Regioselectivity in Nucleophilic Displacement of Aromatic Nitro Groups with Amines // *J. Org. Chem.*, 2008, 73, 2285-2291.

A. V. Samet, K. A. Kislyi, V. N. Marshalkin, Y. A. Strelenko, Yu. V. Nelyubina, K.A. Lyssenko, and V. V. Semenov. Synthesis and structure of azido- and amino-substituted dibenzoxazepinones // *J. Org. Chem.*, 56, 2089-2093.

K. A. Kislyi, A. V. Samet, and V. V. Semenov. 4,6-Dinitroanthranilic acid and benzo-fused six-membered heterocycles on its basis // *Russian J. Org. Chem.*, 2006, 42, 292-293.

A. V. Samet, K. A. Kislyi, V. N. Marshalkin and V. V. Semenov. Synthesis of dibenzo[*b,f*][1,4]oxazepin-11(10H)-ones from 2-nitrobenzoic acids // *Russian Chem. Bull.*, 2006, 55, 549-553.

A. V. Samet, V. N. Marshalkin, K. A. Kislyi, N. B. Chernysheva, Y. A. Strelenko, and V. V. Semenov. Synthetic Utilization of Polynitroaromatic Compounds. 3. Preparation of Substituted Dibenz[*b,f*][1,4]oxazepin-11(10H)-ones from 2,4,6-Trinitrobenzoic Acid via Nucleophilic Displacement of Nitro Groups // *J. Org. Chem.*, 70, 9371-9376.

K. A. Kislyi. Nitro-substituted benzo[*f*]nafto[*b*]-1,4-oxazepines: synthesis from trinitrotoluene and properties. // *A.N. Kost International Simpozium "Chemistry of heterocyclic compounds"*, 193.

Alex S. Kiselyov, Marina N. Semenova, Natalya B. Chernyshova, Andrei Leitao, Alexandr V. Samet, Konstantine A. Kislyi, Mikhail M. Raihstat, Tudor Oprea, Heiko Lemcke, Margareta Lanto, Dieter G. Weiss, Nazli N. Ikizalp, Sergei A. Kuznetsov, Victor V. Semenov. Novel derivatives of 1,3,4-oxadiazoles are potent mitostatic agents featuring strong microtubule depolymerizing activity in the sea urchin embryo and cell culture assays // *European Journal of Medicinal Chemistry*, 45, 1683-1697.

A. V. Samet, K. A. Kislyi, and V. V. Semenov. Preparation and properties of nitro substituted dibenzo[*b,f*]-1,4-oxazepinones // *International Simpozium "VIII scientific school of organic chemistry"*, 304.