ENOUGH HAS BEEN SAID ABOUT WHAT COULD OR SHOULD HAPPEN – NOW IT’S TIME TO MAKE IT HAPPEN.

ADDITIVE MANUFACTURING
PRODUCTION APPLICATION INITIATIVE 2014

PROACTIVELY TAKING 3D PRINTING FROM PROTOTYPE TO PRODUCTION

Pre-Conference Workshop | August 26
August 27-28, 2014 | New York | USA

Using Innovative, Real Life Application Case Studies To Validate 3D Printing As A Production Strategy By Assessing How The Costs, Product Quality & Scalability Of Additive Manufacturing Compare To Traditional Methods

PROACTIVELY TAKING 3D PRINTING FROM PROTOTYPE TO PRODUCTION
- IT’S TIME TO MAKE IT HAPPEN

Case Studies, Demonstrations And Test Results Presented By Experts From A Cross Section Of Industries:

20+ PRESENTATIONS OVER TWO DAYS OF CONFERENCE FOCUSING ON:

Material Availability And Cost:
Assessing the volume availability of key materials to determine the long term sustainability of supply and the scope of additive manufacturing applications

Material Science And Performance Parameters:
Using case studies to determine the performance properties, cost feasibility and standardization capabilities of 3D printing materials

Machine Capabilities And Limitations:
Examining the latest technological advances that are helping justify the business case for 3D printing and how capabilities compare to traditional manufacturing methods

How To Design For 3D Printing:
Adapting design approaches to a 3D printed world - assessing the game changing design rules, techniques and limitations of additive manufacturing

Showcasing Real Life Industrial Applications:
Presenting and analyzing test results to speed up the learning curve and gain perspective on the long-term commercial benefits of additive manufacturing

HANDS-ON WORKSHOP & DESIGN CONTEST:
This conference offers hands-on, interactive activities, in particular through an original workshop that covers the full cycle of additive manufacturing and a design contest to be announced very soon!

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The hype around 3D printing has been increasing exponentially over the past couple of years, many times with little to no backing in the real world of those who use the technology every day. There is no doubt as to the potential of additive manufacturing and recent projections estimate the market to quadruple in 2025. Nevertheless, end users are still struggling with critical issues.

From a technical perspective, additive manufacturing has reached a tipping point where the technology is maturing but big changes are expected to happen any moment. As end users are trying to take additive manufacturing one step further and apply it to production, they need to know how to reduce costs while improving quality, as well as to identify the right applications for the technology.

In order to do so, it is essential to learn about equipment and material costs, performance, volume and customization capabilities. Furthermore, end users are being faced with new design and software rules and limitations, intellectual property issues and the difficulties associated with business case justifications. First movers will reap the benefits of the technology – and these benefits have the potential to be game changing for the businesses they disrupt.

The Additive Manufacturing Production Application Initiative 2014 (AMPA14) is set to make a difference in the adoption or expansion of additive manufacturing as a cost-effective production process. The industry needs realistic approaches to these issues, as well as opportunities to establish real dialogue across the value chain. Enough has been said about what could or should happen – now it’s time to make it happen.

“Thank you so much for organizing such a fabulous event. I think everyone had a good time and no one will have walked out of there without a nugget of information that they will not act upon, and therefore make a change for the better.”

Intellectual Property Manager
GKN Aerospace

“Good all around, very open discussion with various presenters. Broad representation of the industry. Will definitely come next year!”

Senior Material Engineer
Bentley Motors

“A great opportunity to learn from the experience of additive manufacturing pioneers on various industry segments. Also good insights on the state of the art research about technologies and material development.”

Innovation Manager
Volvo

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CRYSTAL BALLROOM
481 8th Avenue
New York, NY 10001

Phone: (1) 212 971 0101
Fax: 212.564.6825
Click Here For Website
Day 1
Wednesday AUGUST 27

MATERIALS & MACHINES: THE REALITY AND PRACTICALITY OF SCALING UP ADDITIVE MANUFACTURING
Assessing practical case studies and test results to demonstrate the shortcomings and possibilities of additive manufacturing machines and materials for mass production, as compared to traditional manufacturing techniques

PRINTING METALS - FOCUSED CASE STUDY
3.20 Unveiling The Potential Of Ferrous And Non-Ferrous Metals And The Drivers Behind High Costs: A Case Study On Costs, Product Characteristics And Consistency

1.10 Identifying Equipment Solutions That Can Meet Larger Size And Multi-Part Requirements To Determine Capabilities For Manufacturing A Wider Product Range

1.40 Assessing The Volume Availability Of Key Metals, Plastics And Composites To Determine The Long Term Sustainability Of Supply And The Scope For Applying Them In Additive Manufacturing

POST-PROCESSING
11.30 Bridging The Gap Between The Machine And The Finished Product: Comparing The Costs, Effectiveness And Latency Of Vibratory Polishing, Vapor Smoothing, Electroplating And Painting

Exercising the available tools for surface finishing; neutralizing layer markings, adding color and perfecting the part

• Vapor Smoothing
• Electroplating
• Painting

Comparing the secondary processing requirements and costs of additive manufacturing and traditional manufacturing techniques

Leveraging capabilities: measuring the scope for optimization of additive manufacturing equipment to allow for reduced post-processing

Outlining strategies to reduce labor and promote the development of automated post-processing systems

Daniel Campbell, Program Manager, Aurora Flight Sciences
11.40 Question & Answer Session

Additive Manufacturing Machine Capabilities
Examining the latest technological advances that are helping justify the business case for 3D printing and how capabilities compare to traditional manufacturing methods

Equipment: Quality & Consistency
9.20 Exploring The Quality, Repeatability And Accuracy Capabilities Of The Very Latest Machines To Assess How Additive Manufacturing Competes With Traditional Methods

■ Hearing a recent case study demonstrating how high volume 3D printed products can be economically produced at consistent quality
■ Reviewing current technology to examine the impact of machine quality on the repeatability and consistency of parts
■ Fused Deposition Modeling (FDM)
■ Selective Laser Sintering
■ 3D Casting
■ Assessing how to minimize discrepancies between the design and the built part resulting from insufficient machine resolution and tolerances
■ Comparing additive manufacturing with injection molding in terms of mechanical properties and failure modes to discern which offers more value
■ Exploring ways to increase automation, minimize the need for manual quality control and enhance product reliability

Ralph Resnick, President & Executive Director, National Center for Defense Manufacturing and Machining (NCDMM)
11.10 Question & Answer Session

11.00 Morning Refreshments In Exhibition Showcase Area

Equipment: Speed and Volume
10.30 Hearing How A Large Scale Manufacturer Has Reduced The Total Cycle Time Of 3D Printed Products Through Equipment Selection

Contrasting additive manufacturing to traditional manufacturing technology in terms of throughput and total cycle time to determine the feasibility of large scale adoption

Identifying the shortcomings of additive manufacturing regarding speed and outlining verifiable solutions through test results

Establishing how to increase the speed of printing without reducing the quality of the surface finish

Calculating the capital investment necessary to attain large scale volumes with additive manufacturing technology

Brett Lyons, Material and Process Research Engineer, Boeing
11.00 Question & Answer Session

Equipment: Size and Multi-Part
11.10 Identifying Equipment Solutions That Can Meet Larger Size And Multi-Part Requirements To Determine Capabilities For Manufacturing A Wider Product Range

Assessing the build envelope of 3D printing machines as related to part capabilities and total costs

Examining how build envelopes and multi-part capabilities of the latest available equipment affects the speed and capacity

Evaluating new technologies that are expanding build envelopes for both metals and plastics

Gerd Mana, VP Technology Innovation, adidas Group
12.20 Question & Answer Session

12.30 Networking Lunch In Exhibition Showcase Area

Material Performance, Availability and Costs
Assessing Material Properties, Performance, Availability And Costs To Determine The Scalability, Product Applications And Standardization Feasibility Of Each

1.30 Determining The Performance Properties, Cost Feasibility And Standardization Capabilities Of 3D Printing Composites, Metals And Polymers: Case Study-Based Analysis

■ Comparing materials for additive manufacturing to their counterpart in conventional manufacturing to help justify the business case for use

■ Fibreglass
■ Carbon Graphite, Reinforced
■ CFRP (Carbon Fibre Reinforced Plastic)
■ ABS, PLA, Nylon, Polystyrene and PEEK
■ Composites

■ Analyzing fundamental mechanical properties: durability, strength, elasticity/stiffness and brittleness, lightweight, optical attributes

■ Analyzing fundamental physical properties: coefficient of thermal expansion, conductivity, lubricity

■ Understanding the benefits of graded materials for the improvement of product quality and performance

■ Discussing how price and material approvals are impacting the material standardization needed for large scale adoption

■ Assessing how the value pricing of high performing materials is affecting the business case for adoption

Josh Jacobson, CEO, Viberian Gobras
3.00 Question & Answer Session

3.20 Unveiling The Potential Of Ferrous And Non-Ferrous Metals And The Drivers Behind High Costs: A Case Study On Costs, Product Characteristics And Consistency

■ Identifying different types of ferrous and non-ferrous metals for additive manufacturing and assessing the advantages of powder metrology

■ Aluminum
■ Titanium
■ Stainless Steel

■ Comparing the quality of metals for additive manufacturing with their counterpart in traditional methods

■ Addressing the lack of standardization and quality consistency of metals and how it impacts on the properties of the finished part

■ Examining costs and capital investment for both prototyping and production of metal 3D printing

Tina Gornet, Manager of Rapid Prototyping Center Operations, University of Louisville

3.50 Question & Answer Session

MULTI-MATERIAL/COLOR CAPABILITIES
4.00 Exploring The Multi-Material And Multi-Color Capabilities And Costs Of Additive Manufacturing Machines To Determine If They Could Replace Traditional Hybrid Products

■ Reviewing equipment that allows for the dynamic delivery of multiple materials to enable the production of hybrid parts

■ Assessing the possibility of combining plastics and metals with other materials, such as wood or stone

■ Analyzing multi-color capabilities in relation to different types of plastics and metals to identify wider applications of additive manufacturing

■ Investigating the impact of multi-material and multi-color equipment on costs, throughput and business strategies

4.30 Question & Answer Session

BUSINESS CASE JUSTIFICATION
4.40 Building A Business Case: How To Leverage Additive Manufacturing Throughout Product Development Stages From Concept Through Maintenance

■ Understanding the role for and limitations of additive manufacturing at different stages of product development

■ Analyzing the return on investment in low-cost parts and tools on product development

■ Assessing the business case for inserting additive manufacturing methods into traditional manufacturing processes

Clara Asmial, Senior Technical Advisor, NIST Manufacturing Extension Partnership

5.10 Question & Answer Session

3D PRINTING BUSINESS MODELS
5.20 Examining The Various Business Models Being Used To Create Commercial Value Through Additive Manufacturing

■ Pinpointing the conditions for successful business models: assessing when branching out or implementing a new strategy around additive manufacturing will bring in profit and growth

■ Analyzing the adequacy of additive manufacturing for specific business models: finding the right balance between product improvement and product marketing to avoid turning 3D printing into a gimmick

■ Organizing supply chains around additive manufacturing: integrating new players and neutralizing added costs without burdening the consumer

Francis Bitonti, President and Founding Director, Francis Bitonti Studio

5.50 Question & Answer Session

Networking Drinks In The Exhibition Showcase Area

Networking Lunch In Exhibition Showcase Area

Networking Drinks In The Exhibition Showcase Area
DESIGN, MODELING AND INDUSTRY-SPECIFIC PROCESS VALIDATION
Sharing truly unique innovations and application ideas, understanding the need of designers to re-educate themselves on 3D printing and highlighting test results to indicate the long-term commercial benefits of additive manufacturing per industry

as limiting the extent of customization available to customers to reduce complications and delays in production.

Nancy Liang, Co-Founder, Design And Business Lead, Mixes Labs
Mary Huang, Founder, Continuum Fashion

2.00 Question & Answer Session

SOFTWARE & 3D MODELING

2.10 Examining The Latest Software And 3D Modeling Developments That Are Assisting Design For 3D Printing

• Measuring the need and effectiveness of predictive software to ensure functional requirements are met
• Investigating the importance of integrated software with additive manufacturing support
• From design to machine: harmonizing design parameters with the equipment’s build parameters to optimize quality and speed
• Looking into the possibility of using generic rather than machine-specific software to drive additive manufacturing equipment

Tim Gomze, Manager of Rapid Prototyping Center Operations, University of Louisville

2.40 Question & Answer Session

IN-PROCESS MONITORING SOFTWARE

2.50 Analyzing The Reliability Of In-Process Monitoring Tools To Assist Validation And Ensure Product Consistency: Exploring Software Capabilities

• Learning how a large scale manufacturer adopted in-process inspection tools to achieve product consistency and reduced cycle time
• Assessing the possibility of utilizing in-process monitoring software in additive manufacturing: polymers and metals
• Understanding what types of sensors can be synchronized with inspection software: temperature, oxygen and chamber
• Discussing how the implementation of effective in-process monitoring tools affects process validation

3.20 Question & Answer Session

OPEN SOURCE SOFTWARE, DESIGN SHARING AND CONSUMER 3D PRINTING

4.00 Assessing The Benefits Of Open Source Software And Design Sharing To Stimulate R&D And The Expansion Of Consumer 3D Printing

• Exploring software options available within the open source community to design, repair/fix, modify, and eventually print 3D models
• Comparing and contrasting open platforms and walled gardens to understand implications for industrial R&D
• Analyzing software tools for file sharing and distributive manufacturing platforms to understand how far consumer 3D printing will expand
• Learning how manufacturers can capitalize on consumer-based 3D printing through desktop prototyping and low cost distribution of parts

David Saint John, Post-doctoral Researcher / Instructor, Penn State University

4.30 Question & Answer Session

INTELLECTUAL PROPERTY

BALANCING PROGRESS & PROTECTION TO ENSURE THE CREATION OF A COMPETITIVE AND VALUE-GENERATING MARKET

INTELLECTUAL PROPERTY

4.40 Examining The Implications Of Expiring Patents And Learning How To Use DRM To Balance Competition With The Protection Of Innovations

• Identifying expired or near-expired patents and understanding the consequences of expiration on market dynamics
• Investigating and assessing the approach of the main suppliers to the open source community
• Explaining the theoretical possibility of infinite replication and the methods that allow for the protection of Intellectual Property rights
• Surveying the potential of DRM as a tool to neutralize the threat of piracy

5.10 Question & Answer Session

5.20 Chair’s Closing Remarks
**Sponsorship Opportunities**

*Additive Manufacturing Production Application Initiative 2014* offers a truly unique platform for you to deliver your message, raise awareness and network with industry decision-makers currently using additive manufacturing technologies as well as those seeking more information to take the technology from prototype to production.

**WHAT IS DIFFERENT ABOUT OUR SPONSORSHIP PACKAGES?**

Delegates will have the opportunity to personalize their experience at AMPA14, and in that same spirit we will provide different options to tailor your involvement precisely to what you need. The basic packages can be complemented with one or more add-ons, depending on the level of involvement that you require.

**DEMONSTRATE THOUGHT LEADERSHIP**

3D printing and additive manufacturing are among the most talked about technologies in manufacturing today. You may be pioneering advances in these areas, but do your customers know what differentiates you from your competitors? Use targeted, editorially reviewed keynotes and case studies to demonstrate thought-leadership to your target audience.

**RAISE BRAND AWARENESS AND INCREASE YOUR PROFILE**

Any solutions selected by manufacturers must be subjected to careful comparative cost-benefit analysis. Of course, businesses take into account the profile, credibility and market leadership of potential suppliers to support their advanced manufacturing strategies. Your organisation must be at the forefront when these decisions are made. Engage with your audience with targeted branding and profiling campaigns directed at leading manufacturers.

**MEET AND NETWORK WITH DECISION MAKERS**

Thought-leadership, branding and profiling are converted into contracts through extensive face-to-face relationship building. As an industry-focused event dedicated to the needs of manufacturers, this interactive forum enables you to meet key decision-makers in one place at one time, giving you the best possible chance of influencing them.

**Who Will You Meet:**

- CEO
- President
- VP, Engineering
- VP, Advanced Manufacturing
- VP, Technology
- VP, Materials
- Director of R&D
- Director of Materials & Manufacturing Advanced Programs
- Head of Engineering
- Head of Manufacturing Engineering
- Head of Advanced Manufacturing
- Head of Manufacturing Improvements
- Head of Rapid Prototyping
- Program Manager
- Senior Manager - Advanced Manufacturing Engineering
- Senior Design Engineer
- R&D Director
- Technical Fellow

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- Consumer Goods
- Sports Equipment
- Architecture
- Fashion
- Energy
- Motorsport
- Oil & Gas
- Electronics
- Telecommunication Equipment
- R&D Institutes
- Software

**This Year, Join Us In NEW YORK CITY!**

During your visit you could:

- Arrange meetings with a plethora of additive manufacturing companies headquartered in the city
- Indulge in culture, from Times Square and Central Park to the Empire State Building and The Metropolitan Museum of Art
Pre-Conference Workshop
Tuesday AUGUST 26

IF YOU CAN THINK IT YOU CAN PRINT IT

Additive Manufacturing Workshop, Demonstration And Design Competition
A Chance To Learn About The Process, Interact With Machinery And Have Your Own Design Printed In The World’s Largest 3D Printing Store
- Run by Sylvain Preumont, Founder, iMakr
- iMakr Store, 152 Allen Street, New York, NY 10002

Concept: “From Idea To Design Production”
- Workshop Presentation By Sylvain Preumont, Founder, iMakr

11.00 - 1.30 Session 1 - Designing for 3D printing
- How the design is transferred to a printable format
- Download platform walkthrough
- How to decide what materials to use
- How to decide which technology and equipment to use (relative to volume, speed, accuracy)
- How the product is printed
- Applications: architecture, toys and games, wearable technology, camera accessories
- How to scale up 3D printing into large scale manufacturing

1.30 - 2.30 Design Winner Announced And Production Printed Onsite
- The winning design will be announced and will be printed in front of the audience in real time

2.30 - 4.00 Interaction With Machines On Site
- A chance for delegates to discuss various aspects of the process with iMakr’s Lead Engineer and interact with and ask questions on:
  - Printers
  - Scanners
  - Printed Objects
  - Design Suites

SPEAKER LIST SNAPSHOT:

- Ralph Resnick, President & Executive Director / Founding Director, NCDMM / America Makes
- Gerd Manz, VP, Technology Innovation, adidas Group
- Brett Lyons, Material & Process Research Engineer, Boeing Research and Technology
- Kam Hosn, Vice President, Rezvani Motors, RAD
- Sarah Sclarsic, Director Of Business, Modern Meadow
- Nancy Liang, Co-Founder, Design And Business Lead, Mixee Labs
- Piet Meijis, Associate Partner, Rietveld Architects
- Dan Campbell, Program Manager, Aurora Flight Sciences
- Dan Dempsey, Additive Manufacturing Engineer, New Balance Athletic Shoes
- Francis Bitonti, President & Founding Director, Francis Bitonti Studio
- Pete Stephens, Director of Program Management, Local Motors
- Allegre West, Project Manager, Local Motors
- Clara Asmail, Senior Technical Advisor, NIST MEP
- Louis Rondeau, Director of Product Development, Confluence Watersports
- Mary Huang, Founder, Continuum Fashion
- Josh Jacobson, Co-Founder & CEO, Viktorian Guitars
- David B. Saint John, Postdoctoral Researcher, Penn State University
- Tim Gornet, Manager, Rapid Prototyping Center Operations, University of Louisville

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