

## ASX ANNOUNCEMENT

ASX Code: DTZ

13 December 2018

# COMPANY PRESENTATION CEO – AUSTRALIAN ROADSHOW

**Dotz Nano Limited (ASX: DTZ)** (“Dotz” or the “Company”), a technology company focusing on the development, manufacturing and commercialisation of graphene quantum dots (GQDs).

Please find attached a copy of a presentation made by the CEO, Mr Uzi Breier on his Australian Investor Roadshow.

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### FOR FURTHER INFORMATION:

*Company Secretary*

Ian Pamensky

[ian@cfo2grow.com.au](mailto:ian@cfo2grow.com.au)

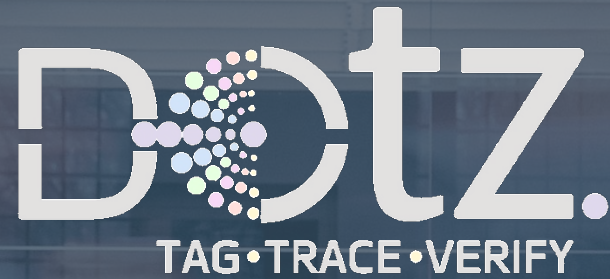
+61 (0) 414 864 746

### About Dotz

Dotz Nano Limited (ASX: DTZ) is a technology leader in research, production and marketing of anti-counterfeiting, authentication and tracing solutions. Dotz has strong, established distributors in North America, Europe, Japan, China and Australia as well as scientific collaborations and partnerships with leading academic institutes.

Its unique products, ValiDotz™, Fluorensic™, and InSpec™ are exceptional solutions for numerous applications, such as: Anti-counterfeiting, Brand & Reputation Protection, Oil & Gas Industry, Liquids Tagging, Lubricants and DEF authentication, Polymers Tagging and Bio-Imaging.

To learn more about Dotz Nano please view the website and our corporate video via the following link: [www.dotz.tech](http://www.dotz.tech)



*Unique Security and Tracing  
Solutions  
from Non-Toxic Carbon  
Sources*

*Company overview*

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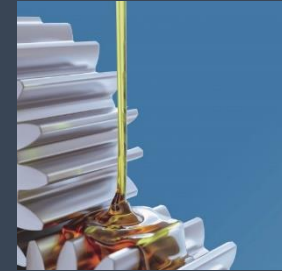
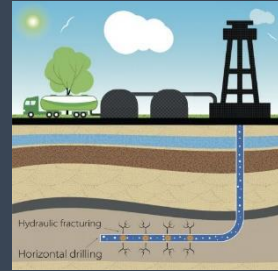
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# About Dotz

- Public company (ASX : DTZ). IPO – Nov 2016, raised A\$6M @ 20 cents (total A\$13M raised)
- Original patents from RICE University (Houston Texas, prof. James Tour) and additional IPr – 5 wide (pending) patents in various area (Marking for Oil & Gas industry, Detection methods for devices, Production methods)
- R&D Center in Israel – 10 PhDs and research assistants, unique mix of expert Chemistry and Materials science professionals
- Sales/Distribution offices – UK, US, China, Japan, Switzerland
- Industrial manufacturing facilities in the USA and in Germany. Collaborations in Switzerland, Germany and Australia.



## Our Mission

Dotz combines security-markers with exceptionally sensitive proprietary mobile detection units, to offer end-to-end customized-security and tracing solutions for Lubricants, Plastics and for the Oil & Gas industry.

# The Team

**Uzi Breier**  
CEO



**Dr. Volker Mirgel**  
CHAIRMAN



**Dr. Michael Shtein**  
CTO



**Avigdor Kaner**  
VP BUSINESS DEVELOPMENT



**Tomer Segev**  
CFO

# *The technology has many Potential Applications*

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DISPLAYS



BIO IMAGING



OPTO  
ELECTRONICS



Tagging  
& Tracing

# Ready-2-Market Products/Solutions

## Unique Markers

### Validotz™

Tagging & Authentication  
(Product liability,  
anti-counterfeit)

### Fluorensic™

Bulk liquid Tracing  
Solutions



## Customization into the product

### Oil & Gas



### Lubricants



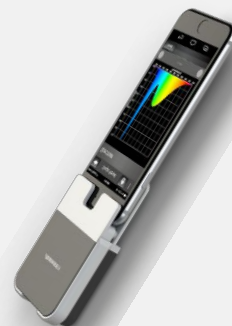
### Plastic



## Sensitive and Portable Detectors

### InSpec™

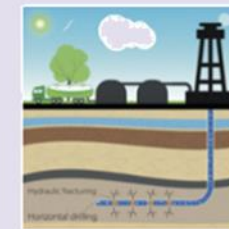
Forensic & Semi-Forensic  
Detection  
(Real-time, on site)



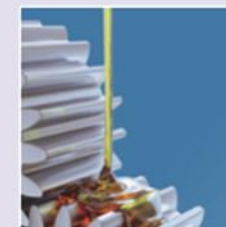
## Applications



Packaging



Tracing frac fluids



Lubricants



Agrochemicals tagging



Polymer tagging



Crude oil and gas



# *Dotz Focus Areas – End to End solutions in tagging and tracing*

## Protecting Plastics →

- Penetrating into the plastic
- On-site/Real-time Authentication
- No effect on the plastic

**First deal to mark doping test tubes – advanced negotiations**

## Protecting Lubricants →

- Only known existing solution to Penetrate into the oil
- No impact on oil properties
- On-site/real time

**First deal marking base-oils & greases -advanced negotiations**

## New Tracers for Oil & Gas →

- On-site real-time field detectors
- Stable under high-pressure/Temp

**First deal – Tagging Oil wells in N.America-advanced negotiations**

# Inspec<sup>TM</sup> – Detection Options

## Semi- Forensic



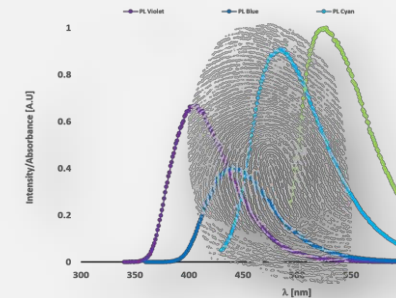
Pattern and color recognition on printed surfaces, packages, and in bulk liquids.

## Forensic Dilution



Custom made to Dotz materials  
Validation and QA

## Forensic Coding

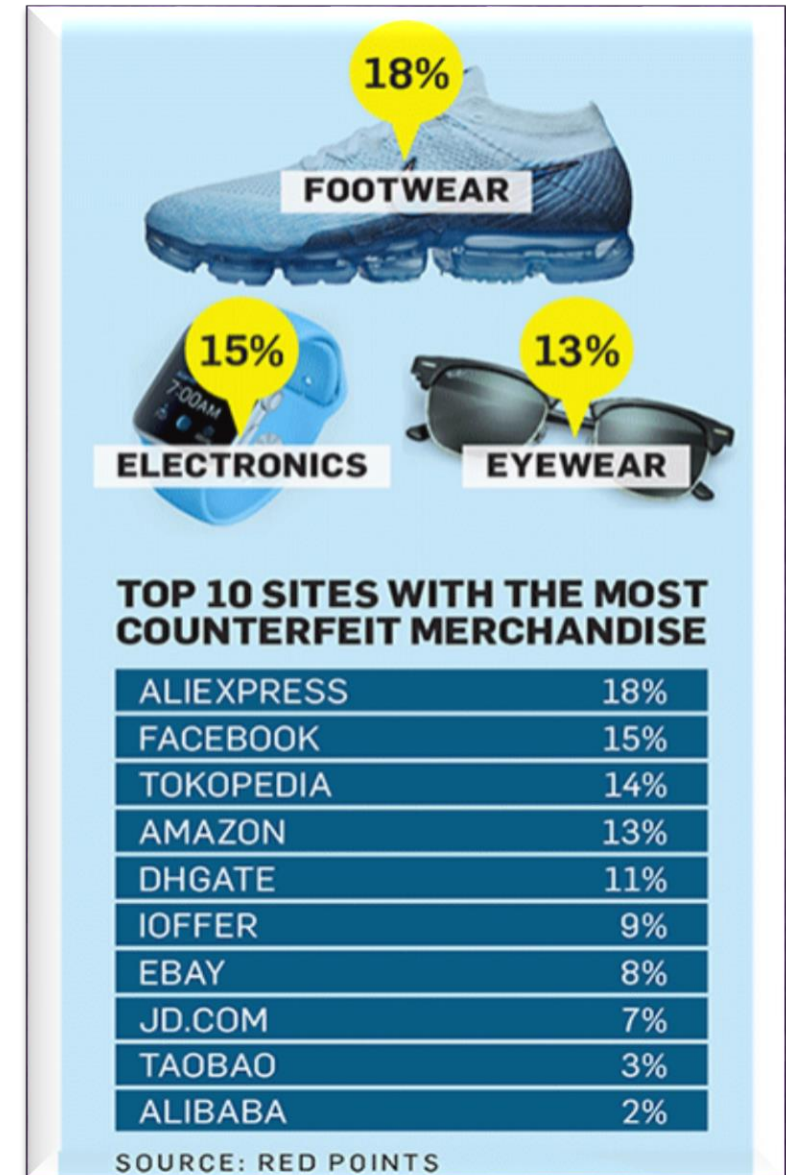


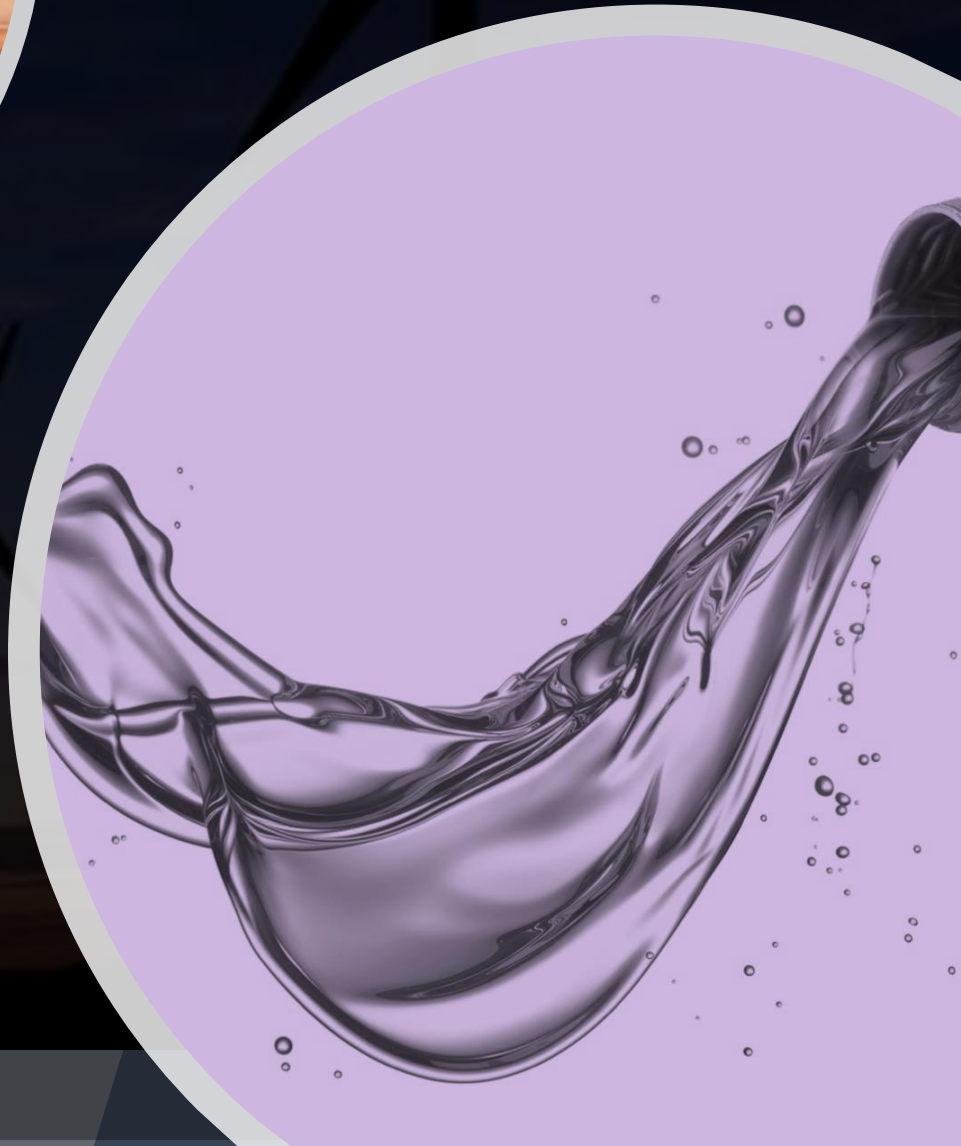
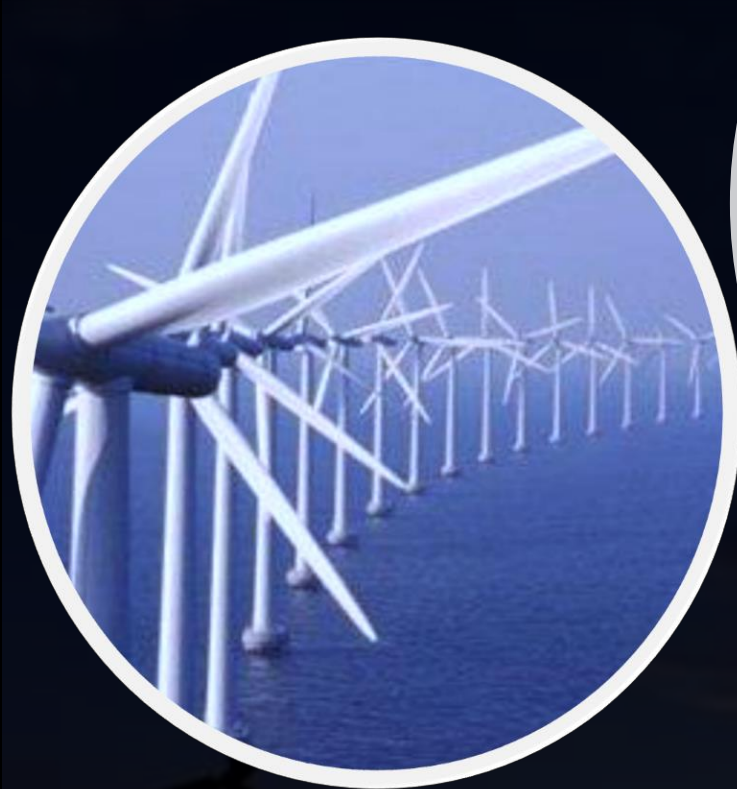
Field fluorimeters  
Tablet or mobile phone interface  
Ultimate security and validation

# Counterfeiting & Liability

## A major worldwide plague

- \$2.2 Trillion. 15% of GDP
- 1 Million people die every year from consuming counterfeited medicine
- Destroy brands and IPR
- Dangerous
- Child labor & abuse
- Most solutions rely on outside stickers – easily removed
- **Dotz offers a fresh, bio/green and economical solution**





# *Protecting Lubricants*

*The global lubricants market  
size is expected to reach  
\$166.25 billion by 2025*



# Protecting Lubricants – Security layers

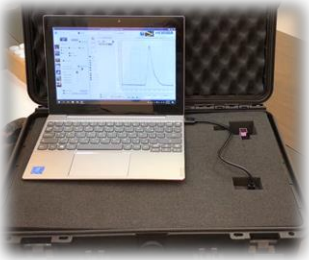
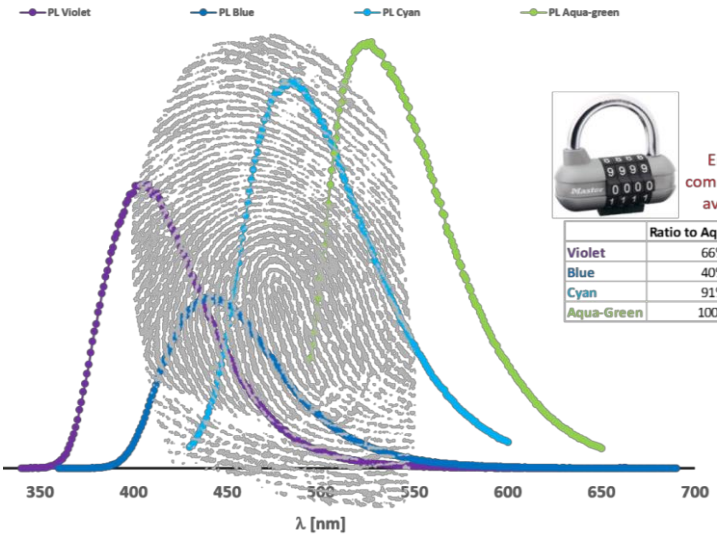
Printed and plastic features

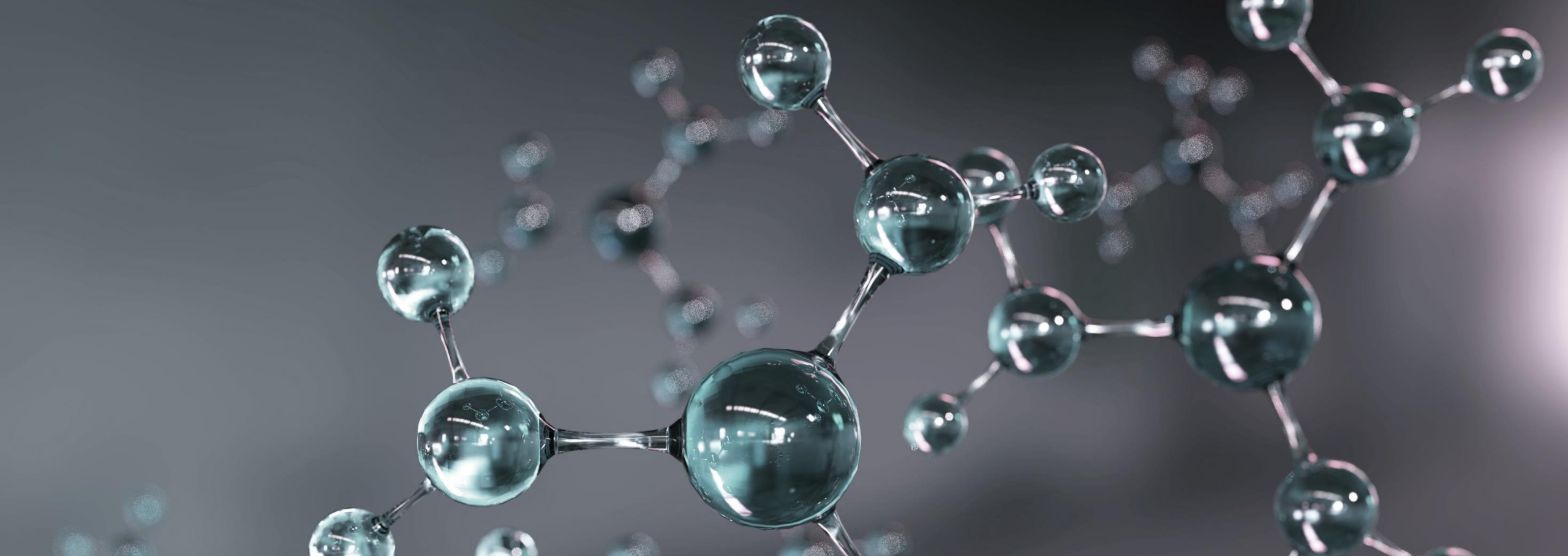


Dilution sensitive marker



Product specific codes



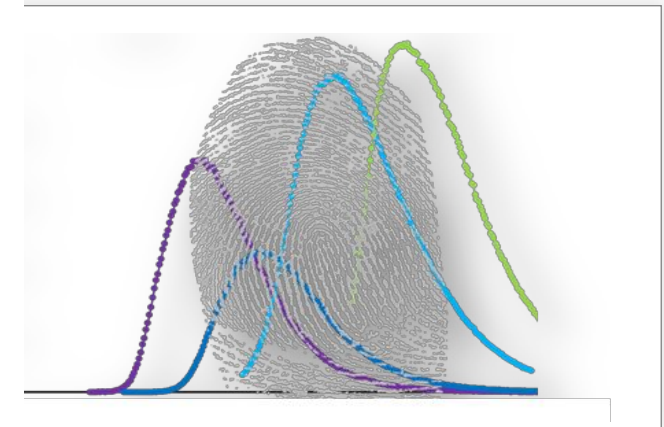
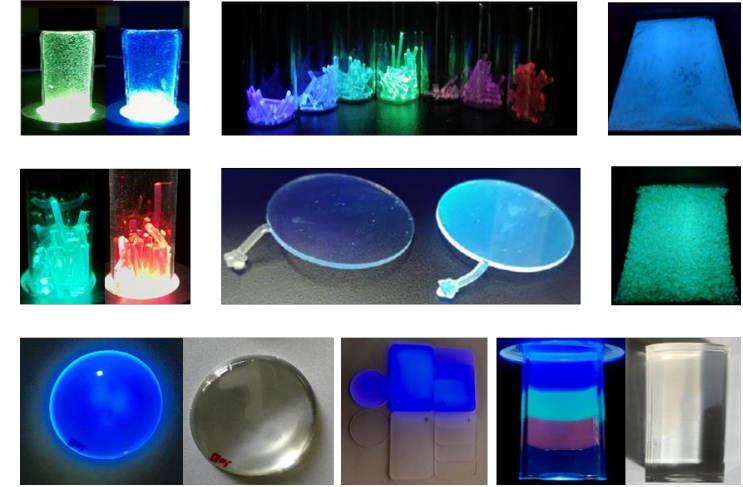


*Protecting plastics*



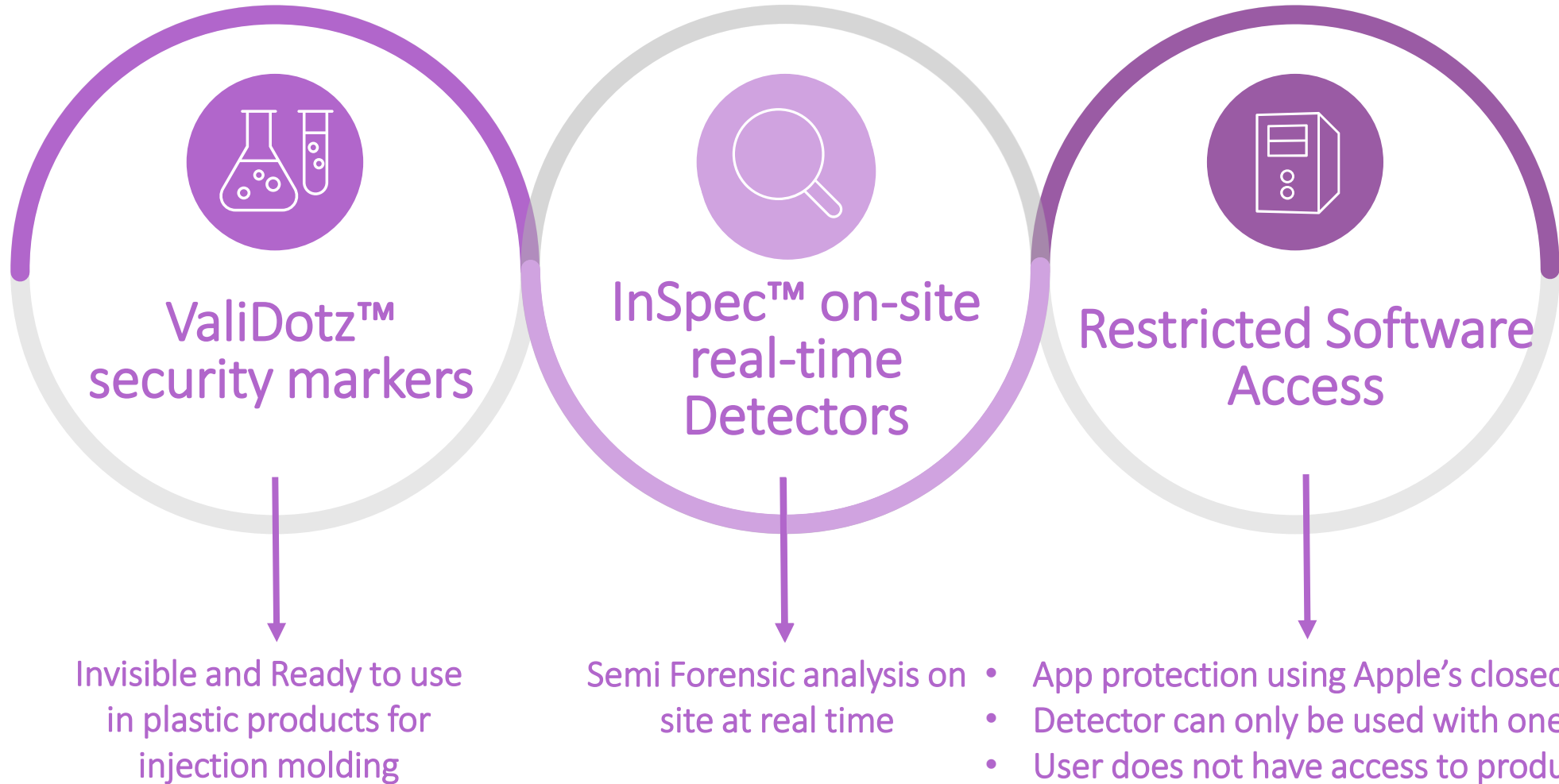
# Protecting Plastics

- Unique security markers for multiple color caps
- Image recognition algorithm
- Real-time, On-site Authentication





# ValiDotz<sup>TM</sup>: *Securing products end-to-end*



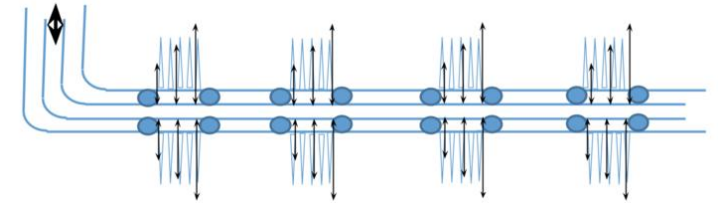


*Fracking Tracers*



# Tracers used with Fracking Fluids

- 13,000 fracking wells in North America alone. **Average cost per well is \$7M → \$90 Billion investment**
- Using tracers in enhanced and unconventional oil recovery has the potential to improve by 20% the production efficiency
- The number of segments in horizontal wells keeps growing to increase productivity - hence more and more tracers are needed



- **STABLE AND ROBUST** Fluorensic™ maintain their properties even after being **exposed to elevated temperatures (400 F), pressure and chemicals**
- **SAFE** Fluorensic™ markers are manufactured from **carbon sources only**, and contain no **radioactive materials or toxic metals**
- **ON SITE** Fluorensic™ markers are detected on-site, saving time and money

# *Fluorensic™ : Innovative oilfield tracers with on-site detection*



New and Robust set of tracers for the oil industry

Results are received on-site saving time and money

- Dotz Tracers do not contain metals or radioactives
- Save money in treating frac fluids
- Environmentally responsible

# Tagging and Tracking Case Study -Fracking



# Successful Pilot - Fracking



## Client

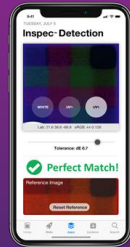
- Leading provider of tracer markers in N. America
- Each well requires 1.6 Million liters of frac fluid for each marker used – typically 10-20 markers or more are used in each frac Job

## Results

- Fluorensic™ was easily mixed with the frac fluid and injected into the ground
- Our markers gave a strong signal after 2 months in the ground – can provide data for months & years
- Dotz real-time on-site detection system Inspec™ was demonstrated and found very effective
- The combination of a new generation of ultra-sensitive and durable markers, together with real-time detection is highly attractive to the industry

# *We are just about there*

Advanced negotiations to secure doping tests  
- Switzerland -



Advanced negotiations to tag premium grease and oils - USA -



Advanced negotiations  
Carbon based oilfield tracer materials and solutions  
-USA-



# *Looking forward in Australia – Bioimaging*

- Dotz has initiated a collaboration with the school of pharmacy in Monash University, Melbourne
- Target: develop novel, metal-free Bioimaging agents
- Merck life sciences has expressed interest in commercializing these materials and is involved in the development

## Monash University and Dotz will partner in R&D of new bio-imaging technologies

Dotz Nano Ltd. is pleased to announce that a collaboration agreement was signed today with Monash University of Melbourne, Australia.

As a part of this agreement, Dotz and Monash will collaborate to develop and commercialise advanced multi-purpose carbon-based materials as next-generation bio-imaging agents for various research and preclinical uses such as cancer tracing. Due to their unique properties and low toxicity, this family of advanced carbon materials holds great potential to compete and replace expensive and toxic quantum dots currently in use in this field.



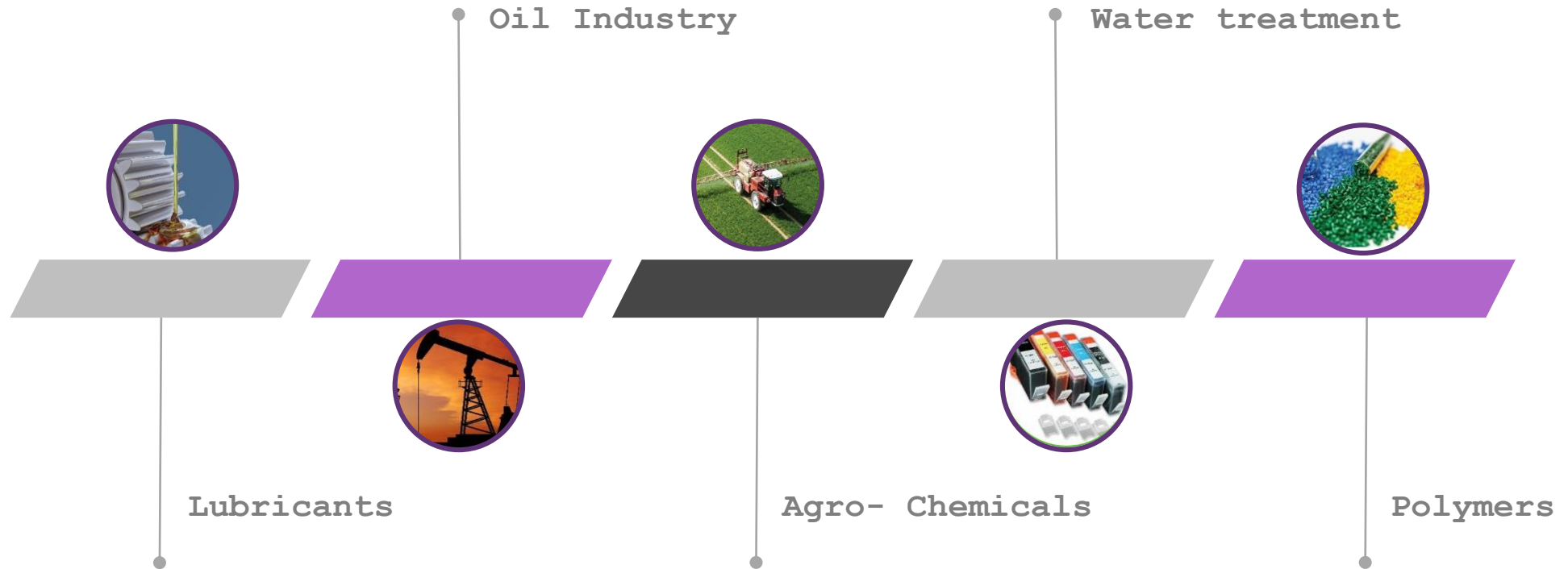
MONASH  
University

Dotz.

MERCK

M  
MILLIPORE

# Questions?



**NOW ALL THAT IS LEFT TO DO IS TO CONNECT THE DOTZ**



## Uzi Breier

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