

TNO SPIN-OFFS IN THE SPOTLIGHT

TECH TRANSFER PROGRAMME 2020

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› **TNO.NL**



› FOREWORD

In 2017 TNO started the Tech Transfer programme with the aim of accelerating the transfer of TNO innovations to the market, thereby enabling these innovations to be of use to society and industry. The Tech Transfer programme has proven successful over the past three years: six companies were founded in 2017, eight in 2018 and six in 2019. This report outlines the spin-off stories over the past three years.

We are proud that the market is embracing our innovations, both in the Netherlands and worldwide. This is all about state-of-the-art technology that can take society forward. Think of a new method of preparing patients for an operation that allows them to recover faster or an innovative battery that allows electric cars to travel significantly further on a single charge. These are just a few examples of how the Tech Transfer programme stimulates Dutch business and industry, creates new jobs and contributes to the Sustainable Development Goals.

In this issue, we present nineteen promising young companies, all born out of applied research by TNO and most of them founded by passionate TNO employees. You can read more about the Tech Transfer programme and the spin-offs we are preparing on our website: techtransfer.tno.nl.



› HANS BOUMANS

DIRECTOR TNO TECH TRANSFER

An important goal of TNO is turning innovative research into application. The Tech Transfer programme, launched in 2017, contributes to this goal by developing business cases and business plans. As a result, as many as twenty new companies have been established within three years. And there are many others in the pipeline.

“Getting technology to the market has always been in our DNA. We are now much more focused than ever on creating new companies” says Hans Boumans, director of Tech Transfer at TNO. “We actively involve investment funds, regional development companies, incubators and other parties who can play a useful role in this. And it’s nice to see how an innovation that starts out in one of our labs can lead to a successful company in a relatively short period of time.”

RAPID GROWTH THANKS TO MILLIONS IN INVESTMENTS

Some start-ups are growing very fast, such as Nearfield Instruments in Rotterdam. Just a few years ago, the technology developed by a few TNO employees served as a showcase in TNO’s Annual Report. Now, thanks to a multi-million euro investment from Samsung’s investment division and the Dutch investment fund Innovation Industries, the young company already employs fifty-one people. In addition, dozens of people are working at their partners on co-developing equipment for the semiconductor industry. This equipment will enable us to monitor the production processes of the latest generation of chips at the highest level.

SOLVING SOCIETAL ISSUES

“The great thing is that the start-ups and propositions that are still in an early phase all originate from TNO technology intended to solve societal issues in areas such as the energy transition or new communication technologies. We kill two birds with one stone this way. The new companies help society to move forward and create new jobs. In addition, they put our country on the map as a creator and supplier of innovative products. Our high-tech industry has to lead the way here, otherwise we will lose ground to Asian countries – with all of the consequences for the economy that this entails,” says Hans Boumans.

PROMISING INNOVATIONS

The Tech Transfer programme ensures that innovations that would otherwise find it difficult or impossible to make their way to the market are now able to attract investors. This is thanks to thorough preparation and an extensive network of potentially interested parties. “Every spin-off that we create and in which an investor invests is something to be proud of. It shows the impact that we at TNO have achieved and is the ultimate proof that we’ve created and developed something that the market has really been waiting for. We have wonderful, promising innovations in which business and industry can participate as a partner or an investor.” ■



› TECH TRANSFER BOARD

The Tech Transfer Board reviews new proposals and approves the process towards establishing new spin-off companies. The Board consists of TNO members Cis Marring (chair), Arnaud de Jong, Ton de Jong, Richard Roodenburg, Berry Vetjens and Hans Boumans, and external members as presented below.



Michel van Bremen
First Dutch Innovations

“With TNO being a minority shareholder in First Dutch Innovations (which took over TNO Companies at the end of 2017), we naturally have a special relationship, although we operate completely independently. As a sparring partner on the Board, I mainly look at propositions from an entrepreneurial point of view. The great thing about Tech Transfer is that it stimulates the entrepreneurial spirit within TNO. Bringing technology to the market is always a challenge, but I see a stream of beautiful gems with great potential to grow into products that will help society move forward.”



Liduina Hammer
InnovationQuarter

“At InnovationQuarter with our investment fund UNIIQ we’re focused on bringing innovations to the market more quickly. By working together on the Tech Transfer Board of TNO, we strengthen one another. As an investor, you look at propositions from a different perspective. I bring in knowledge of the market and a relevant network, and together we look at which parties may be interested in investing in certain spin-offs. It’s great to see that Tech Transfer has already produced nineteen new companies and a multitude of promising propositions in a relatively short period of time.”



Radboud van Kleef
RXB International

“As an external member of the Board, it’s your task to advise the Tech Transfer team on the business potential of various new technologies. TNO has a lot of expertise, but welcomes the perspectives of expert outsiders. These experts also look at the economic and social side of an innovation. We have already assessed a series of promising initiatives in all sorts of areas. Overall, my advice to TNO is: think multi-dimensionally, think bigger and think about what value you create for whom and why.”



Harm de Vries
Innovation Industries

“The Technology Transfer team fulfils an important role in determining the potential impact of the intellectual property developed by TNO. Using a great deal of expertise. The team is also responsible for making the propositions investor-ready. With Innovation Industries, we have invested in two promising start-ups: Nearfield Instruments and SALDtech. Without the Technology Transfer team’s preparation of the investment propositions and the active support of the investment process, we would never have realised this the same way.”



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3D PRINTING
MUCH FASTER



 **AMS SYSTEMS**



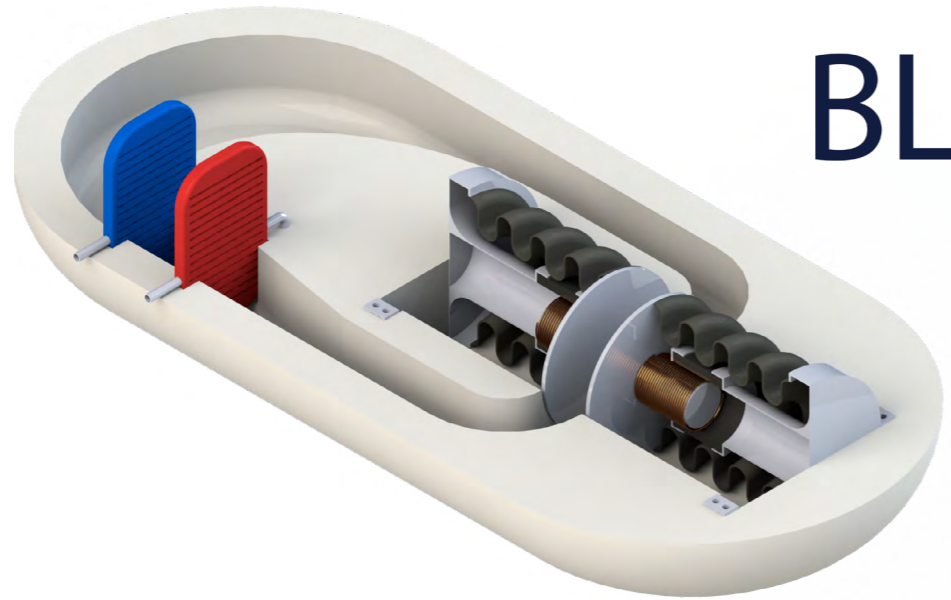
› PRIOR PREPARATION ENABLES
FASTER RECOVERY
FROM SURGERY



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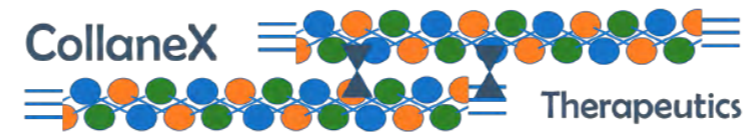
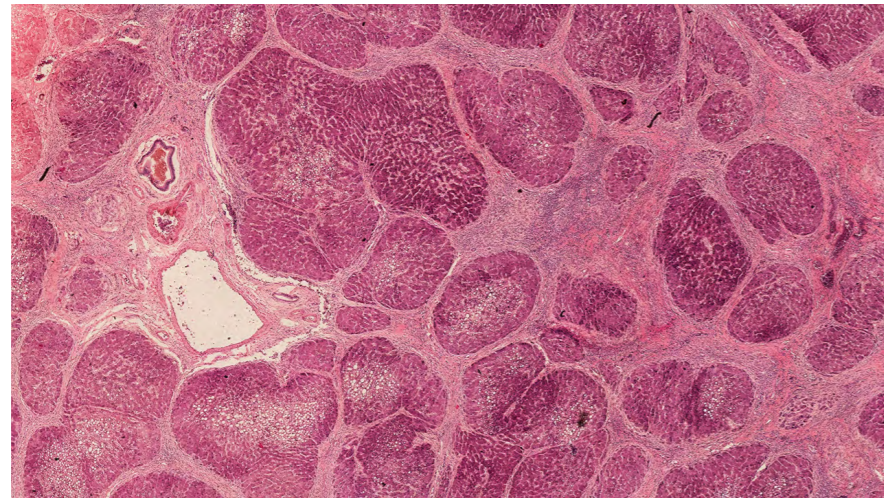
› SUSTAINABLE AND AFFORDABLE HEAT PUMP ON ITS WAY



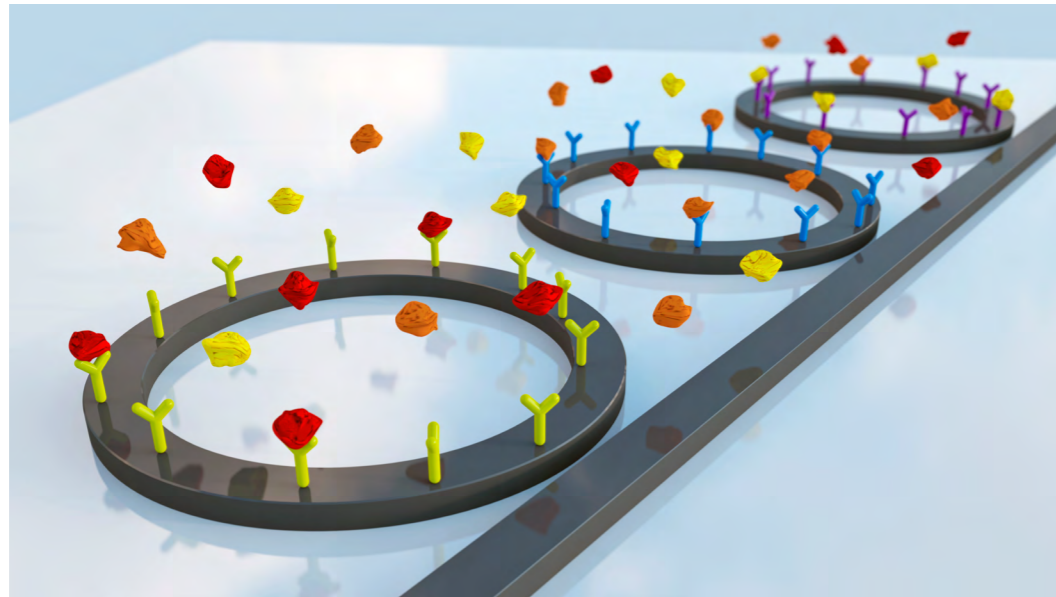
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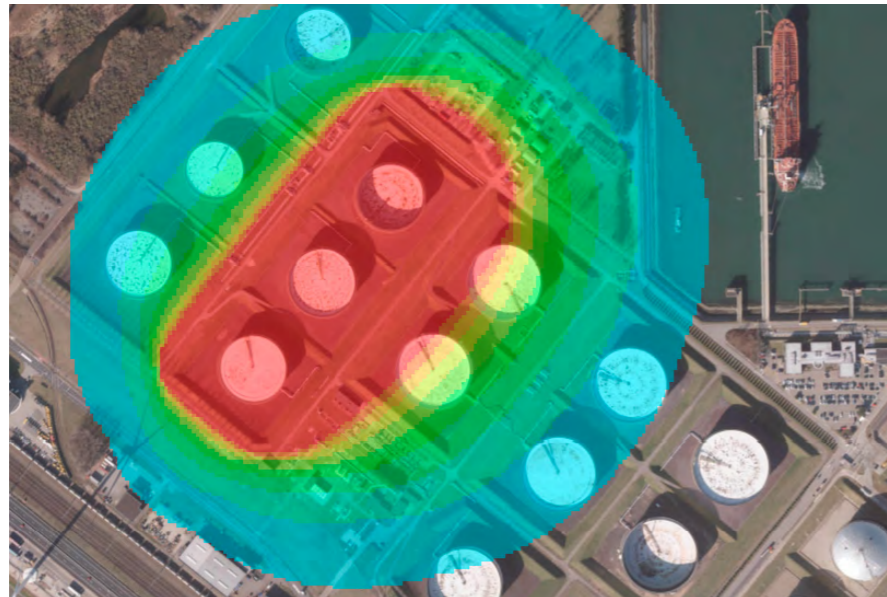
› HOPE FOR NEW DRUG TO TREAT
LIFE-THREATENING
FIBROSIS



IDENTIFYING DISEASE
QUICKLY AND CHEAPLY



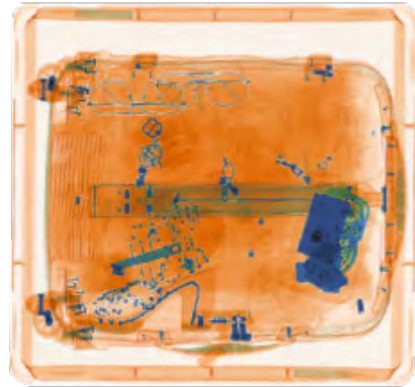
› SAFETY SOFTWARE:
INSIGHT INTO RISKS



GEXCON



› FASTER AND SAFER
SECURITY CHECKS
AT AIRPORTS



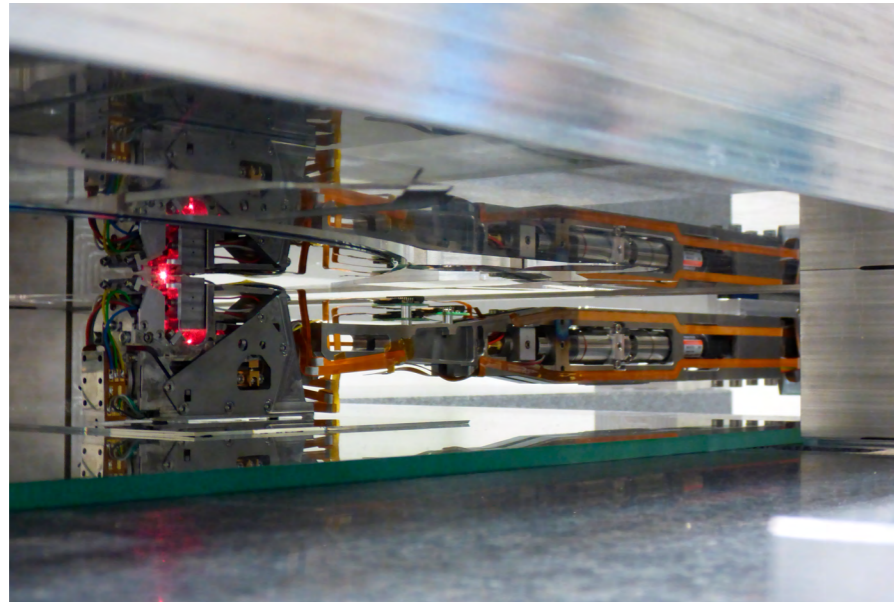
› NEW TYPE OF BATTERY ENHANCES THE
ENERGY TRANSITION



LEYDENJAR
TECHNOLOGIES



› WORLD LEADER IN
**MEASUREMENT
METHODS**
FOR CHIP MANUFACTURERS



N NEARFIELD
INSTRUMENTS



› NEW TECHNIQUE FOR MANUFACTURING
FOLDABLE DISPLAYS

SALDtech



› EARLY DETECTION

OF STRUCTURAL DEFECTS WITH SENSORS



› INNOVATIVE SOLUTION PROTECTS AGAINST
CYBER-ATTACKS



 **sightlabs**



› SOLAR PANELS WITH FACADES

IN ALL SHAPES, SIZES AND COLOURS



› ROAD NETWORK TO PRODUCE MORE AND MORE
ELECTRICITY



› VIRTUALLY ATTENDING

A MATCH OR CONCERT AS IF YOU WERE REALY THERE



TURNING ORGANIC WASTE INTO
VALUABLE PRODUCTS



TORWASH 



› THE COMFORT OF BEING SURE:

VALIDATING CORRECTNESS INSTEAD OF SHARING ONLINE INFORMATION



 TrustTester



› OPTO-MECHANICAL SYSTEMS

DEVELOPED TO THE NEXT LEVEL

valleyoptics



› FACTS AND FIGURES

2017 - 2019



60

NUMBER OF TECH
TRANSFER CASES



20

SPIN-OFFS



5

(TNO: 77)

LICENSES TO
EXISTING COMPANIES



€ 37M

ACQUIRED CAPITAL



128

JOB'S CREATED
BY SPIN-OFFS



› TECH TRANSFER TEAM



From left to right

Vic Paulissen, IP & Contracting
Steven van Dijk, Corporate Legal
Eddy Zwier, Tech Transfer
Marc Knijnenburg, Corporate Real Estate & Facilities
Hans Boumans, Tech Transfer
Joyce Uijlenbroek, Human Resource

Stefan van der Ploeg, Tech Transfer
Rolph Segers, Tech Transfer
Helene Tuit, Tech Transfer
Kelly Ackermans*, Tech Transfer
Nathalie van der Put*, Marketing & Communications
Paul ten Hout*, Control Unit Industry

**Recently added to the team (not in the picture)*



