

URTeC U-Pitch 2019

AGENDA

- Team background and origins
- Our big pivot
- Progression of manufacturing tech and why Cold Metal Fusion is important
- How the tech works
- Augmented materials are the future
- Applications
 - Embedded electronics
 - Functional Coatings
 - Augmented Materials
- Milestones and Future Financials

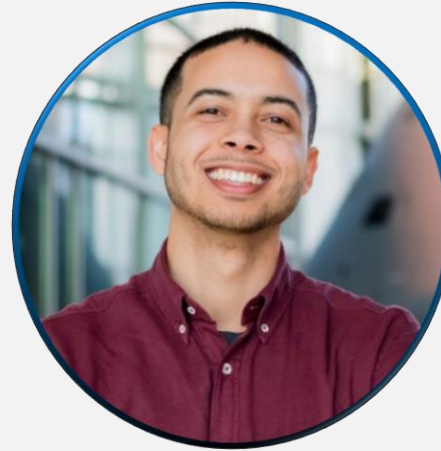


TEAM

CO-FOUNDERS



Deepak Atyam – CEO



Alex Finch – President



Jesse Lang – VP Operations



Marshall Space
Flight Center



Langley
Research
Center



Jet Propulsion Laboratory
California Institute of Technology





ORIGINS PT. I

ORIGINS PT. 2

Challenged by
NASA to 3D
PRINT first
rocket engine
from a university



2013



2015



2016

Action videos (sound on)

PIVOT

Developing new 3D printing technique for rapidly producing rocket engines

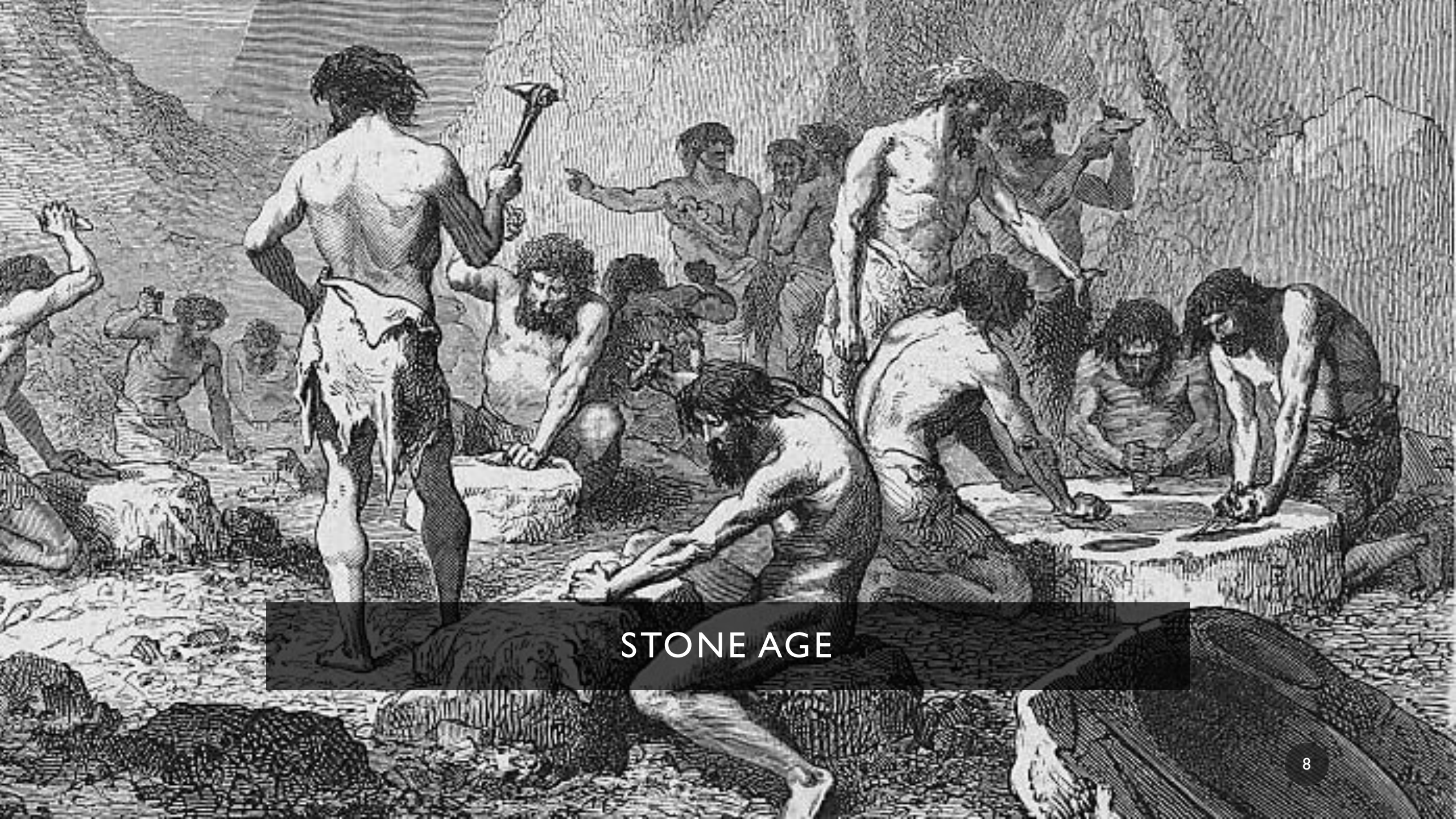


Over **250** customer interviews in industry



Market demand too risky
Scope of solution was smaller than expected





STONE AGE

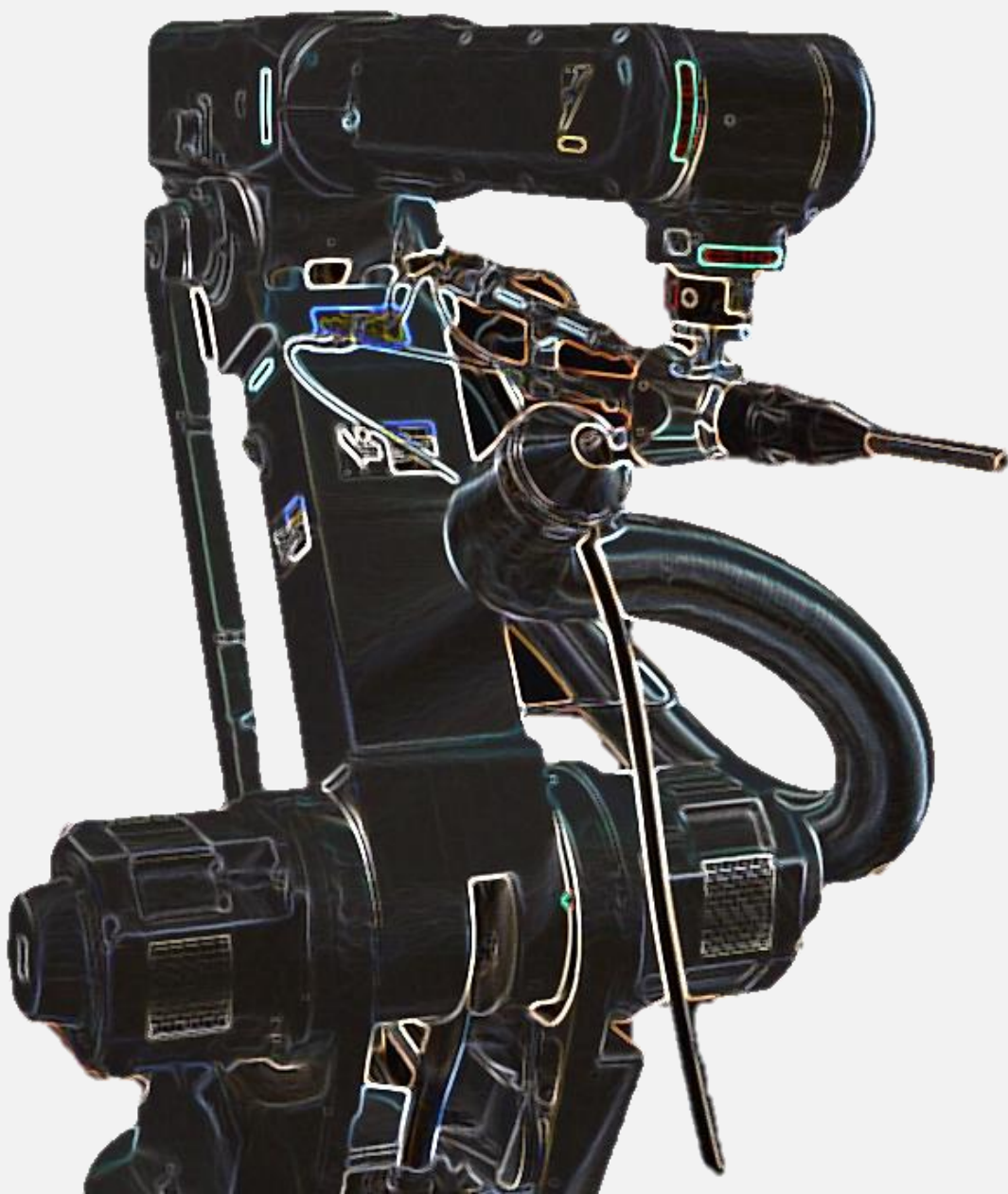
BRONZE
AGE



IRON AGE





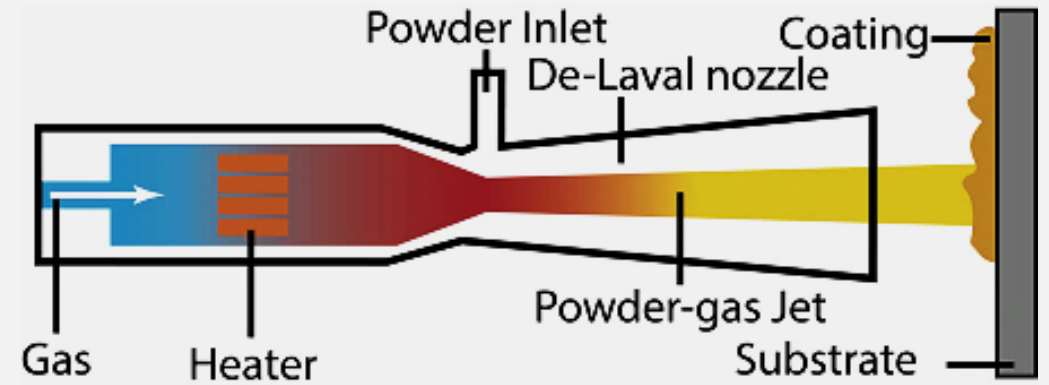


COLD METAL FUSION

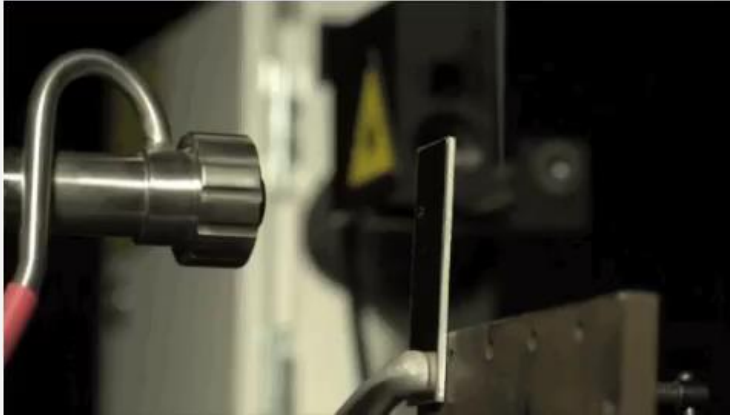
WHAT IS COLD METAL FUSION?

How it works:

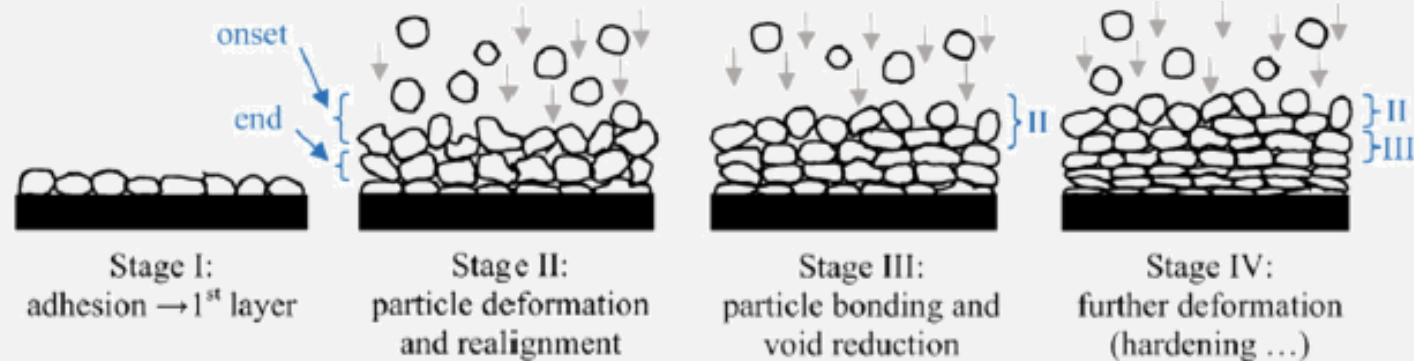
“spray” metal powder at supersonic speeds =
impact & deposition onto substrate



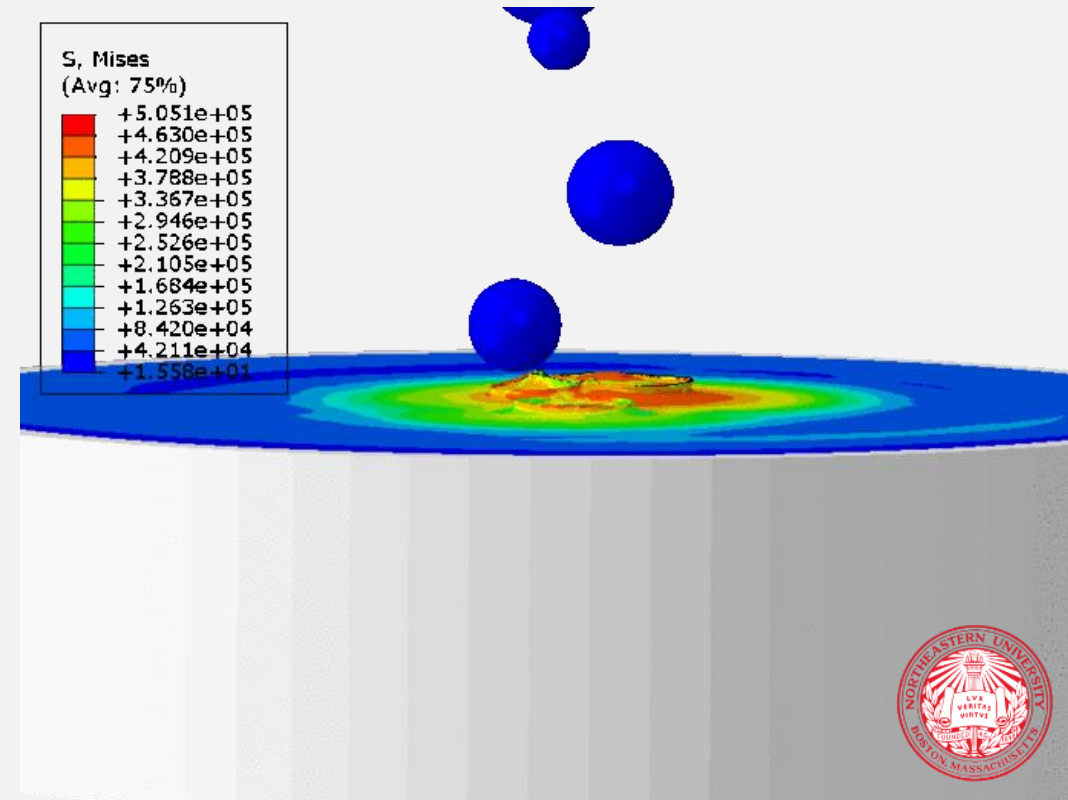
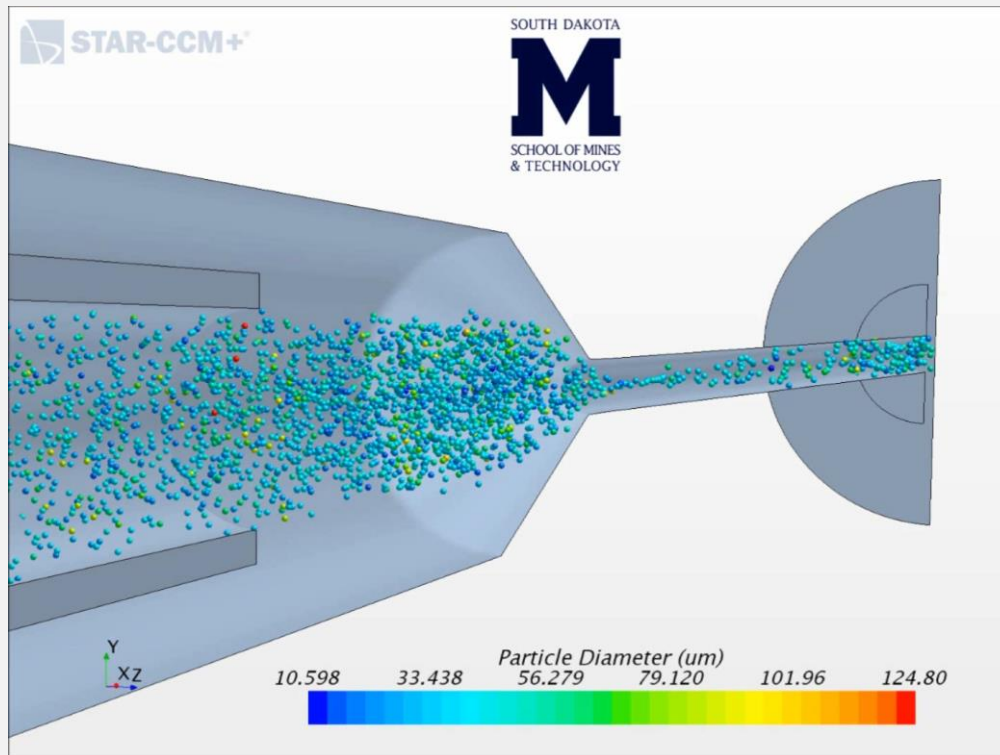
Real time
(video)



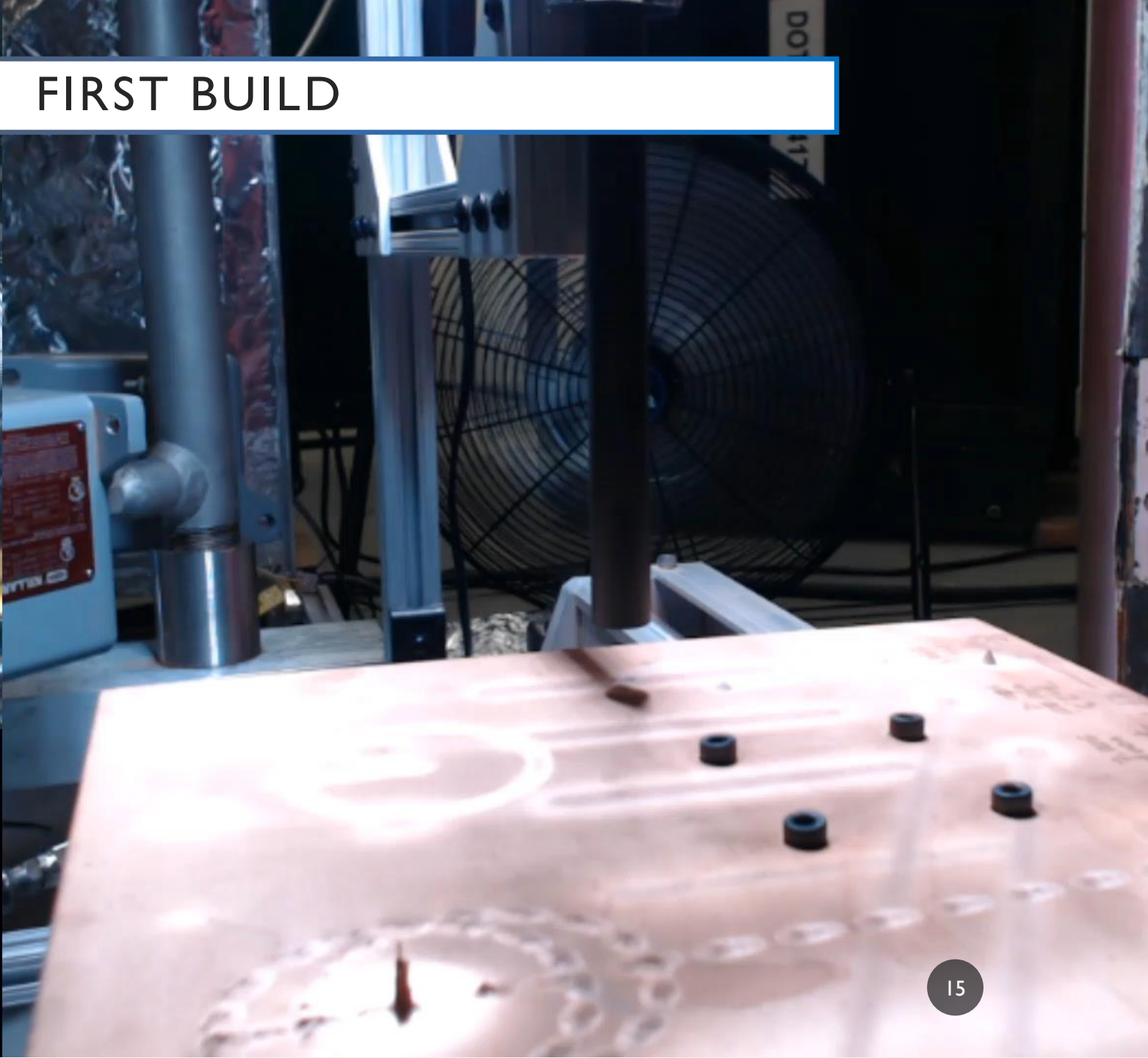
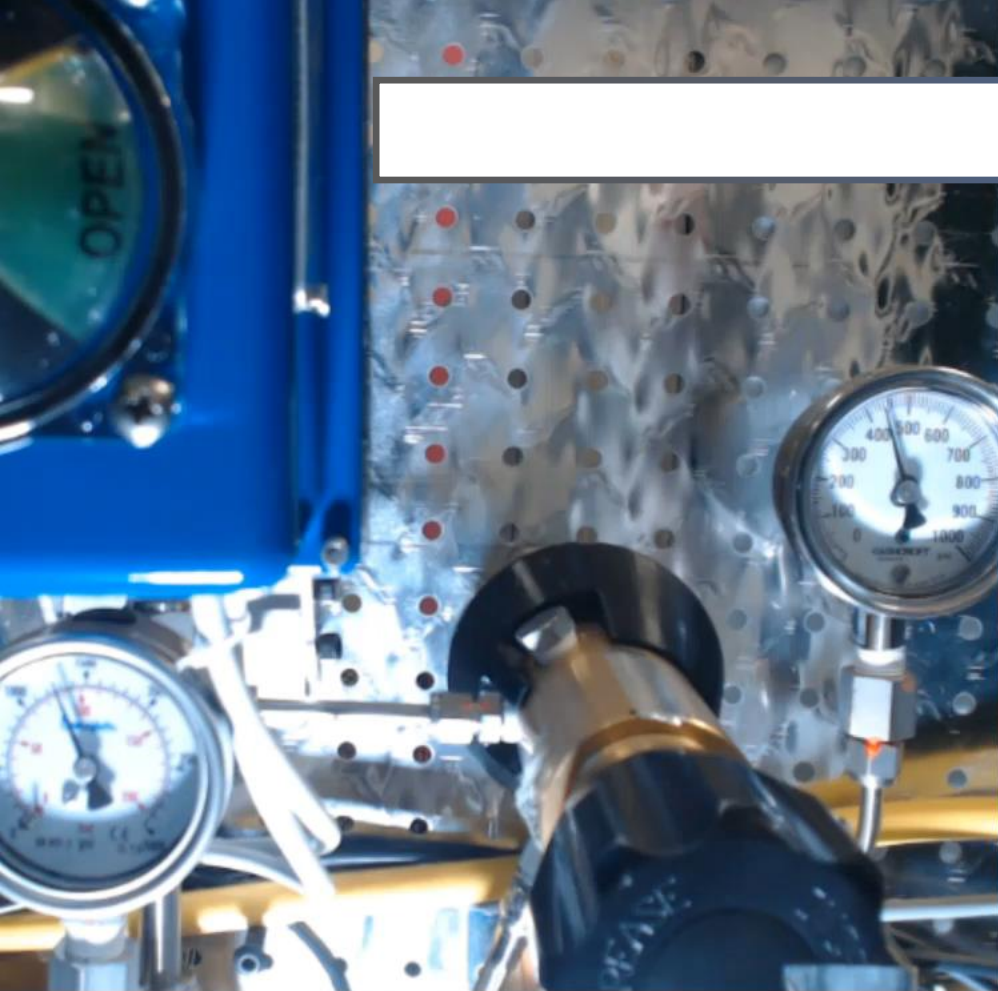
Slow motion
(video)

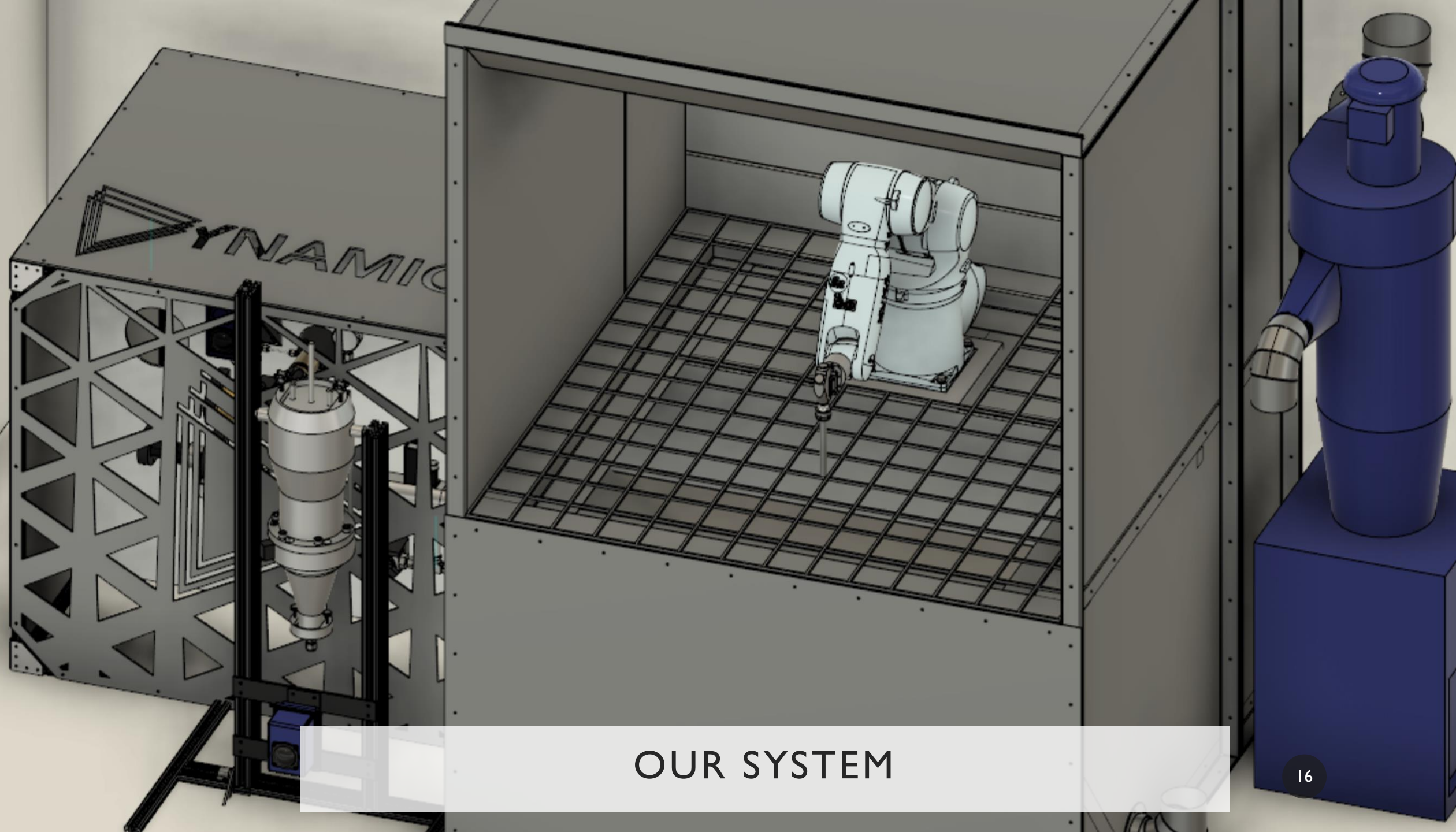


HOW COLD METAL FUSION WORKS

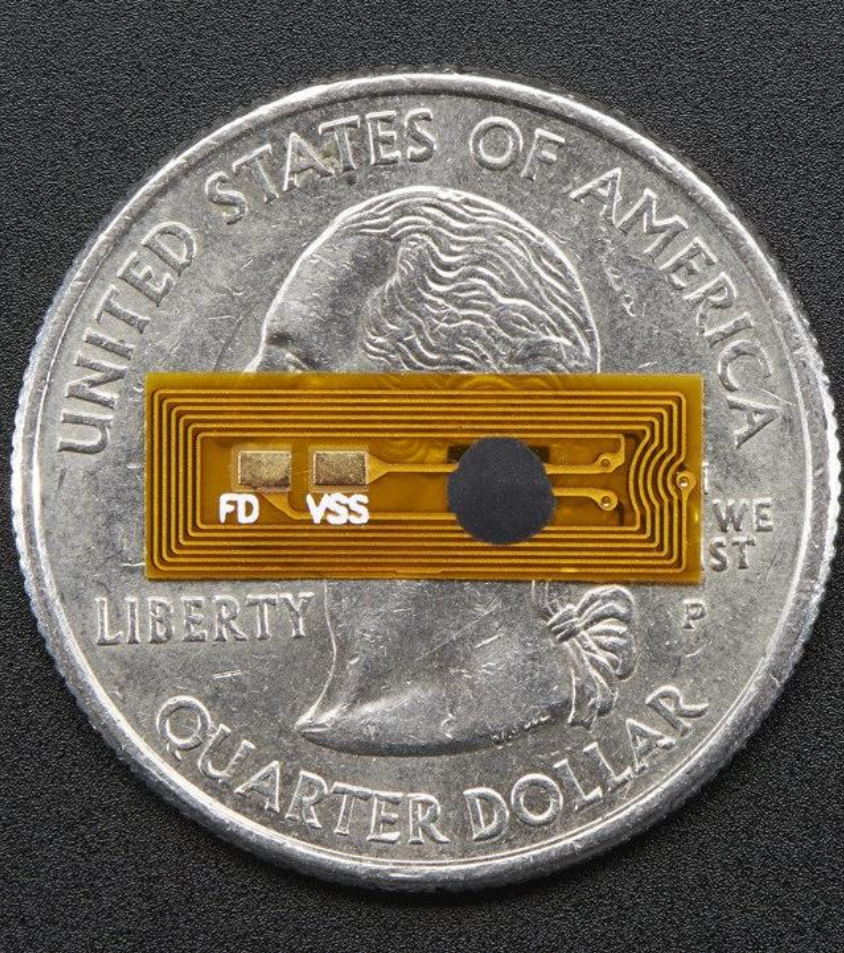


FIRST BUILD





OUR SYSTEM



APPLICATIONS

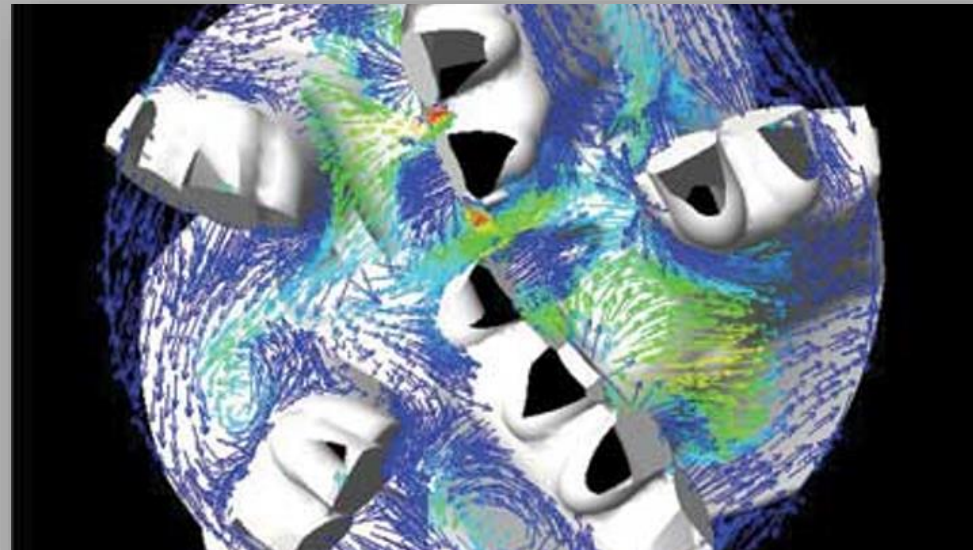
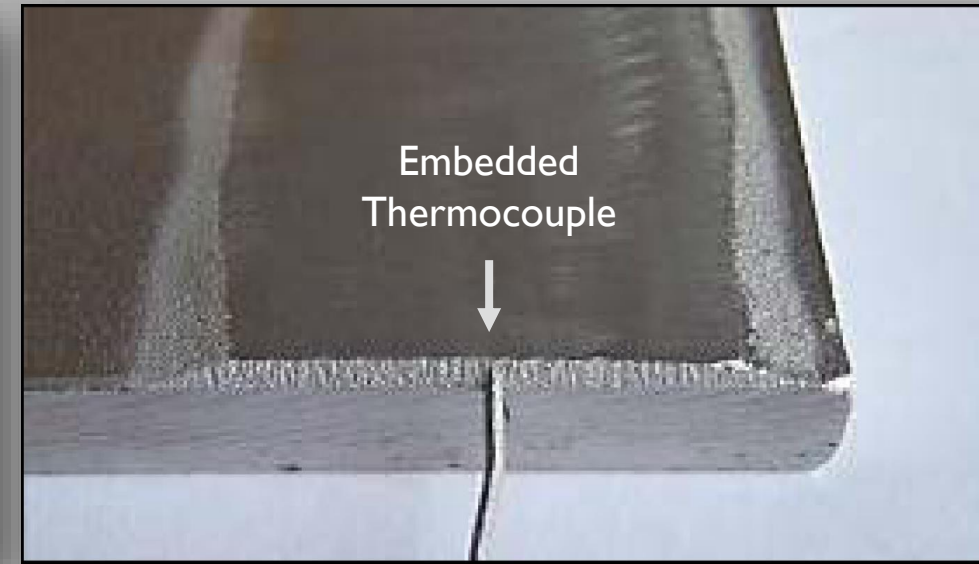
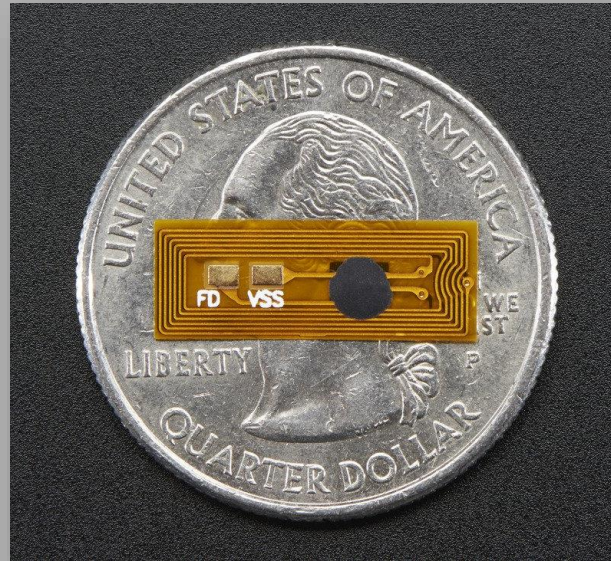
EMBEDDED ELECTRONICS

Value Propositions:

- Tamper/counterfeit supply chain
- Direct point sensing of part
- New aesthetic functionality
- EMP shielding
- Increased thermal usage range of electronics
- Electronic erosion protection
- Electronic corrosion protection
- Obtain data at point of interest within part

Market Size (Global IoT Sensors):

- \$27.4B by 2022



Simulation of Drill Bit



FUNCTIONAL COATINGS

Value Propositions:

- Part erosion resistance
- Part corrosion resistance
- Structural stiffness at optimized locations
- Increased thermal usage range
- Electrical insulation
- Magnetic insulation

Market Size (Metal Coatings + Functional Coatings)

- \$26B by 2026

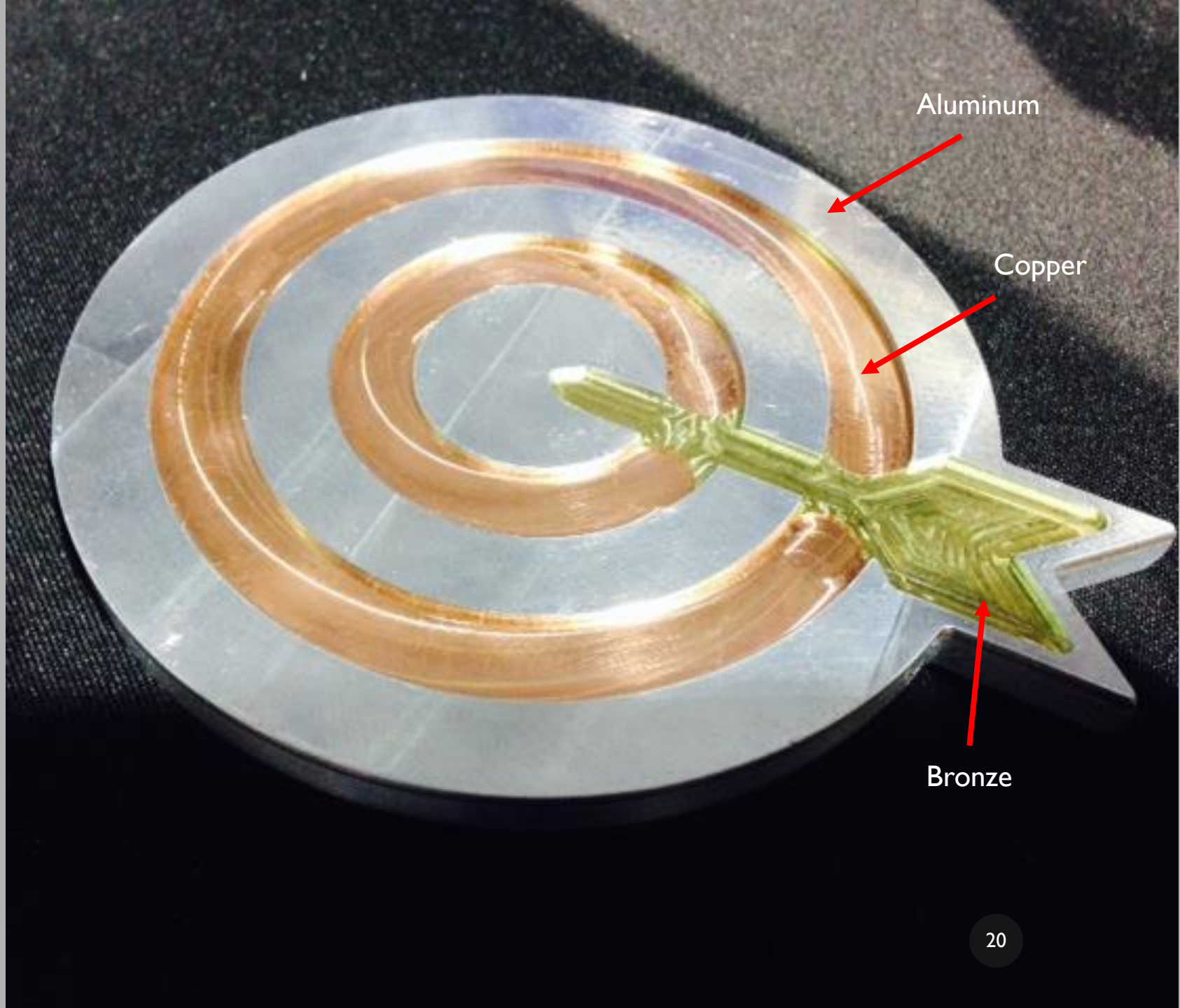
AUGMENTED MATERIALS FOR OPTIMIZED PARTS

Value Propositions:

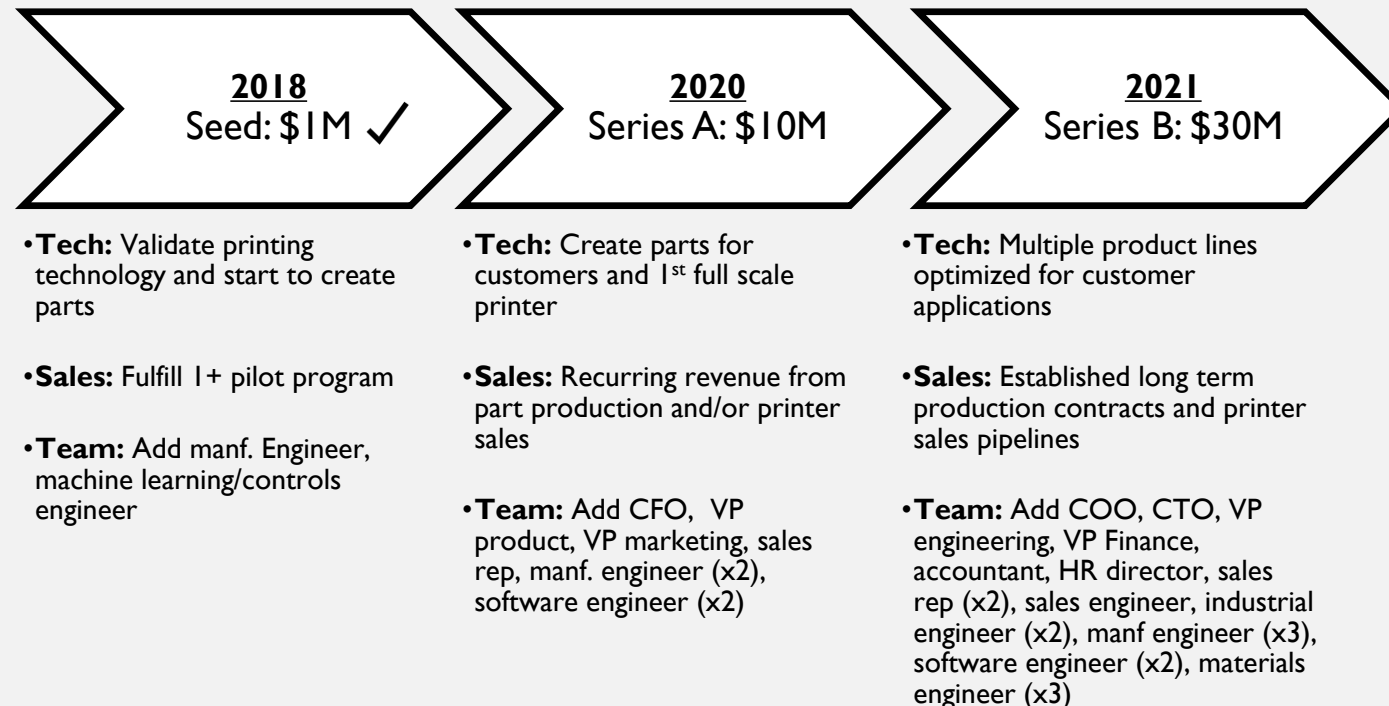
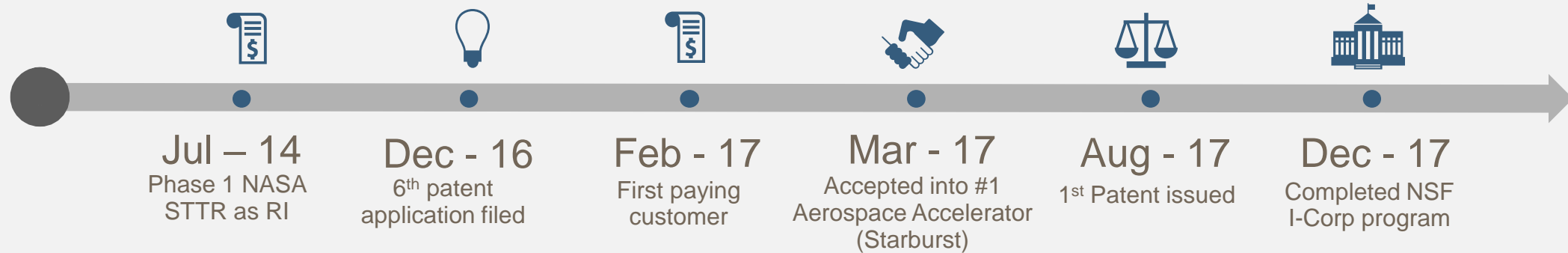
- Speed - the fastest method to add metal to any other metal or non-metal part
- Optimized part functionality
- Material cost savings
- Greater design freedom
- Greater aesthetic appeal

Market Size (Global Metal AM):

- \$23.3B by 2026



MILESTONES/FINANCIALS





Help us usher in the meltless age for manufacturing
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