

AUSSEN WIRTSCHAFT FORUM

MIT EUROPE CONFERENCE 2023

A CHANGING WORLD. HOW TECHNOLOGY TACKLES GLOBAL CHALLENGES.

Wednesday, March 29 – Thursday, March 30, 2023

ABSTRACTS DEEPDIVES 30.03.2023

Venue: Wirtschaftskammer Österreich | Wiedner Hauptstraße 63, 1045 Vienna

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The past two and a half years have witnessed the rapid gathering of unexpected and unprecedented global forces—a world-wide pandemic, energy scarcity, climate change, sustainability issues, and geopolitical tensions are coalescing like weather fronts into a driving storm that is radically changing the world. With net zero, resilience, and technology the basis for growth and well-being, how are we writing a new narrative for reshaping the world to be a better one? We invite you to join MIT faculty members in a conversation about the future.

THE MIT Experience

John Fernandez

MIT pioneered the concept of learning by solving real-world problems when it first opened its doors in 1865. The Institute's motto - "Mens et Manus" - literally means "mind and hand" and underscores MIT's philosophy of transforming visionary ideas into concrete and practical realities to benefit humanity. The discoveries of its teachers and students have become part of our everyday lives, the things we now all take for granted. From additive manufacturing to digital technology to RFID to touch screens to mRNA vaccines, the list of innovations from MIT's faculty members and students goes on and on.

Professor John Fernandez will give insight into the unique elements that make "The MIT Experience" the foundation of its mission to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century.

in co-operation with:



Deepdive 1

Philip Budden

SOLD OUT

A Management

**THE WORLD NEEDS BETTER CORPORATE INNOVATION:
HOW TO DO THIS INTERNALLY, AND THROUGH ECOSYSTEM ENGAGEMENT**

Facing the uncertain world ahead, and many emerging technologies, “innovation” will be crucial but it is hard, especially for Corporates, and yet it is often key to competitive advantage - getting and staying one step ahead!

Among the most common challenges for a Corporate leader is a misreading of what “innovation” is (e.g., conflating it with technology) and a misunderstanding of why Startup entrepreneurs seem to be better at it.

Dr. Phil Budden offers practical advice on what Corporate leaders can do about this, both internally and also how to partner most effectively with external stakeholders such as Universities, Startups and entrepreneurs. This not only allows Corporates to do well (eg financially or competitively), it also helps them to do good (such as supporting their local innovation ecosystem, or addressing global climate challenges).

Deepdive 2

**AJ Perez and
Dave Hardt**

SOLD OUT

B Design and Manufacturing

DESIGN FOR SUSTAINABILITY

If we want to meaningfully move the needle on pollution, waste, climate, and equity etc. we must challenge ourselves to think and innovate differently than ever before. This talk aims to introduce the audience to the Design for Sustainability toolbox through both a technical discussion and a series of thought-provoking case studies ranging from research in MIT labs to mass production at commercial scale.

Deepdive 3

Ariel Furst

C New Technology

HARNESSING MICROBES FOR HUMAN AND ENVIRONMENTAL HEALTH

Microbes are often thought of solely as infection-causing agents, but in fact, these cells support all other life on earth. Microbes are responsible for critical processes, ranging from nutrient cycling in the environment to digestion in our gut. In fact, we have ten times more microbes in and on our bodies than we have human cells. We view microbes as tiny chemical factories that have had four billion years to perfect their target processes. Because of the diverse functions, we view microbes as critical engineering tools to improve human and environmental health. In this workshop, we will brainstorm global grand challenges and discuss the potential of microbial technologies to address these challenges.

in co-operation with:



Federal Ministry
Republic of Austria
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Deepdive 4
Mircea Dinca
D Climate and Energy
DISTRIBUTED WATER HARVESTING FROM AIR IN WATER-STRESSED AND REMOTE AREAS USING METAL-ORGANIC FRAMEWORKS

Join MIT Professor Mircea Dinca for a conversation about water harvesting from the air and explore the potential and applications for metal-organic frameworks to address issues of water, food, energy storage and more.

Deepdive 5
John Carrier
A Management
HOW TO FORGE A CLEAR PATH TO INDUSTRY 4.0

Sensor technologies, advanced analytics, artificial intelligence, and machine learning are poised to remake manufacturing. Don't let a legacy mindset derail progress. Carrier, who teaches the MIT executive education course "**Implementing Industry 4.0: Leading Change in Manufacturing and Operations**," argues that the biggest impediments to Industry 4.0 transformation are operations practices and legacy mindsets that keep employees tethered to familiar work patterns, despite investment in new technologies and business process innovations.

Deepdive 6
Duane Boning
B Design and Manufacturing
CAUSING A PARADIGM SHIFT: MACHINE LEARNING IN MANUFACTURING AND OPERATIONS

Finding the shortest path from data to impact—MIT Machine Intelligence for Manufacturing and Operations (MIMO) is a research and educational program created to increase industrial competitiveness by accelerating the deployment and understanding of machine intelligence in manufacturing and operations. Providing the context, Professor Boning identifies that the thrust of Machine Learning is causing a paradigm shift in Manufacturing and Operations driven by IIoT, the availability of massive amounts of structured data, advances in ML methods and the growth in compute capacity.

Deepdive 7
Jeewhan Kim
C New Technology
BUILDING THE NEXT GENERATION OF ELECTRONICS – FLEXIBLE ELECTRONICS

Jeewhan Kim is building a physical neural network and producing cheap semiconductor wafers – technologies that could help bring the artificial intelligence power of super computers to handheld devices. A team of researchers led by Professor Kim have designed a "brain-on-a-chip" smaller than a piece of confetti that could advance the development of small portable AI devices, and developed a new process that may be the key to manufacturing flexible electronics with multiple functionalities in a cost-effective way.

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Deepdive 8

D Climate and Energy

Fadel Adib

WIRELESS SENSING FOR RETAIL, ROBOTICS, AND SUPPLY CHAIN

Join Prof. Fadel Adib for a conversation and brainstorming session on the journey of one of his lab's technologies from a moonshot idea in the lab to their most recent startup, Cartesian Systems, that aims to map the physical world at an unprecedented scale. The session will overview the transition from lab to a startup, and brainstorm applications and avenues for collaborations in areas spanning retail, robotics, and supply chain.

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