



# Driving Global Change: Turning Technology into Healthcare Success Stories

Jasper van Weerd, Lipocoat

# Driving Global Change: Turning Technology into Healthcare Success Stories

“Lessons learned along the way...”



6 November 2024



# TOPICS

**From research to impact**

Becoming an entrepreneur

**Venture building**

Building a medtech company

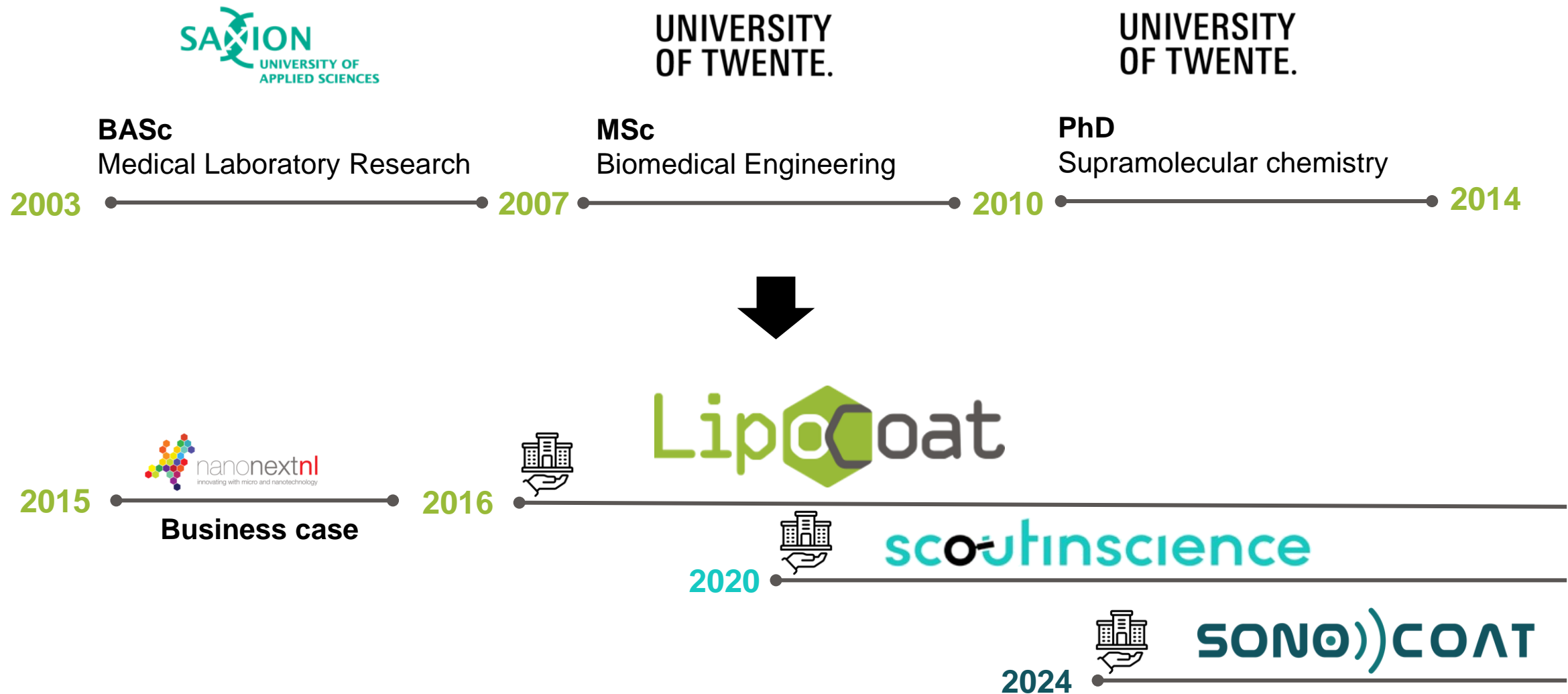
**Maintain leadership position**

Growth perspective

Open discussion

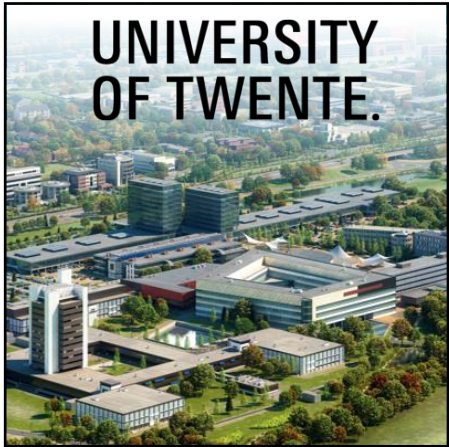


# RESEARCHER TO ENTREPRENEUR



# LipoCoat Overview

LipoCoat is a bio-inspired coating technology



UNIVERSITY  
OF TWENTE.

LipoCoat

Founded in 2016

> 10 Years of R&D  
> 20 Award & Honors



Intellectual  
Property

4 Patent Families



Acquired Q1 2024  
(past funding € 7M)  
€ 1M new funding



Coating product  
RGP contact lenses

Coating product  
CVC catheters



SI9 Capital Partners

NWO  
Take-off  
fase 2

high | tech | fund BV

Rabobank

EFROOST  
Programma O&O Nederland 2021-2027  
Europees Fonds voor Regionale Ontwikkeling

RED  
MEDTECH  
VENTURES

Streeklaboor voor Ontwikkeling  
Onderwijs

LEX<sup>2</sup> INVESTMENTS

European Commission

nanonextnl  
connecting soft to hard and vice versa

Funding to Date  
€7.5M Equity  
€2.0M Non-dilutive



- 2015 Winner pitch Holland-Innovative
- 2015 Winner NanoLabNL Voucher
- 2015 Winner Audience Award NanoCity
- 2015 Winner of Jury award Dragon's Den NNNL
- 2015 Winner of Audience award Dragon's Den NNNL
- 2015 Finalist Young Technology Award
- 2016 Winner NanoNextNL valorisation grant
- 2016 Winner Business pitch Health Afslag Twente
- 2016 Finalist TOM
- 2016 Awarded Red Medtech Ventures
- 2016 **Start-up of the Year award Minac**
- 2016 Awarded MIT-grant RVO
- 2017 Special award business delegation Tokyo
- 2017 Awarded H2020 SME-1 grant
- 2017 Awarded NWO Take-Off 2
- 2018 High Tech Lease Fund Grant
- 2019 EU Seal of Excellence
- 2019 Top 10 Academic startups Netherlands
- 2019 Top 30 Global startups – GIST Catalyst
- 2019 **European Biotech Startup of the Year**
- 2020 Semi-finalist YBA 2020
- 2020 **Best Medical Device Coatings Company 2020**
- 2020 Selected as Jlabs resident
- 2021 Top-100 most innovative companies
- 2021 **Heraeus Accelerator Champion**
- 2022 Extreme Tech Challenge global finalist



# LIPOCOAT GROUP



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[WWW.LIPOCOAT.COM](http://WWW.LIPOCOAT.COM)



[INFO@LIPOCOAT.COM](mailto:INFO@LIPOCOAT.COM)



# LIPOCOAT LABORATORY



- Manufacturing
- Coating development
- Surface activation
- Device prototyping
- Performance testing
- Microbiology research
- Surface analysis
- QC methods
- ISO-13485 certified



# MISSION

## MISSION TO IMPROVE MEDICAL DEVICES

### COMFORT

### SAFETY

### PERFORMANCE

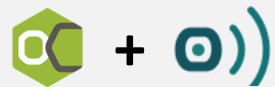


- Lubricous
- Hydrophilic

- Anti-fouling
- Hemocompatible



- Ultrasound guidance
- Improved positioning

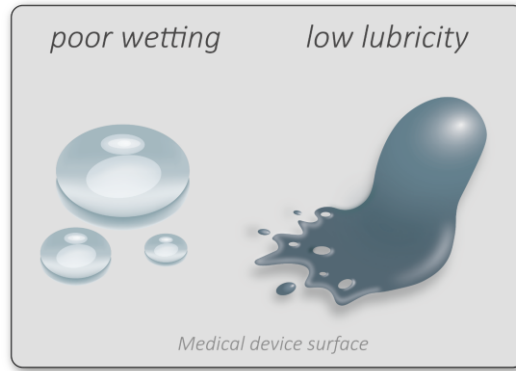




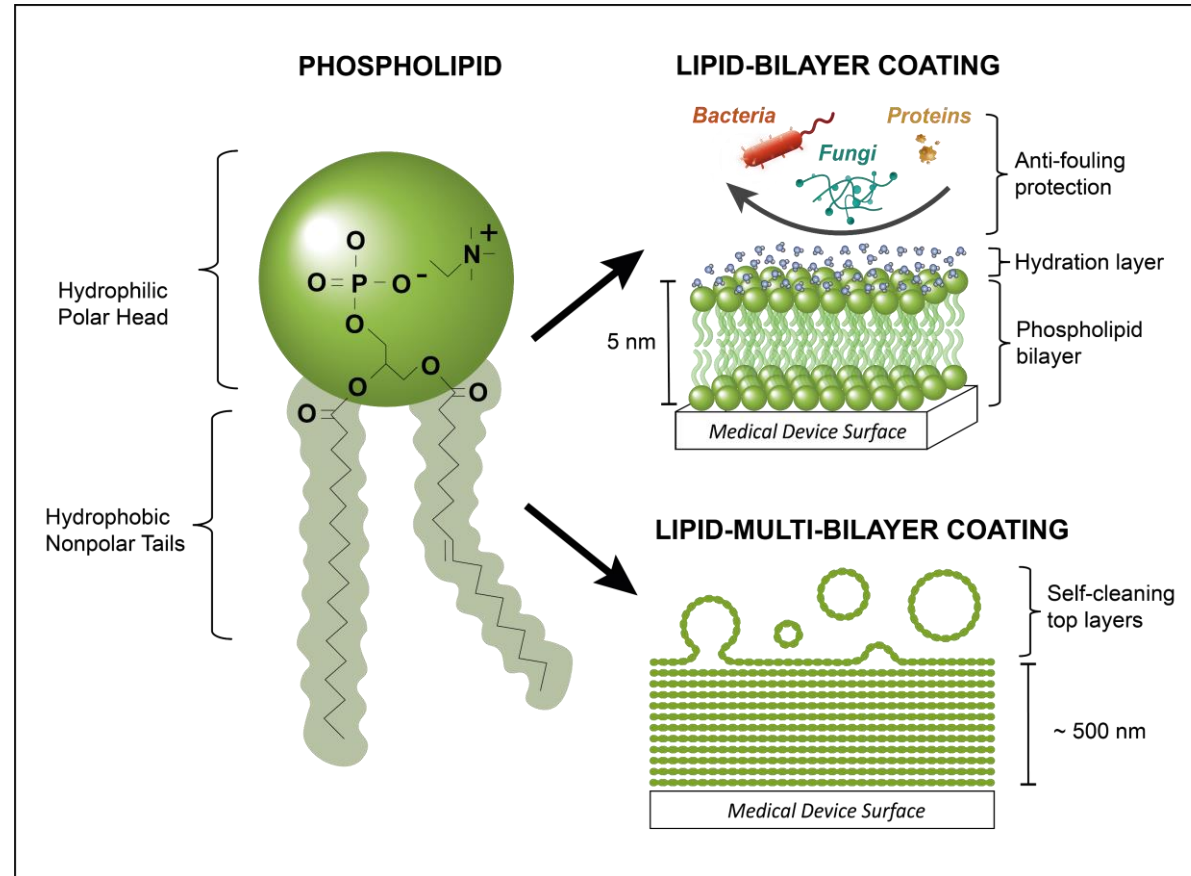
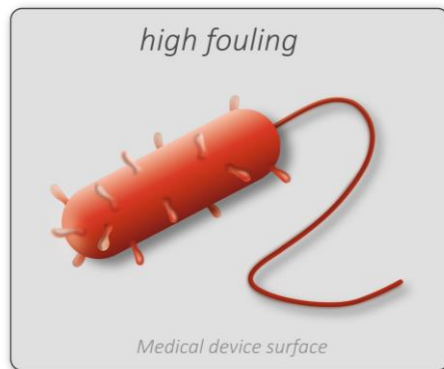
# LIPOCOAT® COATINGS

## Covering the artificial surface with a layer of natural lipids

### DISCOMFORT



### INFECTION RISK



# HUMAN CAPITAL

## Management Team



**Jasper van Weerd, PhD**  
Founder  
CEO



**Alain le Loux, MSc. MBA**  
Co-founder  
CFO



**Phil Lavin, PhD**  
Regulatory & Clinical expert



**Emma Luong-Van, PhD**  
CTO



**Fabian Stein, MSc.**  
CBDO

## Product development & Manufacturing



**Dorothee Wasserberg, PhD**  
Senior R&D



**Michela Campagna, MSc**  
Production manager



**Francisca Gomes, PhD-cand.**  
R&D (PPP grant project)



**Mireia Vilar Hernandez, MSc**  
R&D (DIRNANO grant project)



**Brent in 't Veld**  
R&D



**Emily Klein Rot, BSc**  
Lab manager



**Aylin Oymaci, BSc**  
Head of ML-1 R&D



**Maisaa Satti, MSc**  
R&D

## Board of Advisors



**Prof. Marcel Karperien**  
Co-founder  
SMART OoC



**Anil Duggal, MD**  
Medical advisor



**Prof. Pascal Jonkheijm**  
Co-founder  
PPP and DIRNANO



**Alex Lamse**  
Industry Expert contact lenses  
24Eyez®

## Human Resources and Support



**Michelle van Dalen**  
Office manager

## QA/RA



**Rob van Weeghel, PhD**  
QA manager & PRCC



**Justin Weerink, MSc**  
QA/BD

## External executive advisors



**Jan Bovelander, CRNA**  
Industry Expert catheters  
LipoCath®

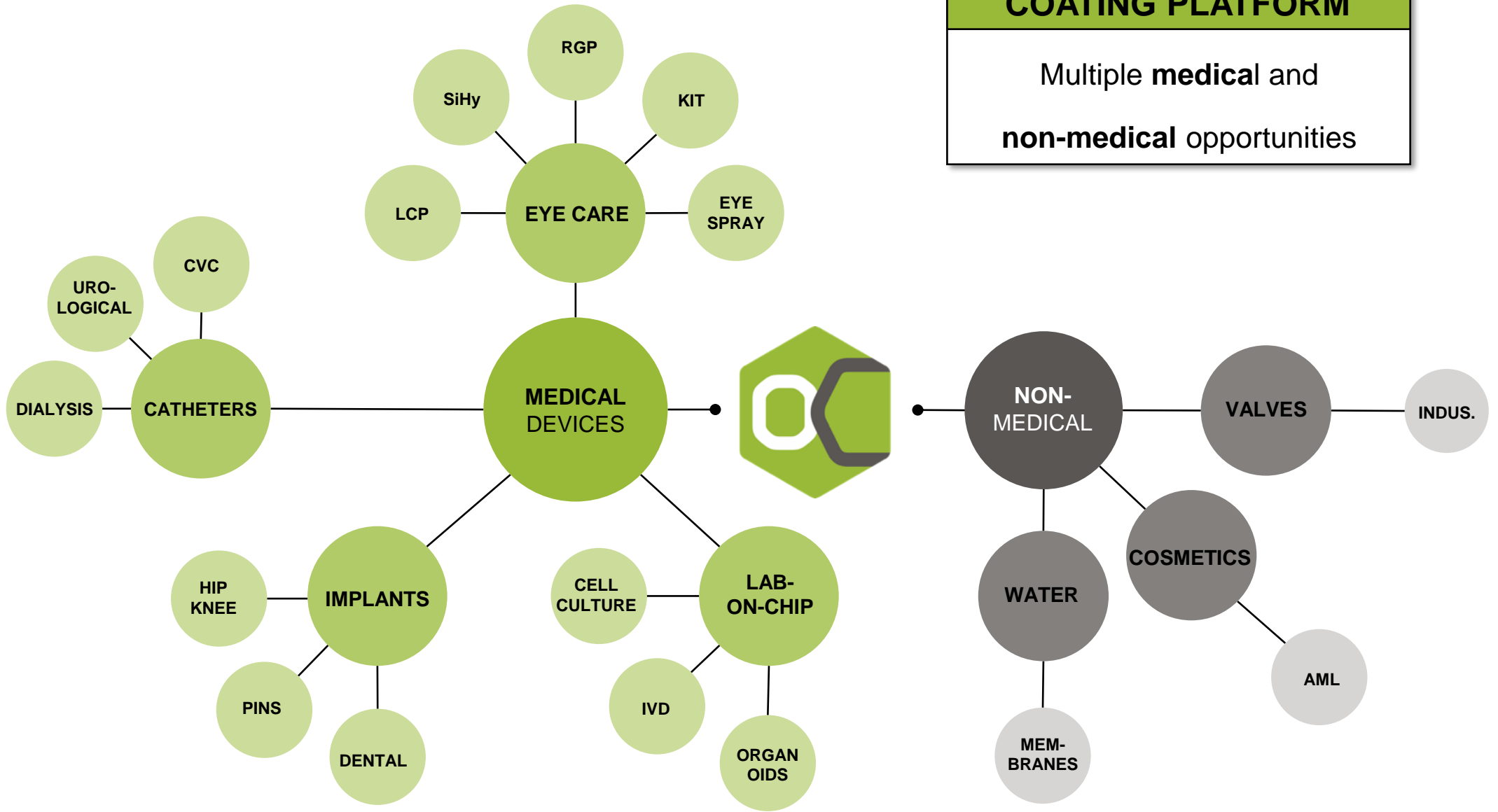
## Legal



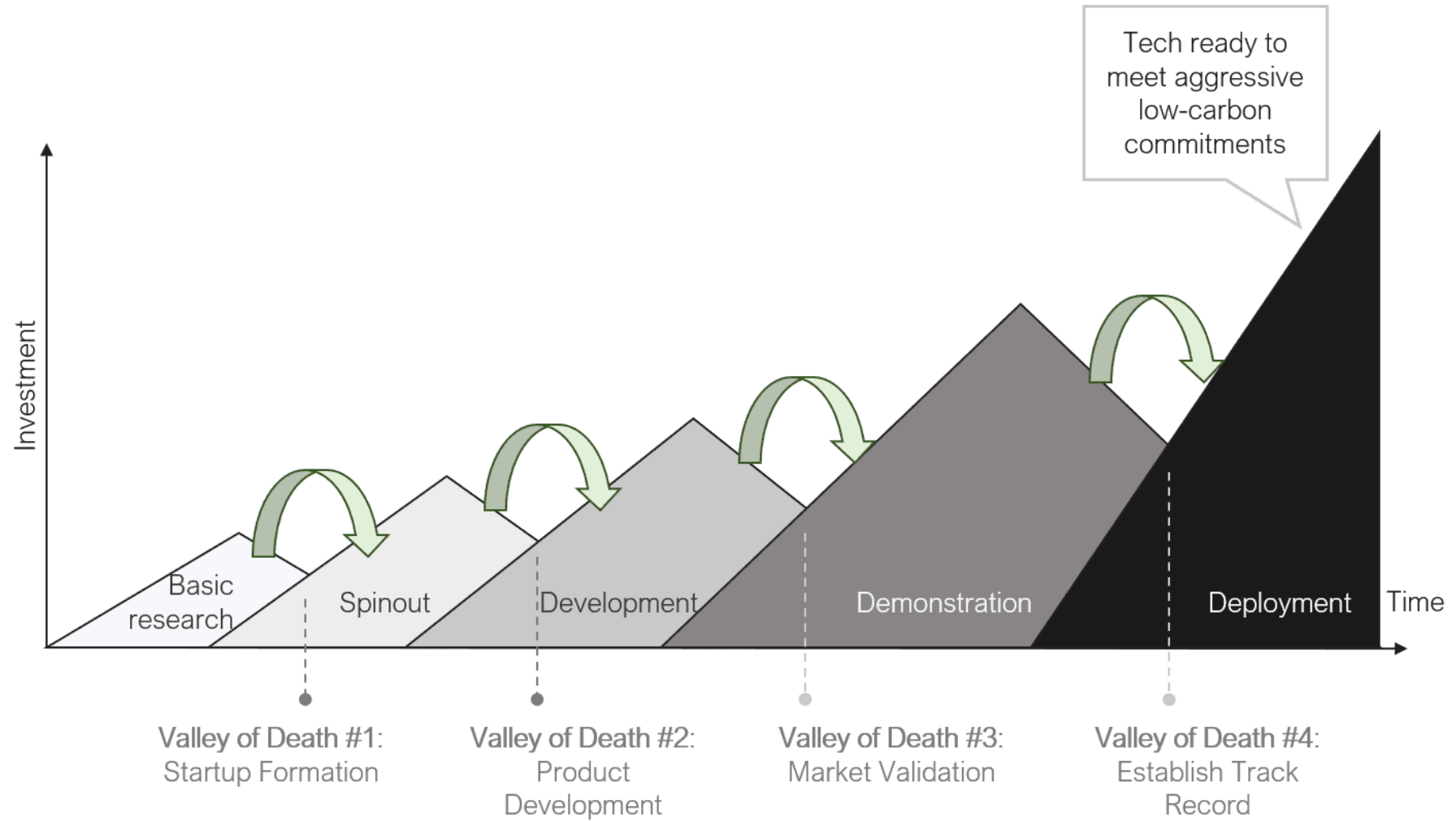
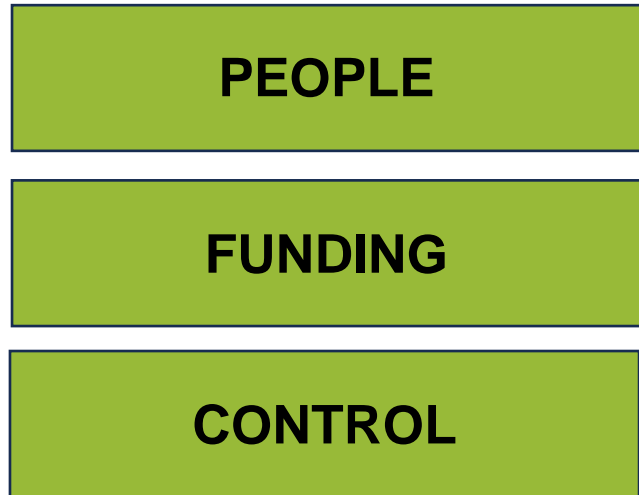
**Ian Bussey**  
M&A specialist & legal  
IMAP



# PRODUCT OPPORTUNITIES



# THE JOURNEY



## **TECHNOLOGY ONLY SMALL PART OF A (MEDICAL) PRODUCT**

### **GET OUT THERE**

[e.g. knowledge vs experience]

### **SCIENCE IS DIFFERENT THAN BUSINESS**

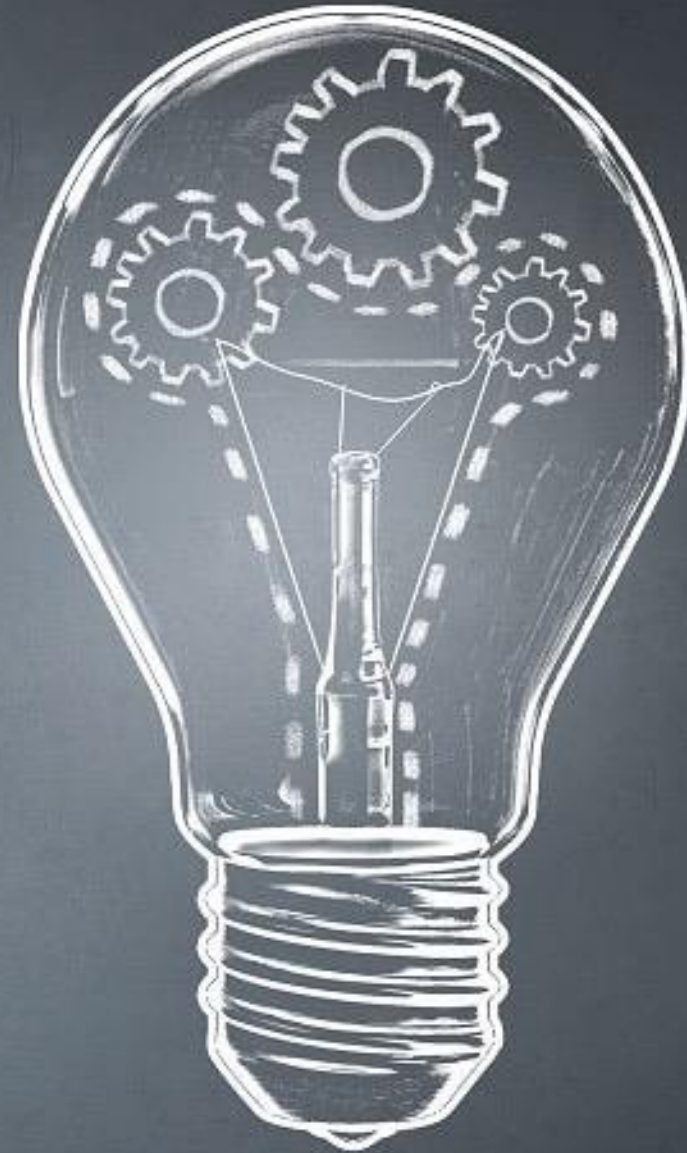
[e.g. execution power “varen op dichte mist”]

### **FOCUS ON THE OPPORTUNITY, MANAGE THE RISK**

[e.g. funding & control]

### **IT'S FUN !!!**

[celebrate your success (failures)]



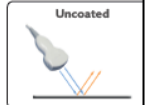
**ORGANS ARE CLEARLY VISIBLE UNDER ULTRASOUND - MEDICAL DEVICES ARE NOT**

Ultrasound is a valuable tool. Physicians have difficulties in identifying the position of needle and catheter tips due to their poor echogenic surface properties. Current echogenic solutions do either not exist for catheters or ceramic surfaces or only provide poor echogenic improvements, for needles using techniques such as dimpling, notching or laser-etching.

Sono-Coat® offers a unique solution, applicable for various materials and medical devices leading to an unprecedented echogenic performance.

**HOW DOES OUR COATING WORK**

Sono-Coat® microspheres are embedded in a coating matrix and reflect ultrasound waves in all directions providing unmatched ultrasound visibility. The coating allows precise targeting and effortless tip location of coated needles and catheters resulting in safe and accurate ultrasound-guided procedures.



**M-SERIES COATING**

The Sono-Coat® M-Series can be used in various applications such as ablation, biopsy, nephrothectomy while being compatible with sterilization methods.

M-Series
<b>Coated Materials</b> Steel - Nitinol
<b>Durability</b> thermally resistant - scratch resistant
<b>Thickness</b> adaptable between 35-90 µm (1/- 5 µm)



Sono-Coat BV - Hengelosestraat 541 - 7521 AG Enschede - The Netherlands - info@sonocoat.com - T: +31 (0) 53 - 82 00 612

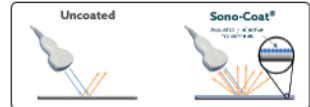
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Ultrasound is a valuable tool, but it has limitations. Physicians have difficulties in identifying the position of needle and catheter tips due to their poor echogenic surface properties. Current echogenic solutions do either not exist for catheters or ceramic surfaces or only provide poor echogenic improvements, for needles using techniques such as dimpling, notching or laser-etching.

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**P-SERIES COATING TECHNOLOGY**

The Sono-Coat® P-Series coating technology can be used in various applications e.g. different types of catheters or guidewires while being compatible with conventional sterilization methods.

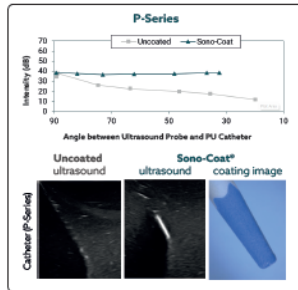
P-Series System
<b>Coated Materials</b> Nylon - PEEK - PU - PVC - Polysilicon - PEBAX
<b>Durability</b> minimal impact on mechanical properties - flexible - not damaged after kinking
<b>Thickness</b> adaptable between 35-90 µm (1/- 5 µm)



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**UNMATCHED ECHOGENICITY**

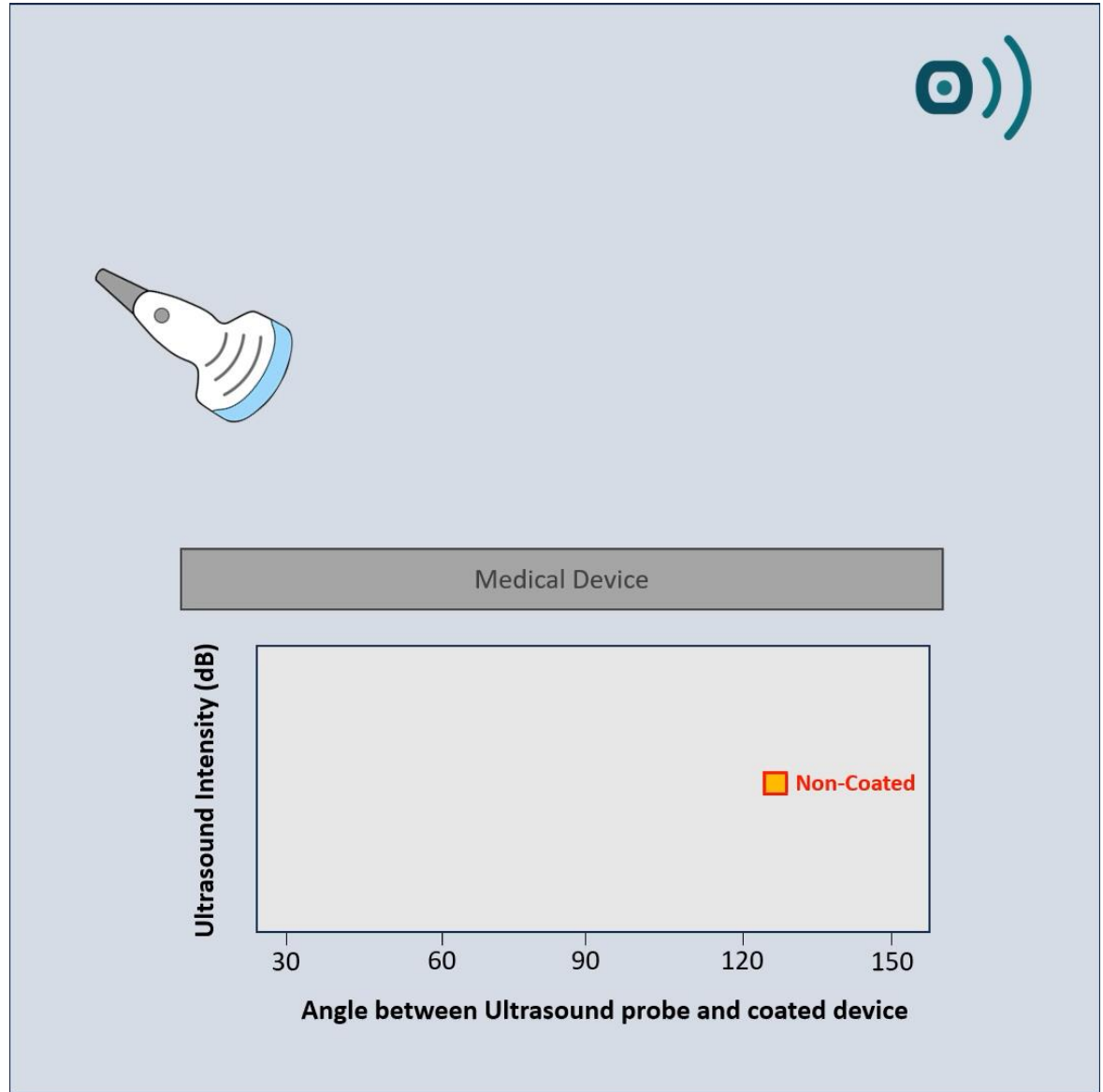
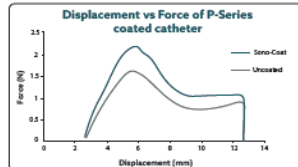
The ultra-reflective embedded particles allow an angle independent strong ultrasound signal and contrast to the surrounding tissue. The coating is fully biocompatible according to ISO-10993 and transparent, which doesn't lead to the cover-up of marking or labels.



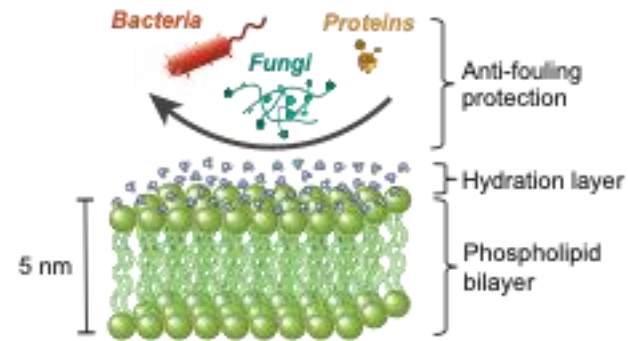
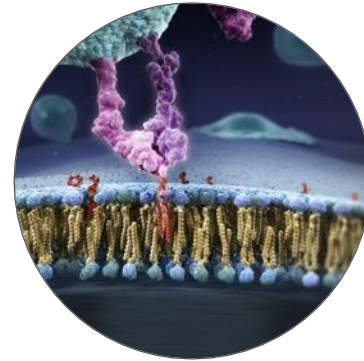
**MECHANICAL PROPERTIES**

The P-coating exhibit a strong flexibility and abrasion resistance. Additionally, it can be used in combination with lubricious, antimicrobial or antithrombogenic coatings without the loss of the Sono-Coat® echogenicity to further improve the surface properties.

The penetration and sliding force of a P-coated catheter is slightly increased which is attributed to an increase in surface friction but is independent of the adaptable coating thickness.

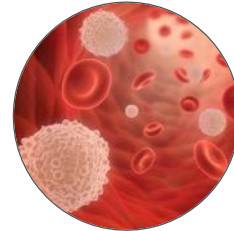


*A 5 nanometer coating that mimics the outside of a cell.*



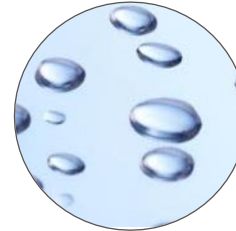
### ANTI-FOULING

- Bacteria
- Fungi
- Proteins
- Small organics



### BIO-COMPATIBLE

- PFAS free
- ISO-10993 compliant
- Non-thrombogenic
- Safe-by-Design



### HYDROPHILIC

- Improves **wetting**
- Improves **lubricity**
- **Regeneration**
- Custom chemistry



### PROCESS

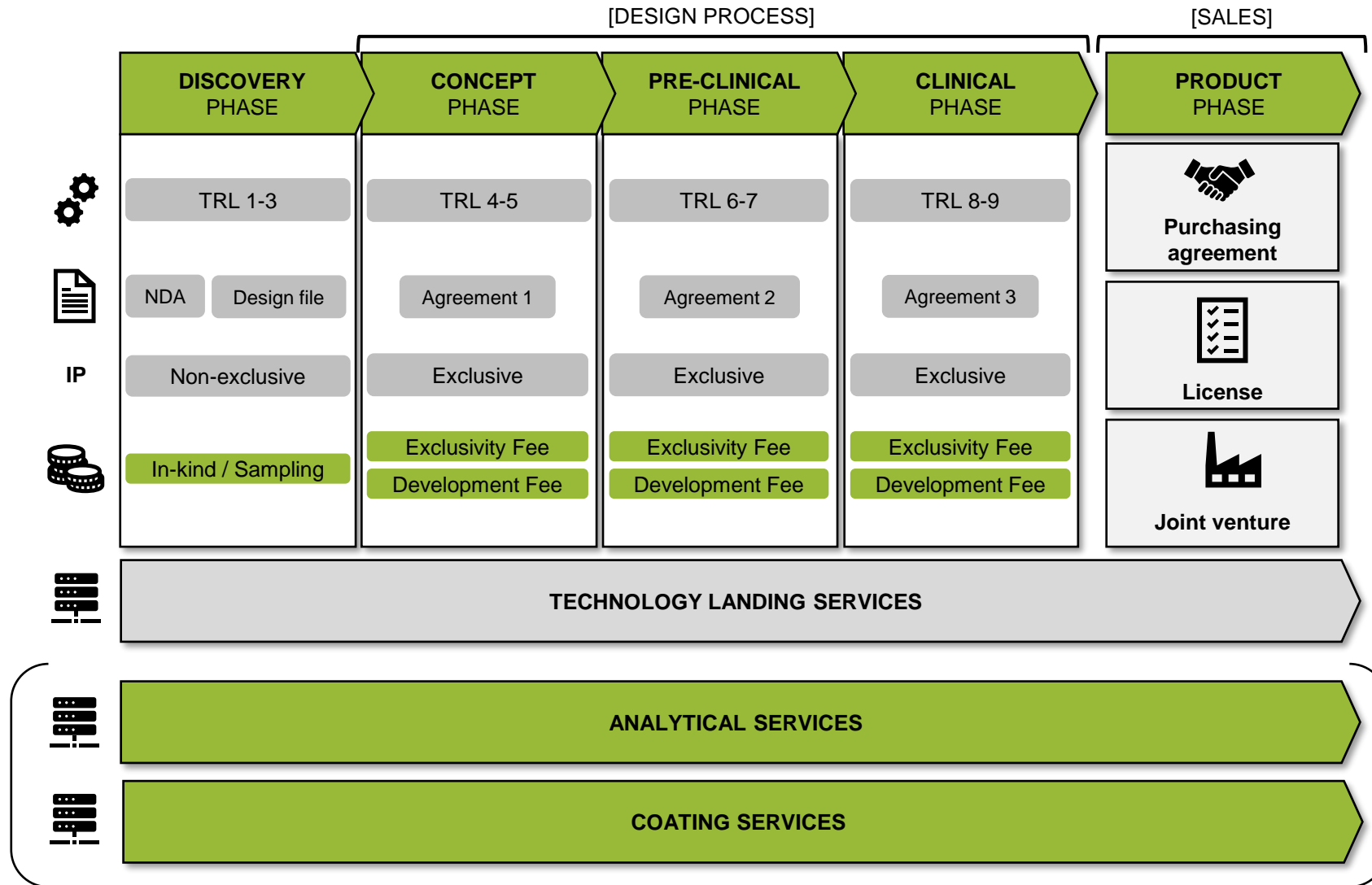
- Dip coating
- Self-assembly
- No flaking
- No leaching



### PRODUCTION

- Low cost
- Universal
- Scalable
- Non-animal based







PRODUCT GROUP	PRODUCT	INDICATION	DISCOVERY PHASE	CONCEPT PHASE	PRE-CLINICAL PHASE	CLINICAL PHASE	PRODUCT PHASE
<b>DEVELOPMENT PROGRAMS</b>							
<b>Eye application</b> Internal brand 24Eyez	Coating for RGP contact lenses	Contact lens discomfort/safety					
<b>Eye application</b> Internal brand 24Eyez	Coating service RGP contact lenses	Contact lens discomfort/safety					
<b>Eye application</b> Internal brand 24Eyez	Coating for SiHy lenses	Contact lens discomfort/safety					
<b>Eye application</b> Internal brand 24Eyez	Additive multi-purpose LCP	Contact lens discomfort/safety					
<b>Eye application</b> Internal brand 24Eyez	Eye Spray	Dry eye Hayfever					
<b>Catheter application</b> Internal brand LipoCath	Coating CVC catheters	CLABSI/CRBSI prevention					
<b>Catheter application</b> Internal brand LipoCath	Coating Foley catheters	CAUTI prevention					
<b>Coating kit application</b> Internal brand BioDesign	Coating kit for cell culture devices	Drug screening Organoid formation					
<b>DISCOVERY PROGRAMS [grant projects]</b>							
<b>Therapeutic NPs</b> PPP-project	Coated oxygen generating NPs	Traumatic brain injury					
<b>Immune modulating NPs</b> DIRNANO-project	Core-coat NPs	Cancer therapy vaccines					
<b>Implant coating</b> BIBRA-project	Biofunctional implant coating	Breast reconstruction					
<b>Novel eye spray</b> MIT-project	Eye spray	Dry eye Hayfever					
						<b>CVC</b> Central venous catheter <b>RGP</b> Rigid gas permeable contact lenses <b>LCP</b> Lens care product <b>SiHy</b> Silicon hydrogel soft contact lenses <b>NPs</b> Nanoparticles	

