

## SMART MedTech



C. Melvin  
Director of Operations  
Semi Europe, Berlin, Germany



### Biography

Cassandra Melvin received her BS in Business Management and Neuropsychology at Rensselaer Polytechnic Institute and is Director of Operations at SEMI Europe. For the nine years prior to joining SEMI, she held the position Global Product Manager at Atotech Deutschland GmbH, where she was responsible for managing several hundred electroplating chemistry products in its Semiconductor and Functional Electronic Coatings division. She began her career at the SUNY Polytechnic Institute (formerly the College of Nanoscale Science and Engineering) as a Business Manager focused on strategic and technical programs for semiconductor chemistry and equipment manufacturers. She also held various project and program management roles in clean room operations and IT at SUNY. Cassandra's written work has been published in leading technical magazines and presented at key conferences globally. As an advocate for diversity and inclusion, she is actively involved in SEMI's efforts to promote diversity within the semiconductor industry.

## From Disease Care to Health Care



B. Wiegand  
Global Head, World Without Disease Accelerator  
Johnson & Johnson, Raritan, United States



### Abstract

Over the last 200 years, there has been significant advances in average life expectancy. At the same time, there has been an increase in the number of chronic conditions that we have as we age. So, in some sense, we are living, longer, unhealthier lives. What if we could predict who was going to get disease and then preempt it from happening? That vision could lead to a world without disease. This presentation will discuss strategies to live into this vision, and potential steps toward achieving it.

### Biography

Benjamin C. Wiegand, Ph.D. is the Global Head of the World Without Disease Accelerator, Janssen R&D. This effort is a critical element in Janssen's efforts to catalyze a new paradigm in health care, with the potential to capitalize on the expertise across all of J&J. The focus of the World Without Disease Accelerator is to address the root cause(s) of disease, and then either prevent, intercept and cure the disease. This will lead to interventions much earlier than today's clinically accepted point of diagnosis and will lead to the eradication of the targeted disease. These efforts require both technical and business model innovation to create this new healthcare paradigm.

As the leader of the WWD Accelerator, Ben is responsible for developing and implementing strategies that will deliver solutions in a World Without Disease paradigm. Today, the focus of the WWDA is on three areas, Lung Cancer, Type 1 Diabetes and Colorectal Cancer. In addition, his team has expertise in six critical

enabling capabilities, Immunosciences, Microbial Therapeutics, Sensors & Wearables, Gene Editing, Data Sciences, and Behavioral Neurobiology, which are coupled with digital technologies to activate and change the trajectory of health for consumers around the world.

Ben has worked at Johnson & Johnson for over 20 years, with experiences in a wide range of the Johnson & Johnson Consumer businesses. He has a broad range of experience in both short term product development as well as long term innovation. In that role, he was named a 2008 Johnson Medal recipient for his work on key behavioral studies of the effect of rituals in improving infant sleep behaviors.

Ben holds a B.S. degree in Chemistry from the University of Illinois, and both a M.A. and Ph.D. in Physical Chemistry from Harvard University.

## Perspectives on Healthcare, the Medtech Industry, and Digital



M. Strübin  
Director Digital Health  
MedTech Europe, Brussels, Belgium



### Abstract

Healthcare represents one of the biggest sectors in advanced industrialised countries (the OECD average in 2017 was 8.8 percent of GDP), yet as a market it may be one of the most complicated to access: fragmentation, the strong role of the public sector, the high level of regulation, the often competing interests of powerful stakeholders, and other factors make life difficult for industry. New regulations for medical devices and in vitro diagnostic devices, enacted in 2016, will come into force in the coming years. And advances in technologies, especially in digital, have the potential to change and upend the doctor-patient relationship. These and more developments will be covered in this keynote from MedTech Europe, the largest trade association for the medtech industries in Europe.

### Biography

Michael Strübin joined MedTech Europe as Digital Health Director in 2018 to help develop the industry's voice in the digital health field and to represent MedTech Europe's members vis-à-vis digital health policymakers and stakeholders.

Prior to MedTech Europe, Michael ran the European operations of the Continua Health Alliance (renamed Personal Connected Health Alliance in 2014), an international association of health and technology companies, governments and research organisations to advance personal connected health. Between 2006 to 2008, Michael was the first European Director of the Health Information and Management Systems Society (HIMSS).

Michael studied political science and humanities in Germany and the United States, and worked in international development and philanthropy. Since 2003 he has been based in Brussels.

## Bridging the Gap from Semiconductors to Medical Technologies: GE Research Advances in Multiparameter Gas, Physiological, and Biological Sensing



R. Potyrailo  
Principal Scientist  
GE Research, Niskayuna, NY, United States



### Abstract

Modern monitoring scenarios for biomedical, biopharmaceutical, and personal wellness applications demand sensors with higher accuracy, enhanced stability, and lower power; all in unobtrusive form factors and at a low cost. Unfortunately, available sensors based on traditional detection principles are often inadequate in accuracy, stability, power demands, and convenience. It does seem that existing sensing concepts are reaching their fundamental performance ceilings. These limitations of available sensors drive the innovative designs of new generation of sensors.

In our talk, we will discuss how technological advances in diverse segments of the semiconductor industry positively impact designs and performance of innovative types of gas, physiological, and biological sensors. We will present examples from our recent programs at GE Research where we focus on new principles of sensing based on multiparameter signal excitation and detection. We will demonstrate how these advances were achieved and implemented by utilizing diverse semiconductor processes. These developments resulted in sensors with previously unthinkable performance characteristics in wearable, stationary, and other form factors. As examples, we will illustrate the capabilities of these sensors to independently quantify different environmental, physiological, biological, or bioprocess parameters, to reject interferences, and to enhance sensor-response stability. Conventional and innovative semiconducting processes have played a major role in achieving our new performance characteristics.

### Biography

**Dr. Radislav Potyrailo** is a Principal Scientist at GE Research, leading the growth of wireless and wearable chem/bio sensors for diverse applications. Radislav has been Principal Investigator on programs funded by GE, AFRL, DARPA, DHS, NETL, NIH, NIOSH, and TSWG. Some of these results Radislav summarized in 125+ granted US Patents and 150+ publications on transducer technologies, sensing materials, and data analytics describing sensing concepts and their implementations. He has delivered 80+ invited lectures and ten keynote/plenary lectures at national and international conferences and coauthored/coedited eight books. Examples of his contributions to scientific community include serving as the Chair of the MEMS and Sensors Industry Group (MSIG) Device Working Group, as the North America Regional Chair of International Society for Olfaction and Chemical Sensing, the initiator and a co-organizer of the First Gordon Research Conference on Combinatorial and High Throughput Materials Science, and as the editor of the Springer-Nature book series Integrated Analytical Systems. His recent recognitions include SPIE Fellow and Prism Award by Photonics Media/SPIE.

## Digital Health: Tracking Mental Stress and Mood Using Wearable Data and Machine Learning



E. Rios Velazquez  
OnePlanet | Connected Health Solutions, Leuven,  
Belgium

**imec**

embracing a better life

### Abstract

Through wearable technology and digital footprints on our mobile phones, social media, etc., we can extract valuable insights on our lifestyle and well-being. imec is developing new tools to encourage behavior change towards a healthier lifestyle, that may lead to new therapeutic tools for patients with mental health problems such as depression or eating disorders.

Through habit monitoring, physiological monitoring, and personalized, intelligent algorithms we aim to identify triggers of unhealthy behavior, increase awareness and contribute to preventive health.

This talk will touch on data-driven machine-learning enabled applications linking wearable data and mental health.

### Biography

Emmanuel is a data scientist engaged on the identification of relevant patterns of physiology and brain activity to assess cognition, mood and behavior through wearable technology, at imec's Connected Health Solutions team.

Emmanuel received a PhD from the Maastricht University, on the use of heterogeneous patient data and computational imaging (radiomics) for decision-support systems in radiation oncology.

This pioneering work led to diverse multi-centric, international scientific collaborations. This was followed by a post-doctoral degree at the Computational Imaging and Bioinformatics lab at the Dana-Farber Cancer Institute-Harvard Medical School, investigating the link between cancer imaging phenotypes and tumor biology for precision medicine.

Besides crunching data, he likes reading (contemporary novels), playing drums and whenever possible going to the sea.

## Sensors to Enable Consumer Health Applications



F. Frederix  
Senior Marketing Manager Smart Medical Devices  
ams, INS, Berchem, Belgium



### Abstract

Healthcare costs are rising due to an aging population and with decreasing funds from governments and insurance companies, our society needs to implement efficient healthcare solutions and more critically, pay more attention to prevention, early diagnosis and remote monitoring. This explains the recent rise of consumer health solutions. In this abstract, we will discuss the requirements related to the sensor technologies in medical-grade devices. We will demonstrate various technology approach options in the field of point-of-care (POC) diagnostics and portable consumer health devices. To take full advantage of preventative care, it is important that people are able to frequently monitor their health status. Research shows that monitoring tools must be easy to use, non-evasive and connected, with the ultimate goal is for these tools to be used at home or at the GP's office. POC testing or rapid tests have the potential to solve these challenges. A relevant example is the commonly used home pregnancy tests, which are based on the lateral flow testing principle. At ams, we developed an electronic/optical readout for these tests to boost the sensitivity and enable multiplex capabilities. We will highlight a first prototype of this technology and its performance. We will also present the VivaVita, which is a result of a corporation between Joysys and ams. We will explain the working principle, the specifications and the applications. The VivaVita device allows generating medical quality data at a consumer level or outside a hospital setting. The VivaVita measures heart rate variability, ECG and blood pressure with a small, portable and fully integrated device. It is operated in a consumer friendly way, it is cost-effective and enables wireless data transfer and wireless charging. The core of the device is the AS7026 module, which is a low power, fully integrated optical module that allows for photo plethysmography (PPG) measurements in a reliable way.

### Biography

Filip Frederix has worked for more than 20 years in the field of nanotechnology for healthcare products and is author of several publications and patents. Filip joined ams in October 2017 to spearhead the ams marketing efforts for Smart Medical Devices within the Imagine New Sensor Division. With a proven track-record in starting new business opportunities, Filip's background includes working as an independent consultant supporting life sciences startups with capital raising and their business strategy. The largest part of his career was spent at NXP as a program director and new business development manager for healthcare products. In 2004 Filip won the prestigious DSM award, where he continued to work on emerging business projects at DSM in the Netherlands. While working as a post-doctoral researcher at IMEC, he earned his PhD degree in Chemistry from the University of Leuven in 2004. He serves as part-time professor at the University of Hasselt (since 2013).



H. Leistner  
Team Leader | Micro Dosing Systems  
Fraunhofer EMFT, München, Germany



### Biography

Henry Leistner is holding a Master's degree in Semiconductor Physics and in Industrial Engineering. His

previous research activities focused on yield enhancement methods at X-FAB Silicon Foundries. Further he investigated improvement strategies in customer supply allocation with machine learning at Infineon Technologies. Since 2018, he has been leading a team of the Micro Dosing Systems department of Fraunhofer EMFT, covering a broad range from applications, feasibility studies and consulting activities in medical technology (e.g. artificial pancreas, insulin patch pumps) to consumer electronics (e.g. environmental sensors in smartphones). Additionally, he is pursuing a PhD in Electrical Engineering at Technical University of Munich.



P. Boisseau  
Director EU R&I Partnerships Policies  
MedTech Europe, Brussels, Belgium



### **Biography**

Patrick Boisseau is the Director, EU Research & Innovation Partnership Policies at MedTech Europe, the EU association of medtech and in vitro diagnostics industries, based in Brussels (Belgium). He is a core member of the Inter Association Task Force setting up the future Public Private Partnership on Health Innovation under Horizon Europe.

Until recently Patrick was VP Europe at CEATech Healthcare Institute, based in Grenoble (France). He managed a significant number of EU collaborative projects, research infrastructures, coordination actions and networks of excellence for the past 20 years. His scientific and technical expertise focuses on innovative medical technologies.

## The Digital Patient: Will We One Day Have our Own Health Avatar?



G. Janssen  
Department Head Multiphysics & Optics and  
Program Manager Patient Digital Twin  
Philips, Eindhoven, Netherlands



### Abstract

A digital twin is a virtual representation of its physical counterpart, bringing together all relevant data of the physical part – preferably continuously updated with new data - and adding an intelligence layer on top of it to extract extra insights and predict future performance or issues. Whereas digital twins for devices or equipment are already known for some time in industries like Aerospace, Automotive and Energy, it's a relatively new concept in Healthcare. This is certainly true if we translate the digital twin concept to patients. In this presentation we will dive into this concept of patient digital twin, sketch a future vision on its applicability and how it can transform the healthcare industry. Since apart from big promises there are also big challenges, not only the vision and current status of developments will be discussed, but also the challenges that must be overcome and the limitations that we need to take into consideration.

### Biography

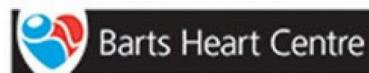
Ger Janssen has a PhD in Applied Physics from Eindhoven University of Technology in the Netherlands. He joined Philips in 2001 where he started as thermal expert and continued his career in different roles, from project leader to group leader to department head. In all his responsibilities computational modelling is the recurring theme, in which he has now over 20 years of experience. He is currently head of the newly formed Digital Twin department in Philips Research and since 2018 also Program Manager Patient Digital Twin. In these roles he is shaping the digital twin activities of Philips.



## The Clinician's Point of View



A. Mathur  
Director of Interventional Cardiology, Bart's Heart  
Centre  
Bart's Heart Centre, London, United Kingdom



### Abstract

Artificial Intelligence and Virtual Reality are already relied upon by clinicians in interventional cardiology. 3D printing, simulated therapeutic results, anatomical and physiological models, computer generated reconstructions and augmented reality are all part and parcel of a clinician's daily life. However, our current overarching approach to cardiovascular disease involves silos of care based on prevention, diagnosis, treatment and rehabilitation. There are few tools that allow a holistic, individually tailored approach to these segments. Consortia have a wealth of healthcare data which target these important areas in isolation, rather than linking them across the interactions of a human lifetime. Further, the available data regarding intervention, whether it is prevention, treatment or recovery, is difficult to tailor to the individual in the absence of bespoke sensing technologies linked to proven algorithms. Therefore, there is a pressing demand to amalgamate our data, unify our latest (and future) scientific and engineering research, and apply it to personalised healthcare. We can break the cycle of only reacting to the patient's heart condition at the point of discovery (cardiac event) by unifying innovative clinical and computational understandings of cardiovascular diseases to develop integrated tools to reveal potential disease pathway years in advance. These unified digital solutions can then be used to guide the actions of the individual, alongside the professional, to manage heart health in radically new pathways. The individual is empowered to identify their risk, recognise their lifestyle challenges, and receive the focussed interventions they need. Our proposal is that human avatars will become Digital Twins – heralding pioneering computational and technological vehicles which wholly represent the human individual and their cardiovascular status, be it in the prediction, prevention, diagnosis, treatment or rehabilitation of cardiovascular disease.

### Biography

Anthony Mathur has been a Professor of Cardiology at QMUL & Barts Health Trust since 2009, and leads their Centre for Cardiovascular Medicine and Device Innovation. He is also the Director for Interventional Cardiology and the Head of Interventional Cardiac R&D at Barts Health. Further, he is an adjunct Professor for the Department of Medicine, Yale. Anthony has also sat on several international advisory boards, including chairing the ESC Task Force for stem cells in cardiovascular disease, as well as advising the UK Department of Trade and Industry and the House of Lords Select Committee on cell therapy. Alongside these positions, he regularly reviews papers submitted to *Circulation*, *Heart*, *the Lancet*, and *Thrombosis and Haemostasis*.

Anthony specialises in interventional cardiology and the management of heart failure patients who have failed conventional therapy. He aims to develop new techniques and devices to treat these patients who fall outside the remit of current recognised therapies. His research interests primarily concern the role of stem cells in the treatment of cardiovascular disease and, to date, his research has received over £25m in funding. Of this, £15m was for translational research. Several of his programmes have international recognition, including an adult heart stem cell research programme, and a novel stent development programme. Moreover, he leads a collaborative group with Prof. John Martin (UCL) seeking to address the role of stem cells in the treatment of cardiovascular disease. This partnership has led to the establishment of a large series of clinical trials translating the interesting results produced by basic experimentation, into relevant therapeutic approaches in man. Anthony is currently the CI for one of the first Phase III trials of cell therapy in acute myocardial infarction. Alongside this, he is a Trustee of the Heart Cells Foundation Charity and heads their pioneering Compassionate Treatment Unit for Heart Failure. This dedicated stem cell programme is the

UK's only centre to treat compassionate heart failure patients with their own stem cells.

Anthony is also interested in the use of advanced cardiac imaging, particularly in examining the mechanistic aspects of translational research, and was Barts' Lead Clinician for Advanced Cardiac Imaging. He chairs a joint imaging board, linking Barts' radiology and cardiology departments, which has assembled a state of the art collection of advanced imaging hardware composed of: cardiac MR, PET/CT, cardiac CT, nuclear perfusion and advanced echo.

Within the Centre for Cardiovascular Medicine and Device Innovation, and as part of an on-going collaboration with Yale University, Anthony raised £6m in EU grant funding to create a Cardiovascular Devices Hub. The Hub supports collaborations between academic, clinical and industrial innovators to develop clinically and commercially viable cardiovascular devices. This novel, cross-specialty unit helps SMEs over the hurdles involved in taking new innovations to human trials, thereby catalysing innovation.



G. Heidenreich  
Director for Healthcare IT Standards  
Siemens Healthineers, Erlangen, Germany



### **Biography**

Dr. Georg Heidenreich is with Siemens Healthineers, where he holds the position of Director for Healthcare IT Standards.

In that role, he serves as chairman of the German national committee to IEC 62A (Electrical Safety of Medical Devices) and of the medical cybersecurity workgroup of ZVEI. As the co-convenor of IEC/ISO JWG7 (Safety, effectiveness and security of clinical IT-networks)

he is writing a new process standard ISO 80001-5-1 on medical device cybersecurity.

Georg is member of the German Informatics association (GI), HL7 Germany and helped create the Association for Software Quality in Franconia (ASQF). He holds a diploma in Computer Science and received a doctoral degree in Engineering from Erlangen-Nuremberg university.

## Vandebrouck Laurent

L. Vandebrouck  
Chief Executive Officer  
Chronolife, Paris, France



### Biography

Laurent Vandebrouck is Chronolife's Chief Executive Officer and was Managing Director Europe Qualcomm Life before prior to that. He has 25 years of experience in the development, launch and operation of end-to-end services for enterprises among which 8 years in digital health, remote patient monitoring and connected therapies for the Pharma, MedTech and large integrators, service providers and HCPs in Europe and in the US.



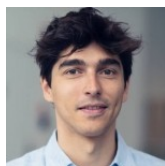
A. Van den Bosch  
Director Public R&D Policies and Programs  
Imec, Leuven, Belgium



### Biography

**Anne Van den Bosch** obtained her master degree at the Catholic University of Leuven in 1995 and her PhD degree in 2003 in the area of current steering digital-to-analog converters. She is first author of 17 publications and co-author of 5 publications and has been reviewer for IEEE. From 2001 until 2008, she worked for the Flemish funding agency where she coordinated the micro-electronics and photonics team and where she represented the agency in the MEDEA+/CATRENE and ENIAC public authorities board. She is now working at imec as Director Public R&D Policies and Programs and coordinates all activities within imec relating to Flemish and international public research policy and programs including the collaboration with research institutes. She is member of several commissions and steering committees.

## Microfluidic, CMOS Microelectrode Array-based Organ-on-chip System: a Platform for Personalized Medicine



T. Pauwelyn  
Postdoctoral Researcher  
imec, Life Science Technologies, Leuven, Belgium



### Abstract

Healthcare has traditionally focused on one-size fits-all medication to treat populations instead of tailoring treatments to individual patients. Recent advances in stem cell technology, allow researchers to create models of diseases or individual patients for personalized medicine. Although organ-on-chip devices expose these models to a more physiological cellular environment, these devices face significant challenges including assay throughput, signal quality, and scalability of production.

To address these challenges, imec developed a 16k CMOS-based microelectrode array with 16 independent, microfluidic chambers. This platform offers both scalability in fabrication and assay throughput. Further micropatterning of the surface allows for a structured growth that better resembles a specific organ. By combining these devices with patient-specific cell models, these platform shows great potential for cardiac, neuronal, and oncological applications in the field of personalized medicine.

### Biography

**Dr Thomas Pauwelyn** has studied at KU Leuven, Belgium, since 2008. He earned his BSc in Bioscience Engineering specializing in Catalytic Technologies in 2011 and a Master's in Nanoscience and Nanotechnology with the Bioscience Engineering option in 2013. He then received an IWT fellowship to do a PhD at KU Leuven and imec's Life Science Technologies group, which finished in 2018.

Thomas is currently working as a post-doctoral researcher with an Innovation Mandate grant from VLAIO, investigating strategies to valorize the results from his research. Thomas's research focuses on developing novel organ-on-chip systems for predictive toxicology and drug development. He is also investigating how organ-on-chip devices may help stratify patients and help enable personalized medicine.

## Introducing the Next Generation of Sleep Diagnostics



S. Adnane  
VP Product, Co-founder  
Onera, Eindhoven, Netherlands



### Abstract

The field of sleep medicine is stuck in some fairly dark ages, and not the beneficial kind of darkness that's important to fall asleep.

Accurate sleep testing today requires a visit to the sleep clinic, where patients spend hours in unfamiliar rooms with cumbersome sensors attached to their face, scalp, chest and limbs. It's a technology that hasn't changed much in the past thirty years, and the experience is often uncomfortable, inconvenient and expensive.

But while sleep diagnostics are stuck in the past, more and more people are starting to realize the future of health depends on good sleep. One in five people struggle with sleep today. Whether it's insomnia, sleep apnea, narcolepsy or a host of other disorders, days are spent exhausted, rundown, and suffering from an inability to focus or learn. And sleeping disorders can also affect physical and mental well-being. Recent studies have linked poor sleep to many chronic, life-threatening diseases and conditions, including hypertension, type 2 diabetes, obesity, heart disease, and depression.

Now more than ever, sleep needs to be part of the conversation between doctors and their patients, as vital a consideration as cholesterol, blood pressure, cardiac stress tests and screening for cancers.

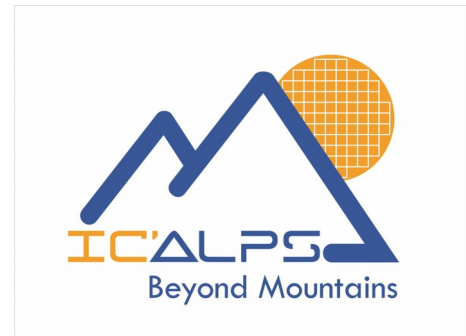
### Biography

Soukaina is a Co-Founder & VP Product at Onera. Originally from Morocco, she left home at age 17 to study in France, ultimately earning a Master's degree in Materials & Technical Textiles from ENSAIT. Her fascination with wearable technology and technical textiles has taken her across the globe, to the Czech Republic, Taiwan and now the Netherlands. Prior to Onera, she was an Entrepreneur in Residence at imec. Now she's dedicating herself to an ambitious mission – to help all sleep sufferers get access to diagnostics and treatment – no matter who they are or where they live.

## Enabling Smart MD with Custom Integrated Circuit (ASIC)



R. Girin  
Business Development Manager  
IC'Alps, Meylan, France



### Abstract

In the context of the digitalization of Medical Devices (MD) and of the associated revolution of the Internet of Medical Things (IoMT), there is a growing need for optimized electronic.

Today, the most widely used approach to develop MD products is electronic boards implemented using Components Off-The-Shelf (COTS) or FPGA, with performances, content and form factor as they are. No customization and limited optimization is possible which does not really match the stringent medical application requirements.

We can now demonstrate that ASIC approach shows decisive advantages for medical applications and especially for implanted medical devices.

People may think that custom integrated circuit (ASIC) is a way too expensive for their device. But, thanks to the constant decreasing cost of silicon, the possibility for medium to low volume applications to benefit from an ASIC becomes a reality.

An ASIC is a circuit designed to do exactly what you need and nothing more, with the required level of quality (ISO13485 compliant for medical). Consequently, it facilitates miniaturization through small chip footprint and drastic BoM reduction, it enables extreme low power consumption, a key parameter to optimize the autonomy.

Furthermore, as you own the ASIC, you will have full control of your chip procurement with a low sensitivity to obsolescence, that is useful when product life ranges more than a decade.

Always with the willingness to make easier the life of MD developers, IC'Alps is working on a new Medical Optimized multi-sensor Platform (MOPx). It offers an industrial solution containing various physiological readouts (ECG, PPG, GSR, Bio-Z), power management features to optimize battery life time, security functions to guarantee data integrity, processor for algorithms and wireless communication for remote data collection and control. This MOPx platform will help MD developers to accelerate and secure the way from the POC to the industrialized MD product.

### Biography

Graduated in Electrical Engineering in 2004, Remy GIRIN developed his technical, management and business knowledge in the semiconductor market for nearly 15 years. He participated numerous European collaborative projects for bringing disruptive innovations to the market. After having encountered success in helping growing the innovation and turnaround the operations in his previous company, Remy joined IC'Alps just after registration in 2018 a company specialized in ASIC design in particular for medical applications, and is now committed to raise IC'Alps' business.

## A Medical Grade T-shirt for Continuous and Predictive Medical Remote Monitoring



L. Vandebrouck  
Chief Executive Officer  
Chronolife, Paris, France



### Abstract

RPM (Remote Patient Monitoring) services will rapidly grow and be adopted for patients with Chronic diseases to improve their Quality of Life, reduce the (re)admissions and reduce the healthcare expenses. To succeed and reach the three latter objectives, RPM services and associated medical devices used for RPM need to combine several characteristics: 1) easy of use and/or comfortable for wearables for adherence; 2) continuous monitoring for a better support for diagnostics and prediction; 3) multi-parametric physiological parameters combined in quasi real-time to predict clinical event and alert in due time.

Chronolife has developed and has started commercializing a solution combining these three elements for success. Chronolife is an healthcare artificial intelligence start-up that develops solutions for remote monitoring and prediction of the health status of a patient. Its patented technology is a unique neuromorphic algorithm called HOTS (Hierarchy Of event-based Time-Surfaces), which analyses several data flows continuously, to characterize clinical events.

Leveraging this patented HOTS technology and algorithm, Chronolife has developed a smart washable T-shirt that integrates various sensors to monitor physiological data continuously. This data is analyzed by the smartphone application on a patient's phone that uses HOTS technology to conduct data fusion. It is capable of detecting changes in a patient's health and triggering alerts to healthcare professionals to predict acute pathological episodes.

### Biography

Laurent Vandebrouck is Chronolife's Chief Executive Officer and was Managing Director Europe Qualcomm Life before prior to that. He has 25 years of experience in the development, launch and operation of end-to-end services for enterprises among which 8 years in digital health, remote patient monitoring and connected therapies for the Pharma, MedTech and large integrators, service providers and HCPs in Europe and in the US.