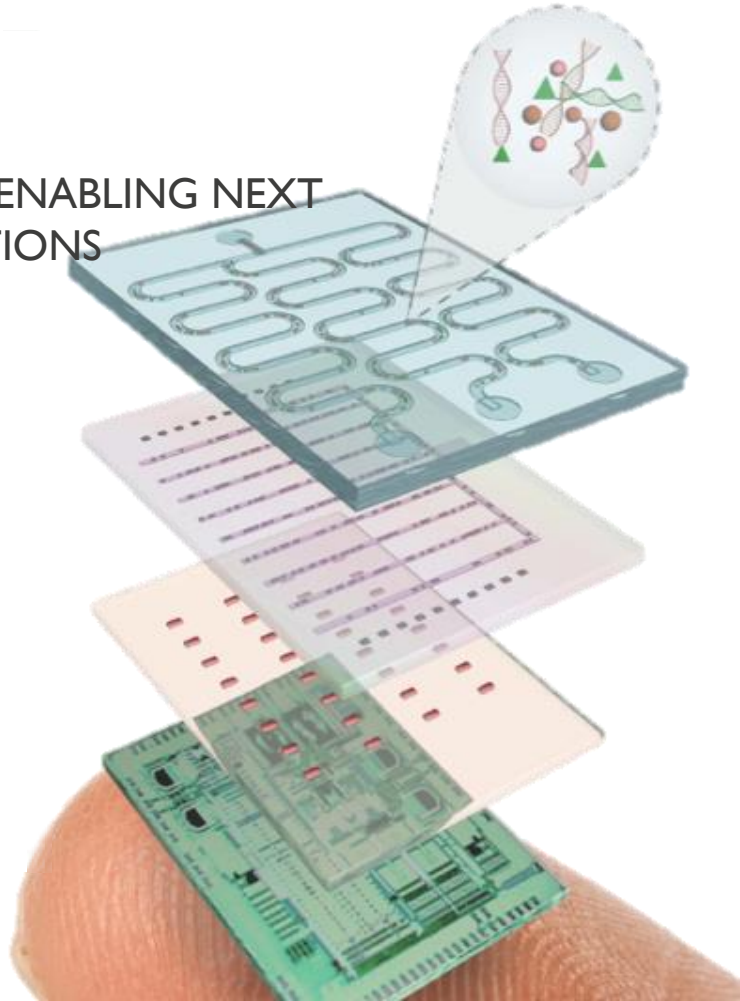
IMEC LIFE SCIENCE TECHNOLOGIES

MASS MANUFACTURABLE SILICON CHIP-TECHNOLOGY ENABLING NEXT GENERATION LIFE SCIENCE AND HEALTHCARE APPLICATIONS

Proposition for Life Sciences Sensors and Diagnostics



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2016

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2025

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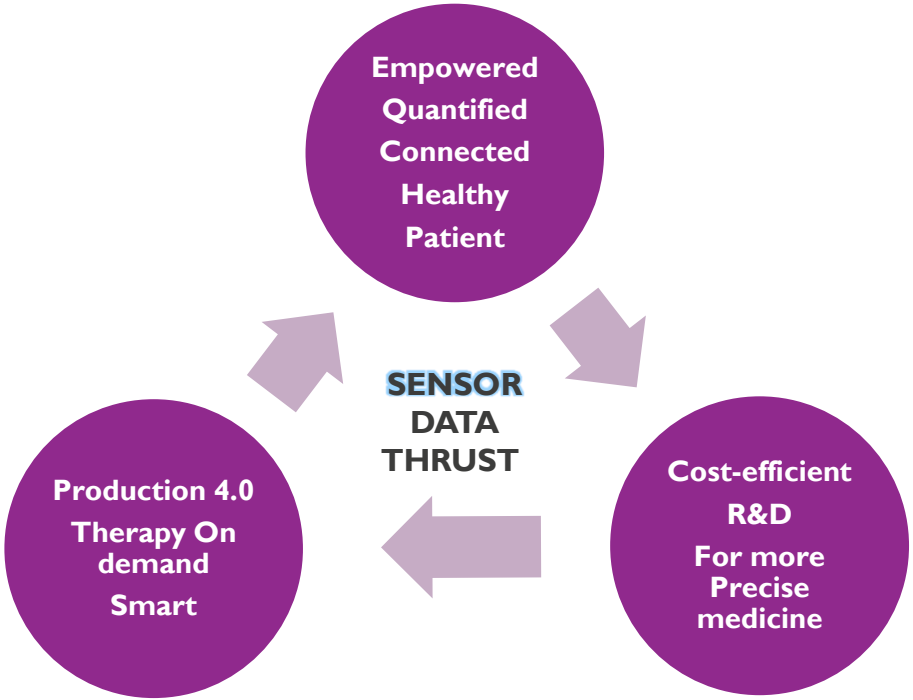
NO DOUBTS THAT INTERNET OF MEDICAL THINGS WILL COME
BUT SENSOR REMAINS THE BOTTLENECK



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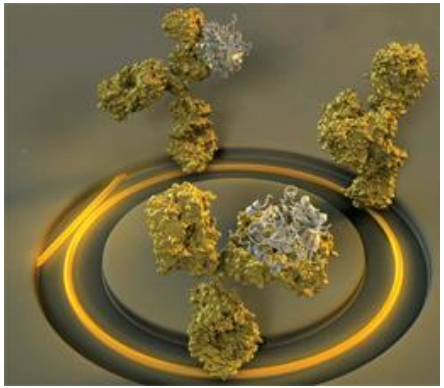
EXAMPLE CUSTOMER APPLICATION

GENALYTE AND IMEC COLLABORATE ON DISPOSABLE SILICON PHOTONICS BIOSENSOR CHIPS

KEY SENSOR TECHNOLOGY:
Imec biophotonics on chip



Read the press release: http://www2.imec.be/be_en/press/imec-news/imecgenalyte.html

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Genalyte

EXAMPLE CUSTOMER APPLICATION

PACIFIC BIOSCIENCES AND IMEC COLLABORATE TO DEVELOP ADVANCED MICROCHIPS FOR SINGLE MOLECULE SEQUENCING APPLICATIONS

Pacific Biosciences RSII

SEQUEL

7x faster

3x smaller

2x lower cost

Thanks to IMEC biophotonic chip solution

Pacific Biosciences Sequel (announced Oct 2015)

SMRT CONSUMABLES

- Sample-to-sequencing in a day
- Cost-effective, scalable workflows
- Flexible protocols support a variety of sample types and insert sizes

Source: http://www.pacb.com
Copyright Pacific Biosciences

Read the press release: http://www2.imec.be/be_en/press/imec-news/pacificbiosciences.html

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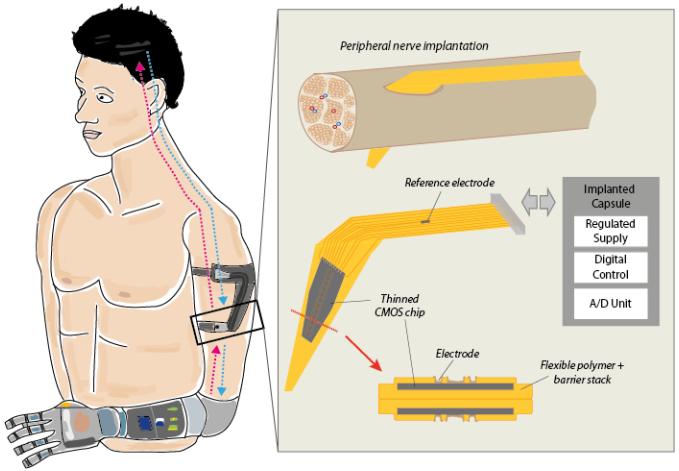
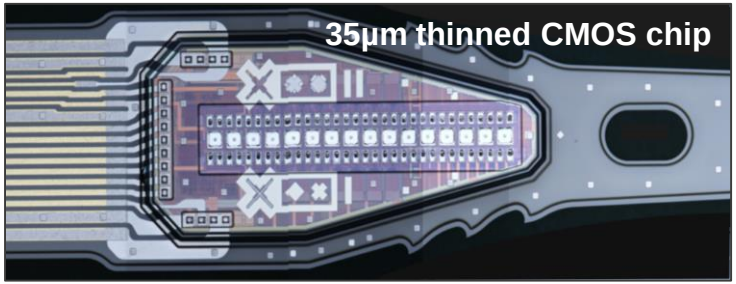
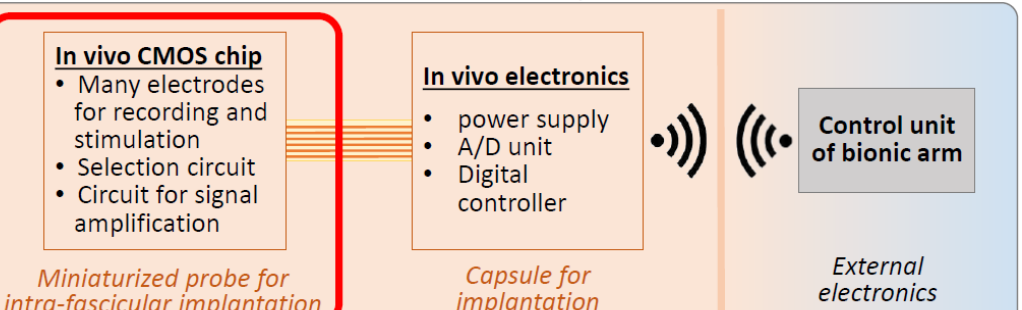
HIGH-DENSITY TRANSVERSE INTRAFASCICULAR MEA FOR BILATERAL NEURAL INTERFACING

IMEC POSTPROCESSED CMOS CHIPS WITH BIOCOMPATIBLE HERMETIC PACKAGE



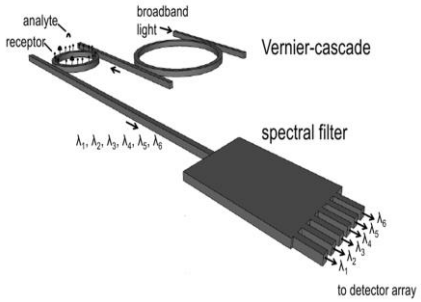




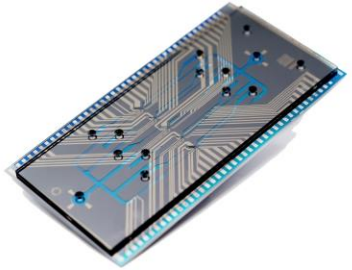
This work is sponsored by the DARPA BTO under the auspices of Dr. D. Weber, Pacific Grant/Contract No. N66001-15-C-4018 granted to the University of Florida

PARTICIPATION IN EUROPEAN PROJECTS - EXAMPLES

APPLICATION

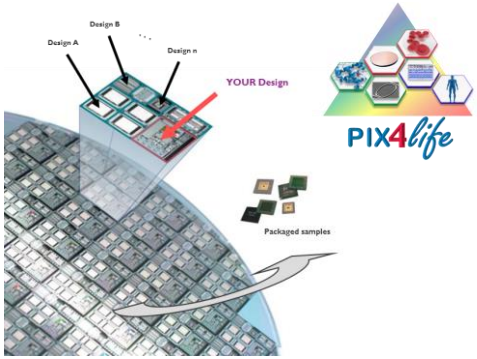


IMI RAP-IDD AND FP7- POCKET

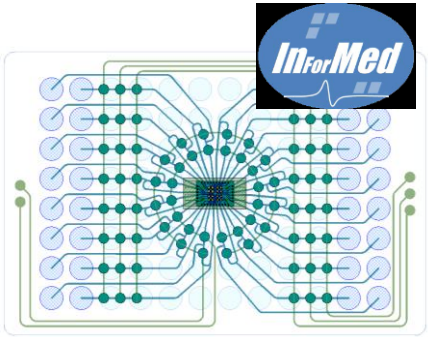


ERC SCALPEL and ERC-POC-JETCELL

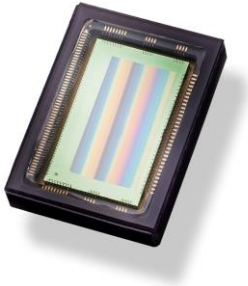
PLATFORM



H2020 PIX4LIFE open access pilot line



ECSEL IN4MED



ECSEL EXIST

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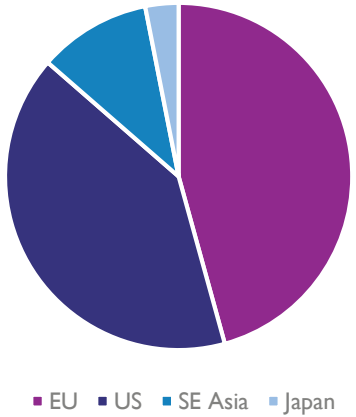
MOST INNOVATION HAPPENS THROUGH STARTUPS AND SME

US HAS A MORE ACTIVE MEDICAL DEVICE AND STARTUP LANDSCAPE

CAGR of silicon chips > 30%
Current contract revenue including funding



Note: IMEC internal numbers representative for the market
For EU: 30% is public funding

SPIN OFF's

US

Genalyte

PACIFIC BIOSCIENCES

+ 5 more (confidential)

EU

Mostly spin offs from imec (+3 in the making)

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HOW DOES FUNDING HELP US TO MATURE IDEAS TO PRODUCTS

COLLABORATIONS ALONG THE DEVELOPMENT CYCLE BUT STILL FUNDING GAPS

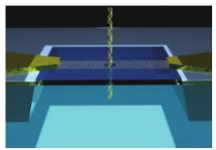
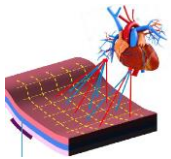
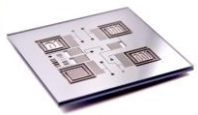
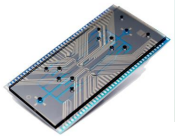
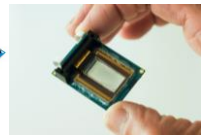
TYPICAL DEVELOPMENT IS 2-3 years and > 10 million

Feasibility project | Development | Prototyping | Low volume production | Transfer to HVM partner

H2020 – consortia and IMI

ECSEL Pilot lines

From idea to product development - individual risk – very expensive


PRECOMPETITIVE

COMPETITIVE

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HOW TO GET PRODUCTS FASTER IN THE CLINIC

SLOW INNOVATION AND HIGH COSTS OF VALIDATION INHIBIT FAST TAKE UP.

HOW can ECSEL/IMI help to accelerate pathfinding and learning?
HOW can ECSEL/IMI help us to validate technically mature prototypes?
HOW can ECSEL/IMI help to shorten the innovation cycle for selected projects and fill the funding gaps?
HOW can ESCEL/IMI help to find VC or pharma VC money for promising projects?
HOW can ECSEL/IMI help to design new products with manufacturing in mind?
HOW can ECSEL/IMI lower the barrier to get into the clinical market?

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embracing a better life