Neotech Services MTP

Rapid Manufacturing via Laser Engineered Net Shaping™ Technology and Project Ideas.

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Company Confidential

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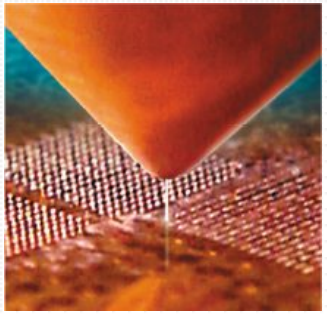
Neotech Introduction
LENS™ and M³D™ Solutions

- Founded 2001, developing the European market for 2 additive RM processes from Optomec Inc:

  M³D™ - Smaller Microelectronics and Biomedical components and devices, 3D processing – smart structures.

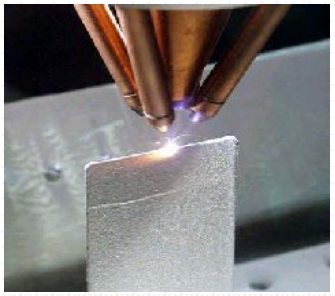
  LENS™ - Manufacture, modification and repair of high-value components for Aerospace, Defence and Medical Device applications



M3D™

- Activities in Design for RM started 2005.

- Interest in partnerships for integrated process chain:



LENS™

Design – Materials - RM Processing - Finishing - Certification

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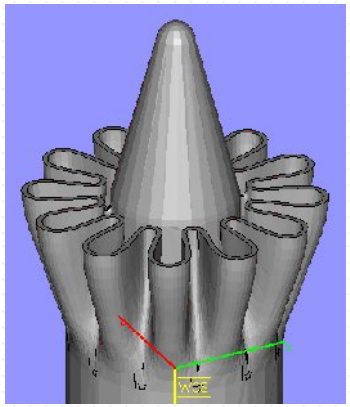
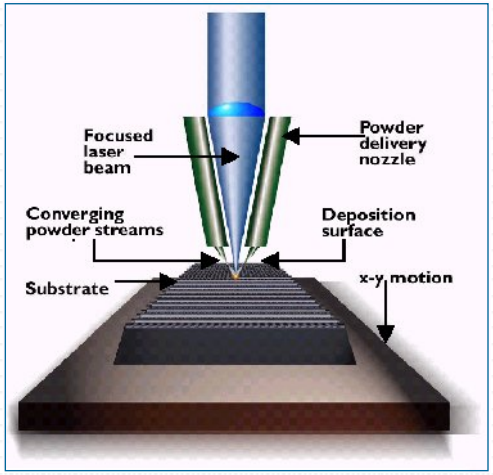
LENS™ Process Basics

Design



- 3D CAD Model
- Convert to STL file
- Process Set Up

Process



- Multi Nozzle Powder Delivery
- Powder melted via Nd:YAG or Fibre Laser
- Layer by layer part build/repair
- Up to 7 Axes range of motion
- Controlled Atmosphere (<10ppm O_2)

Part

- Near Net Shape
- **Fully Functional!**
- **Excellent Mechanical Properties**

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LENS Application Areas

Fully functional/critical parts in a wide range of Ti, Ni, Co and Steel alloys

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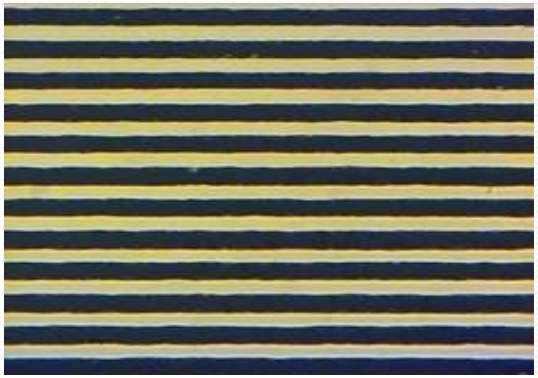
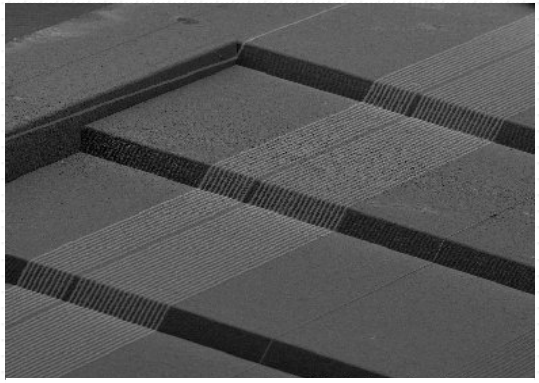
M3D Application Examples

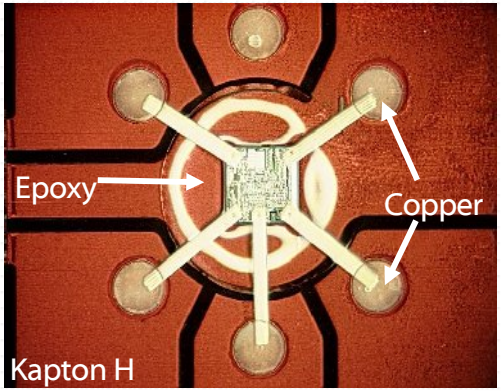


10 µm line width, 30 µm pitch

Ag on glass.

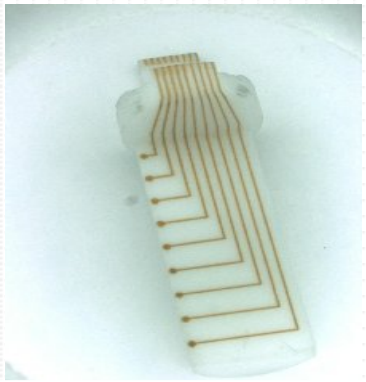


20µm lines over multiple steps

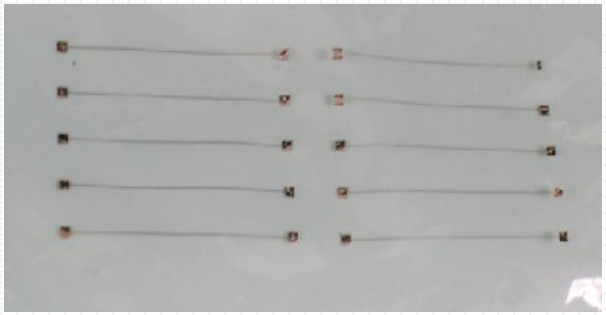


Direct Die Attach

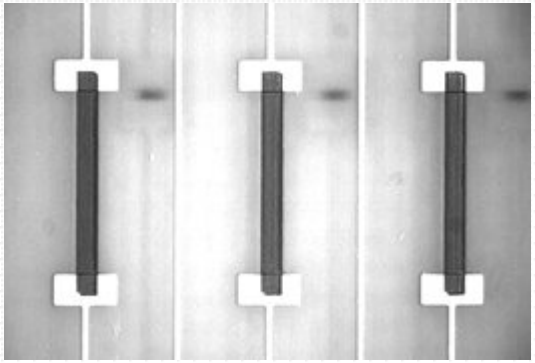
(wire bond replacement)



3D Circuits (Au on ceramic)



Cold Sintering (Ag on 10µm PE film)



Accurate Polymer Resistors

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Some Ideas & Comments:

* What is the objective?

Develop integrated process chain & novel design, address certification

* What's new vs. state of the art?

RM tends to be applied to designs from other processes, limits potential
Integrated process chain missing.

* What is the expected impact?

Accelerate take up of RP in the EU, define new products/markets.

* What are the competences?

Neotech – RM process, design & market knowledge, dissemination expertise.

* What still needs to be done? Maturity?

RM technology becoming production ready, needs integration, certification

* What is the time to market? So when is it ready to launch.

Market dependent: 1-5+ years.

* What are targeted partners / clients?

OEMS, SMEs, Research Institutes/Universities...

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