



**Imagion Biosystems  
Limited (ASX:IBX) -**

**AGM PRESENTATION  
28<sup>TH</sup> MAY 2021**

[www.imagionbiosystems.com](http://www.imagionbiosystems.com)

# Imagion Biosystems – at a glance



*New medical imaging technologies for the early detection of cancer*

## Imagion Biosystems ASX:IBX

Australian Medical Device Company developing bio-safe medical imaging technologies.

Market cap: ~\$135.3 million

Cash at 31 Mar 2021: \$13.007 million

R&D operations: San Diego

Registered office: Melbourne

### Recent Milestones:

#### May 2021

First patient enrolled in Phase I breast cancer study

#### Apr 2021

Brain cancer collaboration with Patrys

#### Mar 2021

CSIRO Grant to fund prostate cancer collaboration with Monash University

#### Nov 2020

\$6 million placement

#### Oct 2020

HREC approval received for Phase I Study

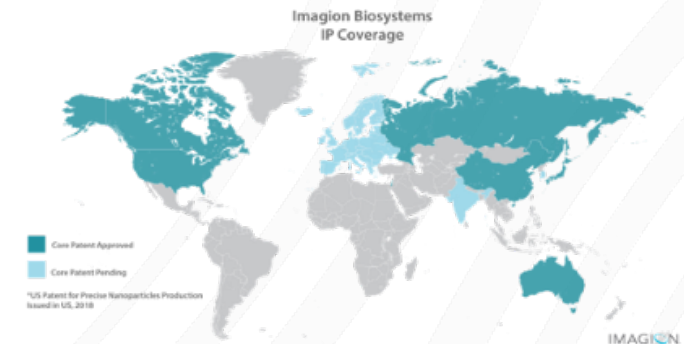
#### May 2020

Research Collaboration with Siemens

#### July 2019

Received “**Breakthrough Device**” designation by U.S. FDA

- Innovative **medical imaging** using **magnetic nanoparticles** to identify and stage cancer early
- **Proprietary** MagSense® technology is **non-invasive** and provides more specific & sensitive detection for cancer than current imaging technologies
- **Multiple commercial opportunities:**
  - Proprietary MagSense® imaging technology
  - Magnetic Resonance Imaging (MRI) contrast agent
  - Therapy and/or drug delivery
- MagSense® technology **complements existing imaging** and is more cost effective than many existing imaging technologies
- **First-in-human** studies initiated in Dec 2020 – targeting metastatic breast cancer



Patents are already issued, or are pending, in all the major markets, making the lions share of the global markets available for commercialization.

**Patents are valid through 2029.**

# MagSense® - A new approach to medical imaging



*Imagion's technology will transform cancer diagnosis*

- **Non-invasive** – a safe and non-surgical solution to detect cancer
- **No radioactivity** - uses bio-safe magnetic nanoparticles to “tag” cancer cells
- **Platform technology** – can be used for many cancers as well as other diseases, *e.g.* infection and cardiovascular
- **Proprietary** - patents issued in most major global markets
- **Breakthrough** - technical feasibility and safety profile vetted, designated as a “Breakthrough Device” by FDA
- **First indication** – metastatic breast cancer, provides shortest path to commercialization
- **First-in-human** – initiated first clinical study - a catalyst for valuation and partnering



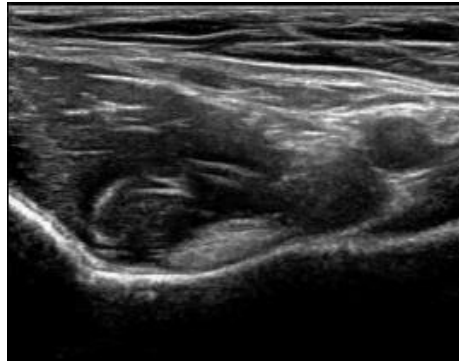
# Clear unmet medical need

50 years since last new imaging technology was introduced



**X-RAY  
(MAMMOGRAPHY)  
1913**

- Best used for finding structural anomalies (e.g. broken bones), and chest X-rays
- Mammography used for screening for breast cancer
- Risks include exposure to carcinogenic ionizing radiation



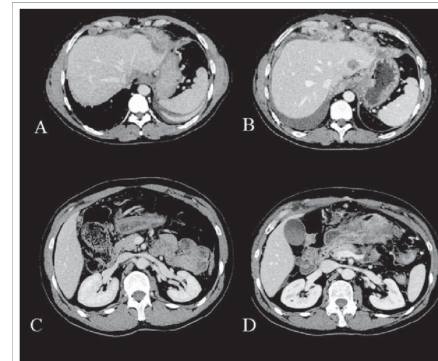
**ULTRASOUND  
1956**

- Inexpensive and fast method to look at human organs and areas of inflammation
- Used to guide needle biopsies and detect ovarian cancer
- Poor sensitivity to detecting tumors – tumours must be billions of cells in size



**MAGNETIC RESONANCE (MRI)  
1971**

- Best for imaging soft tissue including ligaments, tendons, the brain, and many internal organs
- Used for detecting brain cancers
- Scans can be long and claustrophobic



**COMPUTED TOMOGRAPHY  
(CT)  
1972**

- Better for imaging the lungs than MRI
- Scan times shorter than MRI
- Used in staging solid tumors, guiding biopsy
- Exposes patients to carcinogenic ionizing radiation



**POSITRON EMISSION  
TOMOGRAPHY (PET)  
1973**

- Can be expensive and poorer resolution than MRI or CT
- Better sensitivity for identification of metastatic lesions
- Subject to significant off-target and high background signals
- Requires use of radioactive tracer exposing patients to radiation

***“Despite technical advances in many areas of diagnostic radiology, the detection and imaging of human cancer remains poor.”***

Journal of Clinical Oncology, 2008 New Technologies for Human Cancer Imaging Vol 26 No 24

# Broad Commercial Applicability

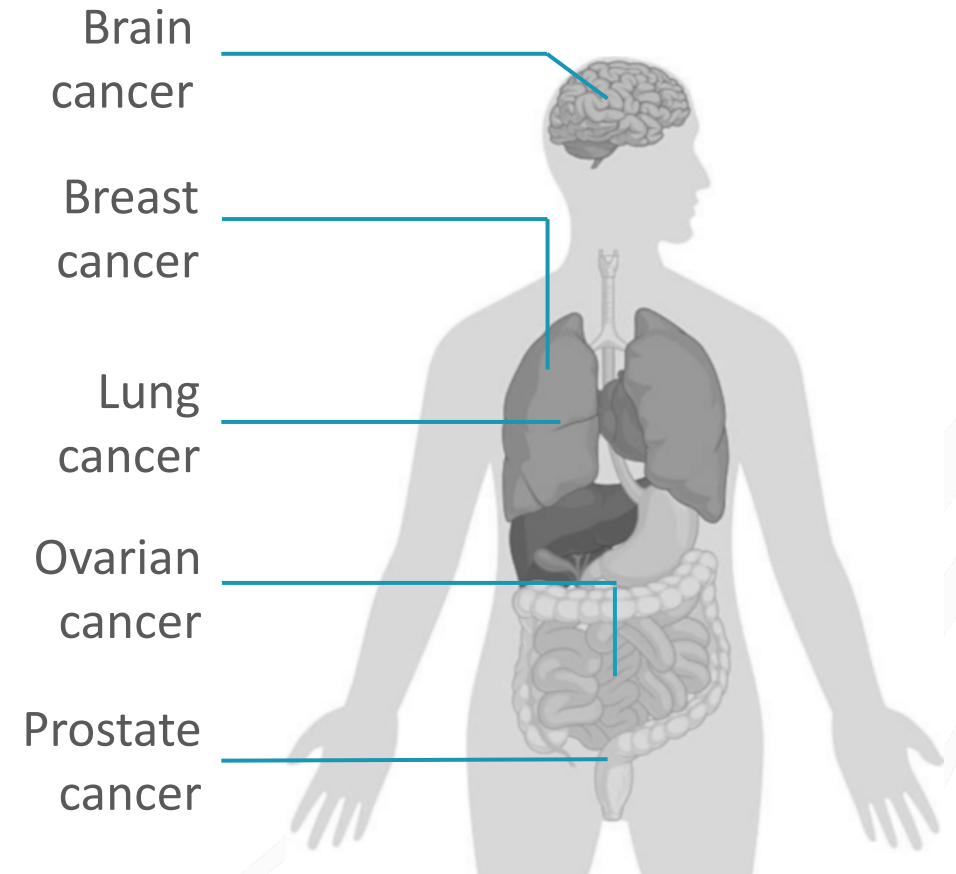
*May be used for many types of cancer and at multiple stages of diagnosis*



## MAGSENSE® NANOPARTICLES

- Are bio-functionalized to ensure high specificity for targeting different types of cancers, or other diseases.
- Can be used at multiple stages including primary diagnosis, staging, and monitoring the effectiveness of therapy.
- Are compatible with Imagion's proprietary MagSense® technology and with existing installed MRI systems as an MRI contrast agent.
- Uses known safe materials, including iron-oxide cores which are already cleared for multiple clinical uses including therapeutic applications.

## MULTIPLE CLINICAL TARGETS





# 2020-2021 Key Achievements



## ***MagSense® enters the clinic***

- HREC approval for Phase I study in Australia
- Collaboration with Siemens Healthineers adds exploration of MRI utility
- MagSense® imaging agent manufacturing for study completed
- Monash Health signed as first clinical site
- Study open for enrolment in Dec 2020
- ***First patient enrolled***

## ***Technology pipeline advancements***

- University of Sydney research demonstrates utility of IBX nanoparticles with ultra-low field magnetic resonance imaging (ULF MRI)
- Boston University collaboration explores next generation magnetic sensors to enable doctor's office platform
- \$50k CSIRO grant kick-starts prostate cancer research with Monash University
- Collaboration with Patrys (ASX.PAB) targets brain tumour imaging

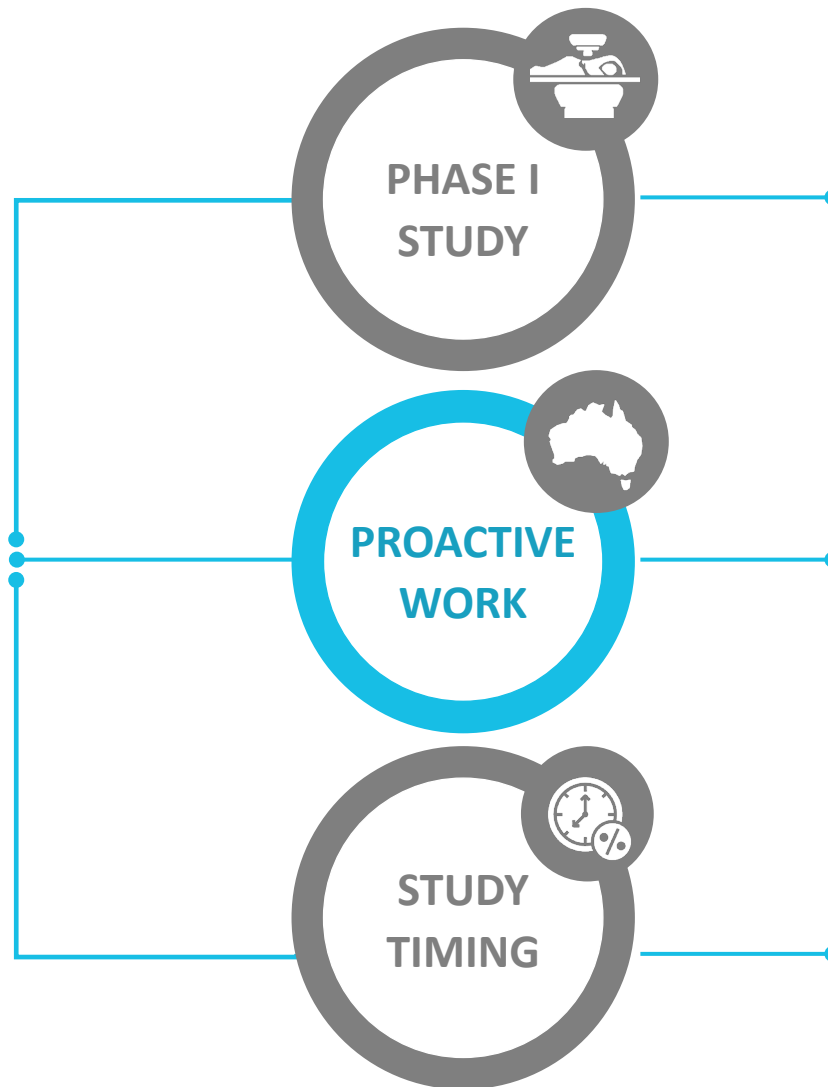
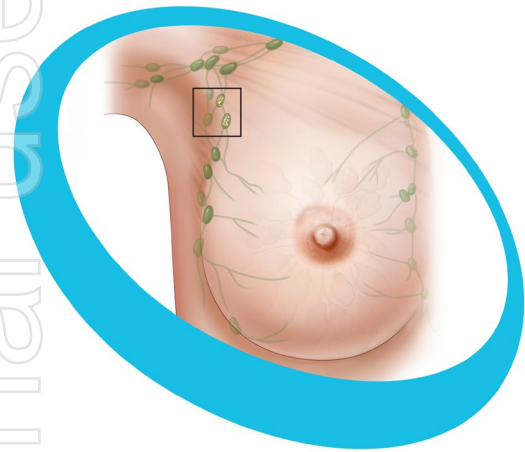
## ***Corporate Milestones***

- \$14.8 million funds raised
- \$2.2 million R&D Tax Refund
- Appointment of Dianne Angus to Board of Directors
- Appointment of Geoff Hollis as CFO and Company Secretary (based in Melbourne)

# Study Update

A first-in-human study of a targeted MagSense® imaging agent

PHASE I  
INVESTIGATIONAL STUDY OF A  
NOVEL IMAGING AGENT FOR NODAL STAGING OF  
**HER2 BREAST  
CANCER**



01

- **First Patient enrolled**
- Multiple sites actively screening patients
- Study aims to assess safety, tolerability, and potential effectiveness of the MagSense® imaging agent

02

- Added Clinical Operations personnel in Australia
- Expanding clinical sites nationally to access more patients
- Creating awareness communication campaigns for patients and doctors

03

- Expect a total of ~ 15 patients to be enrolled
- Aim to complete enrolment in 2021 based on patient availability and number of sites

# A platform for growth

*Significant potential opportunities in biomedical applications of magnetic nanoparticles as results develop*



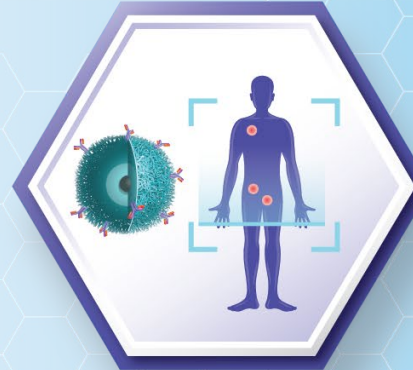
## CANCER SCREENING

Magnetic nanoparticles are used to collect/separate tumor cells and cancer DNA from blood



## DIAGNOSTIC IMAGING

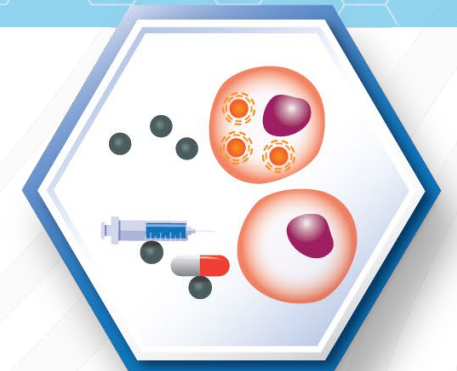
MagSense® nanoparticles are used for diagnosis and staging of cancers



- Breast Cancer
- Brain Cancer
- Prostate Cancer
- Ovarian Cancer

## TREATMENTS

Magnetic nanoparticles can be used for treatment by hyperthermia or used as an adjuvant to deliver cancer drugs or vaccines





# Pre-Clinical Initiatives

*Expanding MagSense® technology towards the diagnosis of other important cancers*

## Prostate Cancer



- IBX received \$50,000 CSIRO Federal Government Grant for prostate cancer project.
- Preclinical research project with Monash University's Biomedicine Discovery Institute with the aim of achieving an early proof of concept validation of MagSense® as a prostate cancer imaging agent

## Brain Cancer

- Collaboration with Patrys Limited (ASX.PAB)
- Research program aims to pair the targeting capabilities of Patrys' deoxymabs with the imaging capabilities of MagSense® technology to provide a highly effective imaging agent for hard-to-diagnose cancers such as brain cancer.



*"Prostate cancer imaging is an evolving field. Imagon's new imaging technology would allow precision mapping of the lymph nodes, identifying smaller foci of cancer that current imaging modalities are unable to identify."*

**PROFESSOR LISA HORVATH**  
SCIENTIFIC ADVISORY BOARD MEMBER

*"We are very excited to be further leveraging the cancer-targeting ability deoxymabs by partnering with Imagon and its innovative MagSense® imaging technology to potentially develop new ways to visualize and diagnose cancer."*

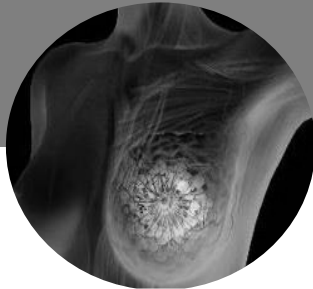


**DR JAMES CAMPBELL**  
CEO AND MANAGING DIRECTOR



# A Path to Growth and Value

*Strategic plan provides path to future products and shareholder value*



## STAGING BREAST CANCER

Reduce unnecessary surgery.  
Addressable Market:  
**\$700 million**



## TUMOR DETECTION

Breast, prostate, lung & ovarian.  
Addressable Market:  
**\$7 billion**



## MRI CONTRAST

Safer alternative to current product, Gadolinium.  
Addressable Market:  
**>\$3 billion**



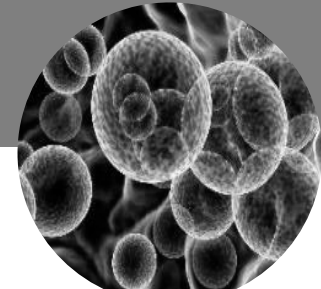
## TREATMENT MONITORING

Monitor tumor size and adjust treatment accordingly.  
Addressable Market:  
**>\$2 billion**



## DOCTORS OFFICE

Hand-held MagSense<sup>®</sup> instrument.  
Addressable Market:  
**>\$14 billion**



## DETECTION & THERAPY

Provide both detection & delivery of therapy.  
Addressable Market:  
**>\$140 billion**

# Capital Structure

*Well funded throughout 2021 into 2022*



- 2021 cash flows funded by cash reserves, exercise of listed options and R&D tax incentive
- Increasing cash inflows from exercise of listed options with \$1.3 million received in Q1 2021
- Widely held register with strong relative liquidity

Ordinary shares on issue	1,041 million
Listed and unlisted options (26 May 2021)	353 million
Share price (26 May 2021)	\$0.13
12-month range	\$0.025 - \$0.225
Average daily volume (12 months to 26 May 2021)	11.1 million shares
Market capitalization (26 May 2021)	\$135.3 million
Cash (31 March 2021)	\$13.0 million
Listed options exercised (Jan-Mar 2021)	\$1.3 million
Shareholder data (26 May 2021)	Top 20 shareholders own 20.7%

# Backed by strong industry and clinical experience



## BOARD OF DIRECTORS



**ROBERT PROULX**  
Chairman & CEO



**MICHAEL HARSH**  
Non-Exec Director



**JOVANKA NAUMOSKA**  
Non-Exec Director



**DAVID LUDVIGSON**  
Non-Exec Director



**DIANNE ANGUS**  
Non-Exec Director



**MARK VAN ASTEN**  
Non-Exec Director

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MD Anderson Cancer  
Center



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