2020 MIT Startup Exchange Workshop: Sustainable Materials Innovation

September 15, 2020 8:30 am - 1:00 pm

11:00 AM

Welcome Remarks and Agenda Overview
James Gado

Senior Director, MIT Corporate Relations

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James E. Gado manages relations with US, European, and Middle Eastern companies with a focus on developing a broader MIT presence in the MENA region. Gado has oversight responsibility for the MIT Startup Exchange program and managers.

Gado comes to MIT after more than 25 years in the specialty materials and chemical industry. His experience spans the sectors of construction, microelectronics, automotive, and food/beverage packaging all on a global basis. The majority of his career was spent at W.R. Grace & Co., with positions also at American Cyanamid Company and Teradyne, Inc.

Gado has held leadership positions at the director level for mergers and acquisitions, strategic planning, marketing, and research and development management. He has developed new business, both organically and via acquisition, across the globe including the emerging markets of China and India. His domestic investment experience includes collaboration with Grace/Horn Venture Partners.

11:05 AM

MIT Academic Innovator: "Electrochemical Pathways Towards Sustainability" (Presentation and Q&A)
Donald Sadoway
John F Elliott Professor of Materials Chemistry, MIT Department of Materials Science and Engineering

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John F Elliott Professor of Materials Chemistry
MIT Department of Materials Science and Engineering

Donald R. Sadoway is the John F. Elliott Professor of Materials Chemistry in the Department of Materials Science and Engineering at the Massachusetts Institute of Technology. Born in Toronto, he obtained the B.A.Sc. in Engineering Science, the M.A.Sc. in Chemical Metallurgy, and the Ph.D. in Chemical Metallurgy, all from the University of Toronto. The author of over 145 scientific papers and holder of 18 U.S. patents, his research is directed towards the development of rechargeable batteries for grid-level storage and environmentally sound technologies for the extraction of metals. In 2012 he was named by Time magazine as one of the 100 Most Influential People in the World.

Professor Sadoway's research seeks to establish the scientific underpinnings for technologies that make efficient use of energy and natural resources in an environmentally sound manner. This spans engineering applications and the supportive fundamental science. The overarching theme of his work is electrochemistry in nonaqueous media. Specific topics in applied research are the following: grid-scale storage of electrical energy (colossal but affordable batteries), environmentally sound electrochemical extraction and recycling of metals, including steel, nickel, manganese, and titanium as well as ferroalloys such as ferrochromium, lithium solid-polymer-electrolyte batteries, and advanced materials for use as electrodes, separators, and walls in fused-salt electrolysis cells and batteries. Related to these are the following topics in fundamental research: the physical chemistry and electrochemistry of molten salts (including molten oxides), cryogenic electrolytes, and solid polymer electrolytes.

11:20 AM

Startup Lightning Talks with Q&A Part I - Raw Material and Processing

Kebotix: Advanced materials and chemicals invented with AI speed - video starts at time stamp: 9:30
Jill Becker
CEO, Kebotix
Jill Becker
CEO
Kebotix

Dr. Jill S. Becker is CEO of Kebotix, a technology platform company for new AI-discovered chemicals & materials. Jill has done a lot of other entrepreneurial endeavors including founding two successful tech companies, 02139 & Cambridge NanoTech. She is a past Ernst and Young Entrepreneur of the Year winner in energy & materials and a YPOer. Jill earned her PhD & MA in chemistry from Harvard. In her spare time, besides travelling, she loves to spend time with her friends & family. Like most chemists, Jill is a foodie and deeply appreciates hauté gastronomy.

Sweetwater Energy: Green no longer comes at a premium
Jack Baron
President & Cofounder, Sweetwater Energy

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Jack Baron co-founded Sweetwater Energy as Chairman and CEO in March of 2009, and now serves as the company's President. Prior to Sweetwater, Mr. Baron served as President of PAETEC Holding Corp., a Fortune 1000 telecommunications company acquired in 2011 by Windstream Corp. (NASDAQ: WIN), one of the largest national telecom carriers. Mr. Baron co-founded PAETEC in 1998 with Arunas Chesonis.

Mr. Baron currently serves on the Board of Directors for Sweetwater Energy and he is Chairman of the Board of Directors for Onestream Network Services. Mr. Baron is an active volunteer with a number of youth groups and schools, including BSA, Greentopia and Habitat for Humanity. Mr. Baron is an active musician in the Rochester, NY area, playing guitar and singing in his rock band, "Don't Know Jack".

Revolutionizing Metal Manufacturing
Kai Narita

Co-Founder & CEO, 3D Architect

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Kai Narita is an innovator and engineer leading the 3D printing technology development. He has a Ph.D. in Materials Science from the California Institute of Technology (Caltech) and received his master's in Engineering and bachelor's degree from the Tokyo Institute of Technology.

Kalion: Creating high quality chemicals from biomass
Darcy Prather
President & CEO, Kalion, Inc.

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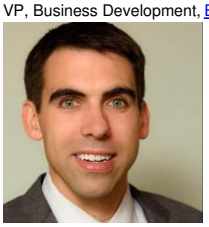
Darcy Prather serves as President of Kalion, Inc. He has spent a couple of decades developing new businesses from emerging technologies. Mr. Prather received two SBs from the Massachusetts Institute of Technology in electrical engineering; and science, technology, and society. He received an MA in philosophy, politics, and economics from Oxford University which he attended on a Rhodes Scholarship.

Mr. Prather started his career as a management consultant at McKinsey & Co spending significant time studying R&D. He advised a major agriculture player on potential impact of various intellectual property strategies for a seminal biotech product that continues to drive value even today. He developed a new research and development organizational structure for a major packaged goods company that was immediately adopted.

At Kalion, he has successfully driven the development of glucaric acid to fulfill the potential of the molecule as described in a 2004 DOE report on the top value added chemicals from biomass. With the support of an exceptional team of individuals and research partners, Kalion has developed not only an original production processes for glucaric acid, but also developed new markets for the low-cost, high-purity glucaric acid and derivatives from their green production process.

He has served as VP of Technology for NiaOnline, the largest online community for African Women, and VP of Strategy for Beta Data Services, Inc., a telecommunications billing system company.

Boston Metal: Efficient, emissions-free steel production
Adam Rauwerdink
VP, Business Development, Boston Metal



Adam Rauwerdink
VP, Business Development
Boston Metal

Adam Rauwerdink spent the last decade leading global business development for new technologies in the energy industry. At Vionx Energy, a vanadium flow battery company, Adam led sales and developed multi-MW projects in partnership with Siemens and Starwood Energy. Prior to Vionx, Adam was VP of Business Development at SustainX where he led first market partnerships in Korea and Japan and raised over $20M in equity from GE and others.

11:50 AM

Corporate Investor Keynote: SABIC's Journey Towards Sustainability (Presentation and Q&A)
SABIC Ventures
Aruna Subramanian
Managing Director, SABIC Ventures

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Managing Director
SABIC Ventures

Aruna Subramanian is the Managing Director of SABIC Ventures, responsible for the company's global venture capital investments. SABIC is one of the world's leading petrochemical companies with operations in over 50 countries. SABIC Ventures has its offices in The Netherlands, China and the US. Aruna has over 28 years of international work experience spanning a range of management functions. She has previously worked with Schlumberger Oilfield Services in a range of field and management roles in various countries, Shell Technology Ventures - a corporate venturing vehicle backed by Royal Dutch Shell and Chemelot Ventures, a regional Dutch investment fund. She holds an engineering degree from IIT, Delhi, India and an MBA from IMD, Lausanne.

12:05 PM

Startup Lightning Talks with Q&A Part II - Material Applications and End Life/Recycle
C-Crete Technologies: Innovation at the Intersection of Material Science, Engineering and Big Data
Rouzbeh Shahsavari
Founder and President, C-Crete Technologies

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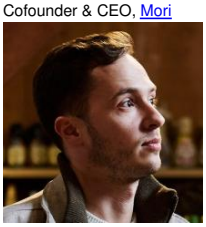
Founder and President

C-Crete Technologies

Dr. Rouzbeh Shahsavari is the founder and president of C-Crete, which is an invention and technology development company building paradigm shifts of the future in energy, environment, materials, construction, industrial and infrastructure. C-Crete works at the intersection of material science, nanotechnology, artificial intelligence, and manufacturing to drive next generation of innovations for a low carbon and energy efficient world. In the field of sustainable materials, we primarily aim at employing simple, scalable raw materials and industrial waste streams to turn them into advanced composites using intelligent synthesis protocols. This approach enables manufacturing and commercializing low-cost, scalable, and eco-friendly materials with never-seen-before properties.

Dr. Shahsavari is an internationally recognized materials scientist and a former professor of Materials Science and Civil Engineering at Rice University. His groundbreaking research on sustainable materials and composites has resulted in 70+ journal papers including publications in leading journals in the field (e.g. Nature, Advanced Functional Materials, etc), 50+ national and international invited talks, 10+ patents, and several prestigious awards. He has been the lead principal investigator on several multi-million dollar projects sponsored by government & industry. He received his Ph.D. in the area of materials science at MIT in 2010 and his MS in applied mechanics at McGill University in 2004. Prior to MIT, he worked as a project engineer at a EPCM firm in Canada.

Mori: A New Kind of Protection for All Kinds of Foods
Adam Behrens
Cofounder & CEO, Mori



Adam Behrens
Cofounder & CEO
Mori

Adam Behrens has spent his career developing and translating technologies in the areas of food, agriculture, healthcare, and nutrition. Previously, he was a postdoctoral associate in the Langer Lab at MIT where he managed several projects focused on improving healthcare and nutrition in the developing world. He was named to the Forbes 30 under 30 list in 2017. Adam holds a BS in chemical engineering and a PhD in bioengineering from the Kofinas lab at the University of Maryland.

Nanoramic Laboratories: Driving the Energy Storage Revolution with Maximum Battery Performance
John Cooley
Founder, President and COO, Chairman, Nanoramic Laboratories

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Founder, President and COO, Chairman
Nanoramic Laboratories

Dr. Cooley co-founded Nanoramic® in 2009, where he currently serves as President and Chief Operations Officer and focuses on technology development and commercialization. In the past, he has worked in the defense and medical device industries and has consulted in IP litigation. At Nanoramic®, John has led the execution of our first product lines and has co-authored multiple winning grant proposals.

Dr. Cooley holds five (5) technical degrees from MIT including the Ph.D. from the Electrical Engineering dept. At MIT, he won both the David Adler Memorial Thesis Prize and the Morris Joseph Levin Award for his thesis work, and was a Martin Family Fellow in 2009.

Dr. Cooley has been issued several patents including four (4) for his thesis work. He has presented and published papers in the areas of power converter control and modeling, linearized circuit analysis, capacitive sensing, building energy management, and in education.

Journal publication venues include the IEEE Transactions on Power Electronics, IEEE Transactions on Industrial Electronics, IET Transactions on Circuits, Devices and Systems, and the Journal of Solid-state Circuits. John's interests lie in energy-related problems of scale and the ways in which we can impact those with technology and policy. John is a member of the IEEE and Sigma Xi.

Phoenix Tailings: New metals & metal powders from re-mined discarded ore
Nick Myers
CEO & Cofounder, Phoenix Tailings

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CEO & Cofounder
Phoenix Tailings

Nick Myers, CEO & Cofounder of Phoenix Tailings, has a background in physics and in the financial industry, but along with his three cofounders at Phoenix Tailings, Nick shares a passion for leveraging entrepreneurship to make a deep, and scalable impact on the world. Prior to Phoenix, Nick worked at Techstars Boston as well as held several executive-level positions in a number of startups, growing them from pre-revenue to high growth companies today.

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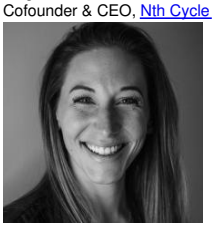
Nth Cycle: Low-cost electronics, rare earth, & specialty metals recycling
Megan O'Connor
Cofounder & CEO, Nth Cycle



Megan O'Connor
Cofounder & CEO
Nth Cycle

Megan O'Connor is the CEO and cofounder of Nth Cycle. Nth Cycle is commercializing a technology to recycle critical metals from electronics waste to generate a new, secondary source of these materials in the United States to enable true energy independence on our path to a clean energy economy. Megan received her bachelor of science degree in Chemistry from Union College, and her Ph.D. in Civil and Environmental Engineering from Duke University. She was recently named one of Forbes 30 under 30 in Energy, 2019, and is an entrepreneurial fellow in the Department of Energy?s program Innovation Crossroads.

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12:45 PM **Adjournment**