

EPIC ROUNDTABLE AT OPTRO:
SMART OPTRONIC DETECTORS
FOR CHALLENGING TARGETS

Versailles, France
10 June, 14:00 – 16:00

In cooperation with

OPTRO₂₀₂₂



Association Aéronautique
et Astronautique de France

OPTRO 2022

10th International Symposium
on Optronics in Defence & Security

Versailles • France • 08-10 June 2022

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EPIC EPIC Roundtable at OPTRO: Smart Optronic Detectors for Challenging Targets

10 June 2022 – Paris, France

The EPIC B2B Roundtable on Smart Optronic Detectors for Challenging Targets will focus on the challenges for UV, VIS and IR detectors in present and future applications such as ghost imaging, hyper and multispectral system or 3D LIDARs. The event will also discuss their applicability in harsh environments for terrestrial, aerospace or subsea applications, such as for example, locations with unpredictable or inclement weather conditions, sand and dust storms or radioactive areas.

Agenda

- 14:00 – 14:10 Welcoming words**
Antonio Raspa, Senior Photonics Program Manager at EPIC – European Photonics Industry Consortium
- 14:10 – 14:30 KEYNOTE: Optronic Detector emerging technologies for new challenges in Defence applications**
Fabrizio Berizzi, European Defence Agency
- 14:30 – 14:50 KEYNOTE: Detector requirements for systems in challenging operating scenarios**
Antonio Porta, CTO Optronics & Space, Leonardo
- 14:50 – 15:20 EPIC members pitches:**
- 14:50 – 14:55 Stéphane Tisserand, CEO at Silios Technologies
 - 14:55 – 15:00 Steven D. Wagner, Senior Sales Manager at WZWOPTICAG
 - 15:00 – 15:05 Mathieu Carras, CEO at Mirsense
 - 15:05 – 15:10 Andrea Chiuri, Researcher at ENEA
 - 15:10 – 15:15 Arnaud Rigny, Business Development Director Custom Applications at CAILabs
 - 15:15 – 15:20 François Coursaget, General Manager at New Imaging Technologies
- 15:20 – 15:25 Closing remarks**
Antonio Raspa, Senior Photonics Program Manager at EPIC – European Photonics Industry Consortium
- 15:25 – 16:00 Networking time**

» CONTACTS

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Jeremy Picot-Clemente, Photonics Technology Manager, + 33 760 194 784

Participants

Name	Surname	Job Title	Company	Country
Andrea	Chiuri	Researcher	ENEA	Italy
Antonio	Porta	CTO	Leonardo	Italy
Arnaud	Rigny	Business Developer Director	Cailabs	France
Babu Dayal	Padullaparthi	Founder & CTO	Photonic Components DFM	Hong Kong
Branko	Petrov	Applications Specialist	Excelitas Technologies	Canada
Christian	Eisele	Senior Scientist	Fraunhofer IOSB	Germany
Denis	Boireau	Director Business Development	Excelitas	Canada
Fabrizio	Berizzi	Project Officer	European Defence Agency	Italy
François	Coursaget	General Manager	New Imaging Technologies	France
Gernot	Weber	Product Manager	SCHOTT	Germany
Hans	Tholl	Head of Competence Center	Diehl Defence	Germany
João	Brito	Optoelectronics Engineer	LiangDao	Germany
Krzysztof	Klos	CEO	Photin	Poland
Laurent	Demezot	Key Account Manager	Hamamatsu	France
Mathieu	Carras	CEO	mirSense	France
Patrick	Merken	CTO	Xenics	Belgium
Sélim	Krummenacker	Project Engineer	SCHOTT	Switzerland
Stéphane	Tisserand	General Manager	Silios Technologies	France
Steven	Wagner	Senior Sales Manager	WZW OPTIC	Switzerland
Thomas	Pickering	Product Management Leader	Ansys	USA
Vitalii	Stoliarchuk	Testing Engineer	Oles Honchar Dnipro National University	Ukraine



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Thomas Pickering (Manager Product Management) is an energetic and innovative leader with 15+ years of diverse experience in product management, project planning and management, engineering, and research environments. In 2012, Thomas received his Ph.D. in Physics at the Royal Holloway, University of London and MSc in Technical Physics at the Technische Universität Wien. He started his career at the Royal Holloway, University of London as Postdoctoral Research Associate, then served at Zemax and MathWorks as Senior Product Manager. In Jan 2022, Thomas joined Ansys on Manager Product Management position.



Cailabs was established in 2013 in Rennes and is a French deep-tech company which designs, manufactures and sells photonic solutions. By combining our state-of-the-art beam shaping technology (Multi-Plan Light Conversion or MPLC) with optimal engineering, we create innovative products that help solve some of today's major industrial and technological challenges for multiple applications, including: laser machining processes, aerospace, ground-based telecommunications, defense. www.cailabs.com



Arnaud Rigny (Business Developer Director) has more than 20 years of experience in the fields of photonics and semiconductor. After a 10-year experience in research and development at Corning then in product line management at Alcatel Optronics, he joined Soitec as a manager of research and development projects before taking on commercial responsibilities in 2007. He graduated from the Télécom ParisTech engineering school and has a doctorate in optoelectronics from Télécom ParisTech.



Diehl Defence delivers high-tech equipment for defence. The company is one of the global technology leaders in the development and production of guided missiles and ammunition for armies, air forces and navies. Moreover, Diehl Defence also offers advanced system solutions for ground-based air defence. Innovative solutions in the fields of reconnaissance, monitoring, training and protection round off the product range. www.diehl-defence.com



Hans Tholl (Head of the Centre of Competence for Electro-Optical and Electro-Mechanical Systems) is Head of the Centre of Competence for Electro-Optical and Electro-Mechanical Systems within the R&D department of Diehl Defence. He also holds the position as Optronics Expert for the Diehl Group. In these functions, he is responsible for managing a department of physicists and engineers, developing subsystems for missile guidance and navigation, performing feasibility studies and technology maturation. Hans received a Diploma in theoretical elementary particle physics in 1985 and a PhD in Optical Physics in 1990, both from the Technical University of Aachen, Germany. He is Senior Member of SPIE, a member of OSA, DGaO, EOS, AAPT, and of the Editorial Board of the journal *Advanced Optical Technologies*.



EPIC is the European industry association that promotes the sustainable development of organisations working in the field of photonics. Our members encompass the entire value chain from LED lighting, PV solar energy, Silicon photonics, Optical components, Lasers, Sensors, Displays, Projectors, Optical fibres, and other photonics-related technologies. We foster a vibrant photonics ecosystem by maintaining a strong network and acting as a catalyst and facilitator for technological and commercial advancement. EPIC works closely with related industries, universities, and public authorities to build a more competitive photonics industrial sector, capable of both economic and technological growth in a highly competitive world-wide marketplace.
www.epic-assoc.com



Antonio Raspa (Senior Photonics Program Manager) has more than 35 years of experience with solid-state laser design, spectroscopic systems, photonics components and fiber optics. He holds a MSc degree in Electrical Engineering with a specialization in Quantum Electronics. Before joining EPIC, he worked at Quanta System as R&D manager for the development of solid-state laser sources and custom photonics systems for industrial and scientific applications. During this period, he participated, as Ozone LiDAR specialist, in the Italian research program in Antarctica. He has also worked at Trumpf and Rofin-Sinar as a Product Manager for industrial laser products and processes.



Carlos Lee (Director General) brings with him a background in microelectronics which was acquired through several management positions held at the international association SEMI. He has been responsible in Europe for the SEMI International Standards program, managed technical and executive programs, and together with the advisory board advocated for a more competitive semiconductor and photovoltaic manufacturing industry. Carlos has a BBA in Finance and an MBA in Leadership & Change Management from United Business Institutes. He lives with his spouse and three children in Belgium.



Jeremy Picot-Clemente (Photonics Technologies Program Manager) is a physicist specializing in optics. After a PhD in Physics/optics and an MBA in Dijon (France), he decided to explore the photonics industry for several years by managing photonics systems integration for various applications and in different companies. At EPIC, Jeremy oversees the development of the optics and micro-optics fields, and all related technologies and applications. He has a strong interest in new technologies involving photonics, such as AR/VR, LiDAR, 3D sensing, and imaging devices.

ENEA is the National Agency for New Technologies, Energy and Sustainable Economic Development, a public body aimed at research, technological innovation and the provision of advanced services to enterprises, public administration and citizens in the sectors of energy, the environment and sustainable economic development. ENEA has highly qualified personnel, advanced laboratories, experimental facilities and excellent instruments for the realisation of projects, studies, tests, assessments, analyses and training services, with particular reference to product and process innovation and the valorisation of results to contribute to the development and competitiveness of the national economic system. Since its foundation in the 1960s, its strengths have been applied research, technology transfer and technical-scientific support to companies, associations, territories, central and local administrations: for this reason - unlike other research institutions - the Agency depends on the Ministry of Economic Development. Its focus sectors are energy technologies (renewable sources, energy storage, smart grids), for which the Agency is also the coordinator of the Energy National Technology Cluster, nuclear fusion and nuclear safety (the Agency is the reference national research coordinator), energy efficiency (with the National Agency for Energy Efficiency), technologies for cultural heritage, seismic protection, food safety, pollution, life sciences, strategic raw materials, climate change. www.enea.it



Andrea Chiuri (Researcher) received MSc and PhD in Physics at Sapienza University of Rome. He has theoretical and experimental expertise regarding Quantum Information, Computation and Quantum Optics. Andrea has specific skills in the field of optics, lasers and interferometry. For seven years he was employed at the Forensic Department of Carabinieri (Italian Law Enforcement Agency) in Fingerprint and Chemistry Units. He has scientific expertise in spectroscopy and analytical chemistry. He joined ENEA in 2019, and he is the coordinator of the HADES Project (NATO SPS) with a clear focus on the applications of Quantum Technologies.



The European Defence Agency was established in 2004 with the aim at support the Council and the Member States in their effort to improve the Union's defence capabilities in the field of crisis management and to sustain the Common Security and Defence Policy (CSDP). In May 2017, after EDA's LONG-TERM REVIEW, Defence ministers agreed to reinforce the Agency's role and mission:

- as the main instrument for intergovernmental capability planning & prioritisation in Europe
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- as Member States' central interface & gateway towards EU institutions & stakeholder

www.eda.europa.eu



Fabrizio Berizzi (Project Officer in Optronics CapTech) is a Full Professor at University Pisa. Currently, Project Officer in Optronics CapTech in EDA. ITA NATO SET and EDA radar CapTech representative on 2010-2018. He is an expert on radar and optronics, leader of 10 Defense projects, he has 4 books and more than 100 journal publications.

Excelitas Technologies is a global technology leader focused on delivering innovative, high-performance, market-driven photonic solutions to meet the lighting, detection and optical technology needs of global customers. From defense and aerospace to biomedical technology, research laboratory, consumer products, Semiconductor, industry sensing & imaging, Excelitas Technologies is committed to enabling our customer's success in their end-markets. Excelitas Technologies now has approximately 8000 employees, serving customers across the world. www.excelitas.com



Branko Petrov (Applications Specialist) joined Excelitas in 2018 as a reliability scientist. He worked as the product responsible for the emitter line before taking the position of Applications Specialist for products falling under the High-Performance Sensors and the Defense & Aerospace lines. He received his Ph.D. degree in physics from the Université de Sherbrooke. His work was based on the optimization of emission and detection of novel photoconductive compounds in the THz domain as well as means to combine and package THz antennas with the telecom technologies.



Denis Boireau (Director, Business Development) joined Excelitas in 1984, and had several positions since then in Business development. Denis is now in charge of Photodiodes, Laser Diodes, Atomic Clocks and various product lines for Defense & Aerospace applications, supporting business out of North America.

The Fraunhofer Institute for Optronics, System Technologies and Image Exploitation is Europe's largest research institute in the field of image acquisition, processing and analysis. We turn state-of-the-art scientific insights into technological innovations. What makes us special is that we combine core knowledge in optronics, system technologies, and image exploitation with application know-how gained through an extensive dialogue with our partners. We ensure the success of our clients and the progress of applied research in general by offering services, components and complete systems based upon our broad spectrum of technologies, methods and expertise. www.iosb.fraunhofer.de



Christian Eisele (Senior Scientist) is senior scientist in the signatorics department at Fraunhofer IOSB. His research interests are currently the development and assessment of advanced sensor systems for threat warning from the solar blind UV (< 280 nm) part of the spectrum up to the thermal IR, as well as atmospheric optics (turbulence, etc.) and the development of EO-TDAs (tactical decision aids).

Hamamatsu Photonics, driven by Japanese excellence and market-leading optoelectronic technology, helps our customers visualize, measure, and analyze crucial information. Our mission is to establish photonics as a fundamental source of innovation for all customers. On the forefront of the development of new and existing applications, our advanced and highly sophisticated product range includes sources, detectors and imaging products designed to cover the entire optical spectrum. Present since 1953 across a vast array of industries, such as scientific research, medical, and industrial processes, we leverage added-value services and custom-made photonics solutions to meet our customer's ambitions without compromise. With headquarters in Hamamatsu, Japan, where our manufacturing and research facilities are located, we enjoy a global presence with business offices and associated companies throughout Asia, Europe and North America, and over 5,000 staff worldwide. www.hamamatsu.com



Laurent Demez (Key Account Manager) holds an engineering diploma at Ecole Nationale Supérieure des Sciences Appliquées et de Technologie (E.N.S.S.A.T.) with an opto-electronics speciality. He has a 25 year-experience as Sales and he worked for IDIL Fibres Optiques, Highwave Optical Technologies, before joining again Hamamatsu Photonics France as Key Account in 2008. He is mainly in charge of business development in relation with Tiers1&2, OEMs for France, Switzerland, Belgium and Spain/Portugal.



Leonardo develops multi-domain capabilities in the Aerospace, Defence and Security sector. The company plays a prominent role in major international strategic programmes and is a trusted technological partner of governments, defence agencies, institutions and enterprises. Innovation, continuous research, digital manufacturing and sustainability are the cornerstones of Leonardo's business worldwide. www.leonardo.com



Antonio Porta (CTO for the Optronics & Space Equipment Line of Business) received his Laurea degree in Electronic Engineering from the University of Pisa. He has been officer of the Italian Navy. He started designing digital systems for space. In 1999, he joined Galileo Avionica (which then changed into Selex and Leonardo) as electro-optical system engineer: he has been responsible for infrared research projects and for the development of the improved second generation and third generation infrared modules. In 2003, he won the Prix Ingénieur Général Chanson. In 2007, he was appointed Head of Imagers department and in 2016 - Head of Systems Engineering: under his supervision a new portfolio of EO Systems has been developed, including the 4 axis stabilized airborne gimbal for rotary and fixed wing. Since 2021, he is Chief Technical Officer for the Optronics and Space Line of Business Equipment in the Leonardo Electronics Division.



LiangDao is a leading technology provider of LIDAR system solutions, with core competencies in LIDAR system and multi-sensor fusion applications. The company is devoted to the field of autonomous driving and intelligent transportation, providing solutions including LIDAR perception algorithm development, testing and validation for AD, function iteration services driven by big data, as well as roadside sensing fusion.

LiangDao GmbH is located in Munich and has a R&D center in Berlin. The company has established in-depth cooperation with companies with core autonomous driving technologies including Great Wall Motor, Volkswagen Group (including its three brands VW, Audi and Porsche), Ibeo, Ouster, Innovusion and NVIDIA etc. www.liangdao.de



João Brito (Optoelectronics Engineer) received an MSc in Engineering Physics from University of Coimbra, which involved researching a prototyping a low-cost FMCW LIDAR. He is currently working at LiangDao and is interested in LIDAR development and exploring new and interesting opportunities in this space for the collaboration of software and hardware.



mirSense is a French manufacturer of quantum cascade lasers and gas spectrometers. Our clients are all over the world, from university labs to large industrial manufacturers, in diverse sectors like automotive, biogas, medical or defense. We manufacture high-power lasers delivering watt-level power in the mid-infrared (4, 4.6, 4.8 microns) and we also manufacture DFB lasers for spectroscopy applications in the [10-17] microns wavelength region. Our clients can purchase turnkey systems for lab use, OEM systems including laser + driving electronics or packaged QCL lasers and even chips on submount. www.mirsense.com



Mathieu Carras (CEO) is the acting CEO and main shareholder of mirSense since its founding in 2015. Prior to the founding, Mathieu headed for 10 years the mid-infrared team of French defense company Thales, where he supervised extensive R&D work on quantum cascade lasers and which led to the spin-off of the company. Today, Mathieu is an expert on quantum cascade laser-based systems, be it for spectroscopy, defense or other kind of applications. Initially, he graduated as an engineer from French Centrale Paris engineering school and did his Ph.D. in physics on the 'Electronic and electromagnetic optimization of infrared quantum detectors'.



New Imaging Technologies (NIT) is a leader in SWIR imaging solutions and HDR CMOS sensors, based on innovative pixel designs and disruptive process. NIT was founded in 2007 as a spin-off from Institut-Telecom Sud-Paris. NIT develops, manufactures and sells InGaAs sensors and cameras for short wave infrared band imaging (900nm – 1700nm) and High Dynamic Range CMOS sensors for high-end visible band, with a transverse knowledge scope from IC design, material process, FPGA, electronics and mechanical engineering. NIT addresses various markets such as industry, scientific, space, aeronautics, surveillance & defense. NIT employs 20 people and is located at Verrieres le Buisson, close to Paris. www.new-imaging-technologies.com



François Coursaget (General Manager) achieved an Engineering Degree at ENSAM Arts & Metiers school in Paris followed by a master's degree in Material Science at Georgia Tech in Atlanta. François started his career at SAFRAN Electronics & Defense where he occupied several Project Leader functions before leading a team of 40 Engineers and PhDs for the electro-optical advanced studies programs and the development of portable electro-optic equipment product range. François then had the opportunity to Manage a growing deeptech SME at NIT. These experiences have given François a solid experience in managing innovation in the electro-optics field.



Photin aims to support worldwide customers in design, #epitaxy and #III-V #MOCVD wafer growth for R&D and small scale production #Photonics and #PIC. #Wafers: #InP based FP / #DFB lasers, #LED / #SLED / #SLD, #infrared #detectors, #GaSb and #InGaAsSb based #eSWIR detectors and #emitters, #GaAs + #InGaAs based lasers, LED, and #photodetectors. www.photin.eu

Krzysztof Klos (CEO) is the CEO of Photin. Krzysztof attended Warsaw University of Technology from 2004-2012, earning a PhD, Msc, BSc in MicroElectronics and OptoElectronics. Krzysztof started his career as MOCVD Process Engineer with Vigo System in 2003 and worked with the company until 2011. He then served as Senior Service Engineer with Epi-Lab (2011-2012), III-V Epitaxy Engineer with CIP Technologies (2014-2017), Senior Electronics Specialist with Astri Polska (2017-2018), and Principal MOCVD Engineer with DenseLight Semiconductors (POET Technologies) (2018-2019) before becoming the CEO of Photin in 2020.



Photonic Components (DFM) Ltd. is an Optoelectronic R&D, Technology and Chip MFG consulting/advising company, based in Hong Kong. It offers professional services in Semiconductor Laser sources, specially VCSELS in NIR Wavelengths for data-communication, sensing, imaging & IR heating etc applications. www.vcselel-photonics.com



Babu Dayal Padullaparthi (Founder & CTO) founded PCDL with over 22+ years of experience in compound semiconductors including 16+ years in III-V optoelectronics/photonic devices, both in academia (R&D) & industry (Manufacturing). Prior to PCDL, he held senior executive roles at high-volume VCSEL manufacturing companies in Hong Kong and their fabs based in mainland China (PRC) between 2012-2021, currently working as the CTO of PCDL. He has direct experience of managing 1000's of epi-growth, processing, testing of 4"(100mm) & 6" (150mm) GaAs based VCSEL wafers, and chip/wafer level data analysis for numerous datacom and sensor VCSEL projects executed with top/medium level in-house & commercial foundries in the world. He was also involved in technology transfers, technical audits, due-diligence, M&A etc with top tier VCSEL companies in Asia, Europe & USA. Co-inventor of 31 international patents on VCSELS and related areas.



SCHOTT is a leading international technology group in the areas of specialty glass, glass-ceramics and related high-tech materials. With over 130 years of experience, the company is an innovative partner to many industries, including the home appliance, pharma, electronics, optics, life sciences, automotive and aviation industries. SCHOTT has a global presence with production sites and sales offices in 34 countries. In fiscal year 2018/2019, the Group generated sales of EUR 2.2 billion with its 16,200 employees. SCHOTT AG has its headquarters in Mainz (Germany) and is solely owned by the Carl Zeiss Foundation. This is one of the oldest private and largest science-promoting foundations in Germany. As a foundation company, SCHOTT assumes special responsibility for its employees, society and the environment. www.schott.com



Gernot Weber (Global Product Manager) studied process engineering and completed his master's degree in general Management. Since 2007, he is working for SCHOTT in different positions. For more than 5 years, he is global product manager for IR materials at Advanced Optics. In addition, since 2020 he is responsible for the global active laser glass business.



Sélim Krummenacker (Project Engineer - IR Components) is the Project Engineer at SCHOTT. In 2009, Sélim received his diploma in engineering at École nationale supérieure de mécanique et des microtechniques (ENSM). He started his career as Intern at Thales, then he served as Maintenance Engineer with 40-30. In 2013, Sélim joined SCHOTT as Project Engineer.



SILIOS Technologies is a French SME, established in 2001, specialized in micro-optics for diffractive optics and multispectral filters and sensors. Our two lines of products address the different application fields of scientific, tooling and medical Lasers, Astronomy, Space & Defense, Astronomy, Bio-medical and Medical, Agriculture and Agro-food industries, Cosmetics and Dermatology, Forensics and Security. On one hand SILIOS Technologies proposes custom multi-spectral filters, sensors and cameras for the VIS/NIR ranges based on its COLOR SHADES® technology and has recently added the SWIR domain to its portfolio. Off-the shelf compact, lightweight and low cost multispectral 1.3 and 4.2 Mpx VIS/NIR cameras, the CMS nd CMS4 series are offered and VGA SWIR cameras from end 2020. On the other hand SILIOS Technologies proposes any type of phase plates such as beams shapers, homogenizers, modes converters, coherent beams combiners, wavefront correctors and generators, spiral phase plates and large grisms ranging from 193nm up to 10.6µm. Our "famous star" products being the homogenizers for the Ti:Sa crystal pump lasers (ELI beam lines and many intense laser chains worldwide), the large Grisms for the NISP instrument of ESA EUCLID Mission and the mode converter for the LIGO interferometer for Gravitational waves detection. www.silios.com



Stéphane Tisserand (General Manager) co-founded SILIOS Technologies and is the General Manager of the company. Prior to that, from 1995 to 1998 he passed his Ph.D. Thesis at LOSCM (today Institut Fresnel) in the field of Planar Lightwave Circuits. After his Ph.D., he developed an optical thin film department in an SME near Paris, before he co-founded SILIOS and operated in the company as the R&D manager first (2001-2009), then as the General Manager (2009-today).



WZWOPTICAG has designed and manufactured high-end, quality optics solutions for a global customer base for more than 54 years. Specializing in 'build to print' manufacturing, from start to finish, WZWOPTICAG has the unique capability of offering customers an integrated 'one-stop' source for all their optical requirements. 'Super-polished' or laser quality polished substrates are ideal for use as low-loss laser mirrors, where thermal stability, surface scatter and high laser damage thresholds are key requirements. Magnetorheological Finishing (MRF) - Obtain high-precision surfaces ($\lambda/50$) and Correction of transmitted wavefront (windows, phase plates, entire system correction on one surface). WZWOPTICAG provides opto-mechanical engineering and system prototyping services. WZWOPTICAG offers a high level of specialized expertise to all phases of assembly fabrication, from opto-mechanical concept and design, through component construction, final assembly and testing. www.wzw.ch



Steven Wagner (Senior Sales Manager) is a Senior Sales Manager at WZW OPTIC AG based in Balgach based in the Optical Rheinvaley of Switzerland. Since his studies of advanced optics and laser physicist, Steven held responsible positions in sales and project management during the last two decades at well-known companies in the photonics industry. He has experience in a wide range of branches like data- and telecom, remote and vision sensing, scientific/research, industrial and medical device industries as well worked within security & defence projects.



Xenics is a pioneer of infrared technology with a proven track record of twenty years. Xenics designs and markets infrared imagers, cores and cameras of best-in-class image quality to support innovative R&D, industrial automation, machine vision, process control and high-end security applications. Xenics offers a complete portfolio of line-scan and 2-D area-scan products for the vSWIR, SWIR, MWIR and LWIR ranges. Mastering all critical steps of the manufacturing process with advanced production facilities and in-house know-how on detectors, systems and software development Xenics delivers state-of-the-art solutions and optimized custom designs. As a European vendor with a worldwide sales and service network, Xenics supports its customers with simplified export procedures. www.xenics.com



Patrick Merken (CTO) received the Engineer degree in electrical engineering from the Royal Military Academy, Belgium in 1988 and the Master of Engineering in Material Science from the University of Leuven in 1996. He obtained his PhD degree at the same university in 2003. His main achievements were in the field of sensor design, low power sensor interfaces and deep cryogenic circuitry. He has authored and co-authored over 100 publications, and holds several patents. He is currently responsible for Research and Development in Xenics.



Yuzhnoye State Design Office is one of the most well-known and recognized scientific and design companies in the world in the field of space technology development. This recognition is based on the exceptional experience in space technology development, gained during almost 60 years of the company's life and reinforced by the capability to grow in modern economic and political environment, while providing flexible response to the needs of the global space launch market. www.yuzhnoye.com



Vitalii Stoliarchuk (Testing Engineer) is a Testing Engineer at Yuzhnoye State Design Office. In 2006, he received his diploma in engineering at the Oles Honchar Dnipro National University. His research interests are in the area of energy and propulsion focusing on multi-phase turbulent reacting flows, turbulent combustion, combustion dynamics, static flame stability, ignition, supersonic compressible flows, fluid mechanics, flow control, flame-fluidic interaction, hydrodynamic instabilities, experimental methods.

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