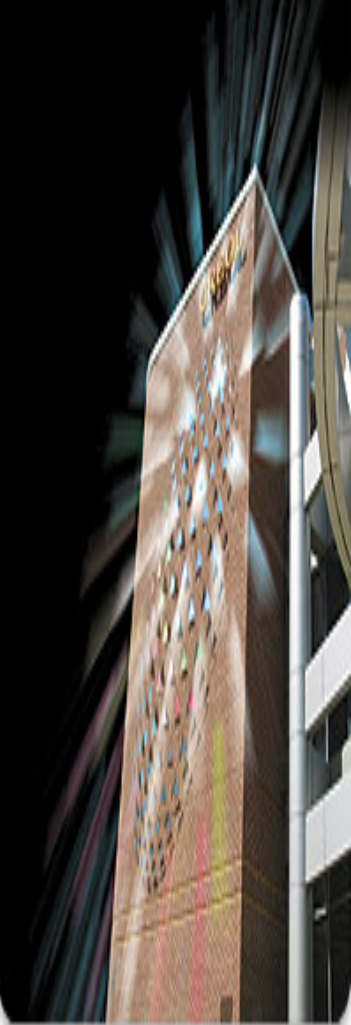


SUMMARY:

- CREOL Presentation - Multimaterial Integrated Microphotonics Institute for Manufacturing Innovation (MI3)
 - o MI3 - Industry driven to bridge the gap between R&D and production, developed technologies envisioned to mature and transition to DoD weapon systems and/or commercial platforms in 3-5 years and enable MI3 to be self-sustaining in 5-7 years
 - o Advanced manufacturing of multimaterial photonic integrated circuits, devices, and systems, including packaging, reliability and testing
 - o Resource for regional and national photonics companies, defense contractors, research centers, and small-business startups pursuing micro photonics technologies
 - o Principal hub to be located at International Consortium for Advanced Manufacturing Research iCAMR in Osceola County, Florida
 - o Estimates this will happen in the next few years but it is still out for a couple of years.



Response to RFI

Multimaterial Integrated Microphotronics Institute for Manufacturing Innovation (MI3)

MI3

Public-private partnership of industry, universities, community colleges, local governments, and non-profits.

Industry driven to bridge the gap between R&D & production

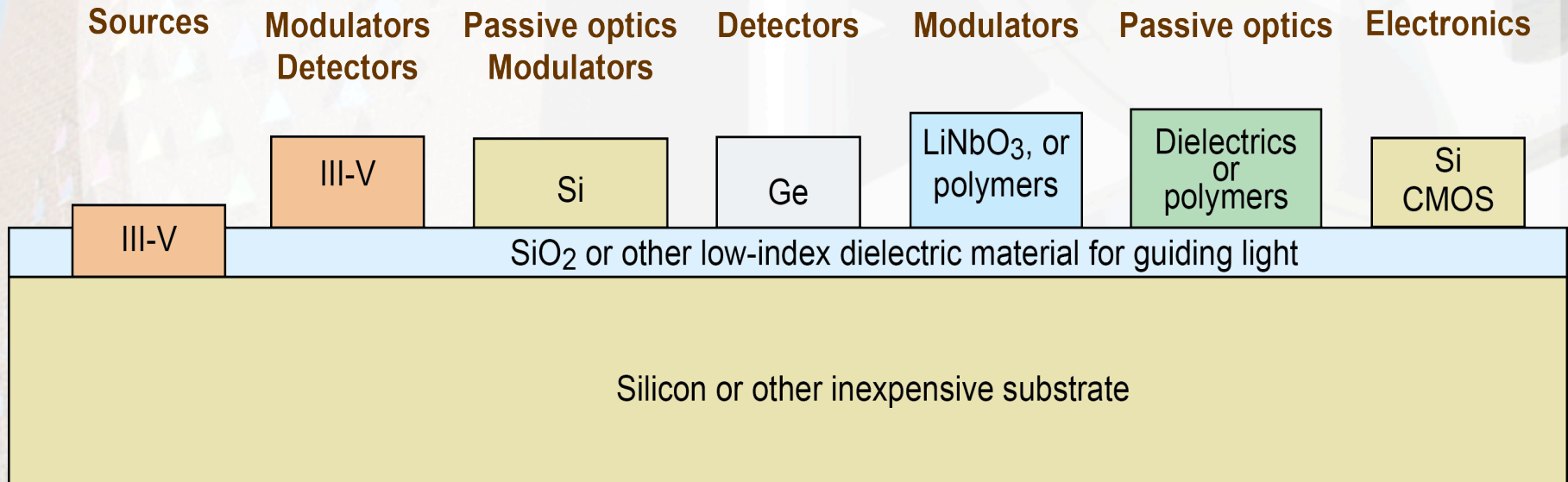
Aimed at developing innovative photonics manufacturing technology and applications

Developed technologies envisioned to mature and transition to DoD weapon systems and/or commercial platforms in 3–5 years & enable MI3 to be self-sustaining in 5–7 years

MI3

Advanced manufacturing of multimaterial photonic integrated circuits, devices, and systems, including packaging, reliability, and testing.

A resource for regional and national photonics companies, defense contractors, research centers, and small-business start-ups pursuing microphotonic technologies with diverse materials.





DoD Applications

Ultracompact and ultrafast photonics-based systems for big data centers, high-bandwidth communication systems, high-performance computing

High-sensitivity and multi-function sensors, and high-resolution image acquisition and processing systems for wide-area surveillance and long-range object identification in the visible and infrared regions.

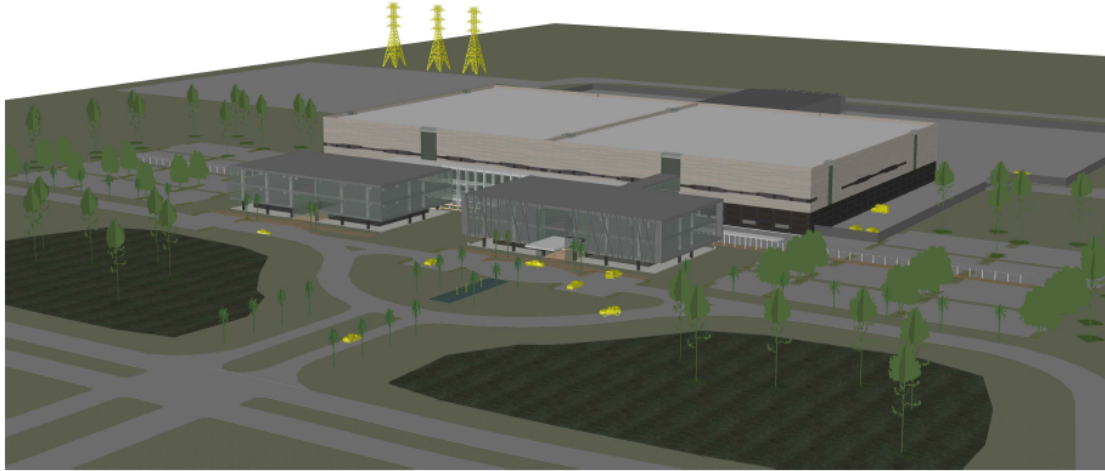


Principal hub to be located at the new “SEMATECH-like”

International Consortium for Advanced Manufacturing Research iCAMR

in Osceola County, Florida

iCAMR



\$60M County
\$10M UCF
\$125M State

100,000 ft² 2-level state-of-the-art R&D lab/fab facility
43,000 ft² of cleanroom
30,700 ft² of elevated waffle slab / sub fab
15,000 ft² of lab/office area

Site located on a new dedicated 220 acres research park

iCAMR Technology Platform



Advanced Materials Development Line

GaN, GaAs, InGaAs and SiGe

MOCVD deposition tools utilizing 8" silicon substrates

Advanced Packaging, Testing, and Device Integration Development Line

for prototype development and commercialization

Smart Sensors Application

Smart electronic and optoelectronic sensors w/wireless communication designed to support multipurpose product applications for a broad range of industries (biomedical, oil & Gas, aerospace/defense, environmental, agriculture, ..)

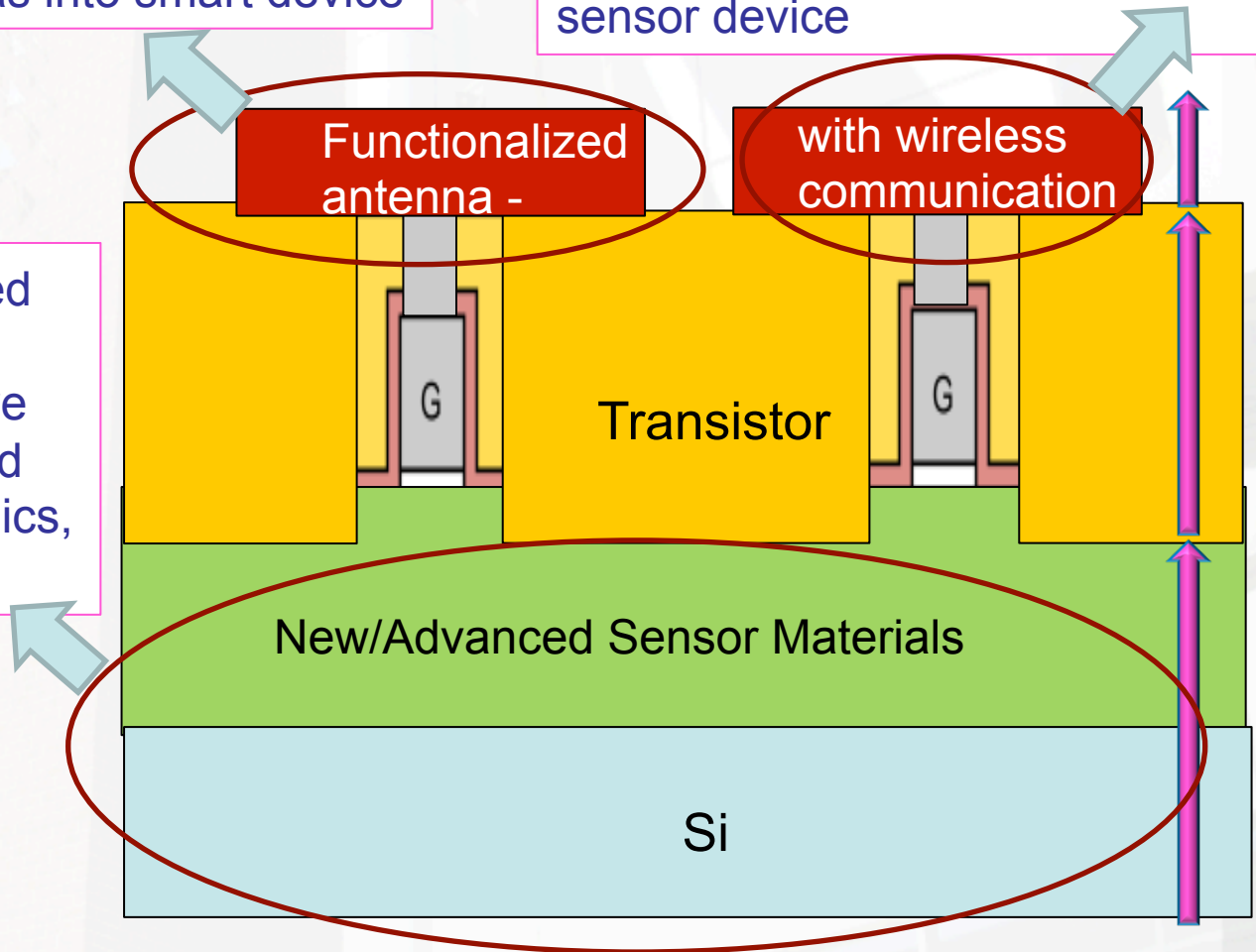
Universal Smart Sensor Fabrication Integration Strategy



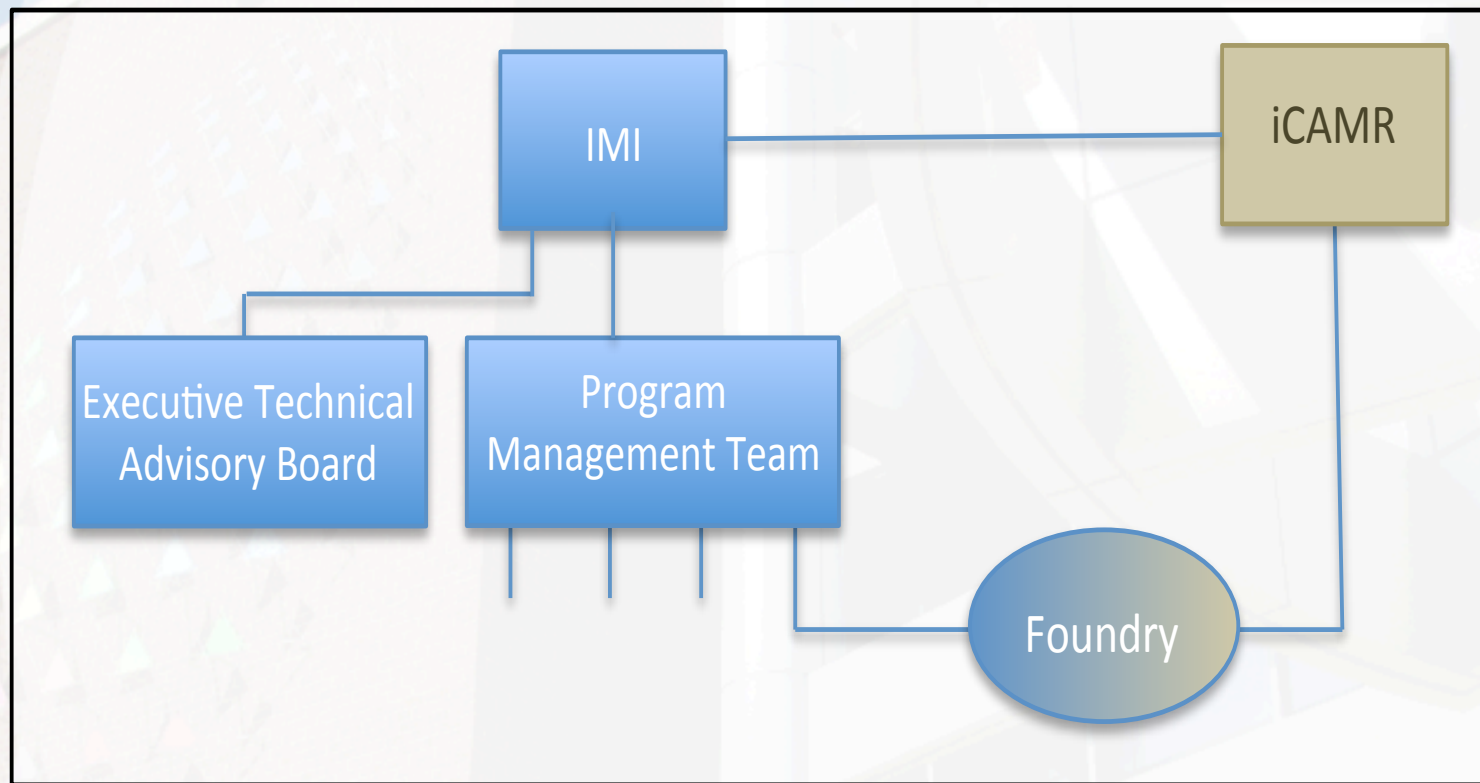
2. Integration of functionalized sensor/optical antennas into smart device

3. Short range RF communication integrated into a universal smart sensor device

1. III-V materials deposited on 200mm/300mm Si substrates for cost effective manufacturing of advanced devices – sensors, photonics, etc.

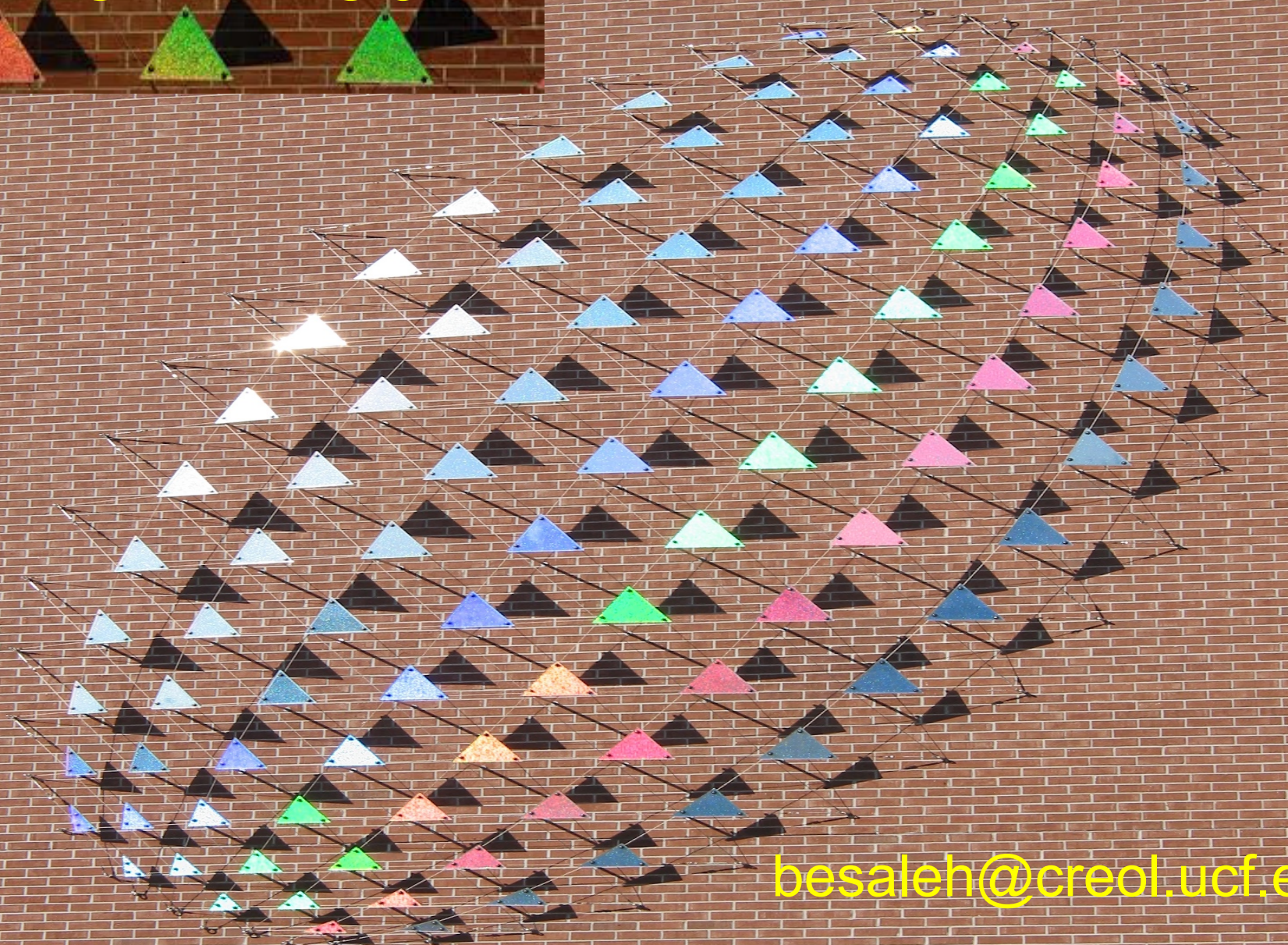


MI3-iCAMR



CREOL

Thank You!



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