



In collaboration with:



Creative Design and Additive Manufacturing Lab

MetalONE update 7/2021

“Making good progress printing pure copper with a 250W laser. Typically done with a more powerful laser, but we are getting ~95% density from our first look. More results to come! “

Tim Gordon
Bachelor thesis Candidate and Student
University of Auckland, New Zealand

Dear supporter,
We started the month of July with a **great update** thanks to our friends from New Zealand at the **University of Auckland**.

We have no time to waste so let's get to the good stuff: **pure copper 3D printing with a 250W laser**. After the last update from [ICMATE](#) published just one week ago, we received some **interesting news** from the researchers of the Creative Design and Additive Manufacturing Lab in New Zealand. **Without any upgrade** to the system they accomplished **astonishing results** printing copper on our [MetalONE DMLS 3D printer](#).

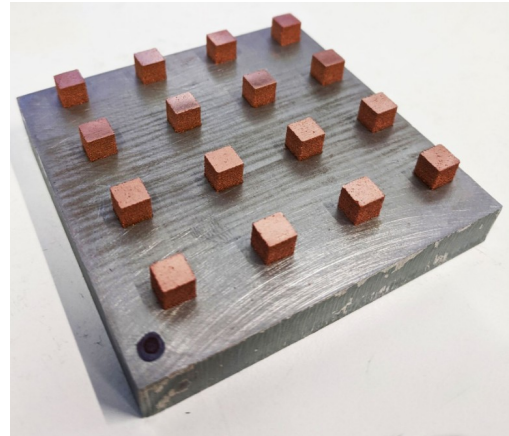


Fig. 1 First test cubes printed to evaluate the printing parameters and density structure (~95%)

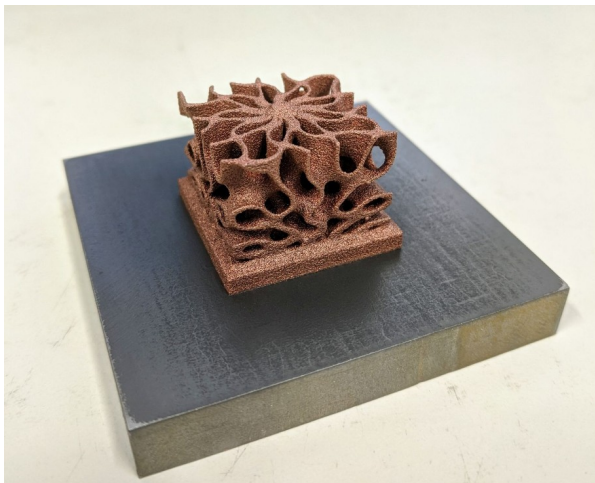


Fig. 2 Copper's heat transfer properties make it desirable for heat sink applications and the complex geometries achievable with AM gives improved performance for a given size.

As Tim Gordon stated, this work is part of an engineering research project and the **it's only the beginning**. Take a look at Fig. 2:

“Another pure copper print on the MetalOne printer. An optimized heat sink modeled using nTopology software, but I think it looks more like a tropical coral.”

Tim Gordon

Here's a testimony from **Olaf Diegel**, Professor of Additive Manufacturing at the University of Auckland.

“Just because there's tarnish on the copper, doesn't mean there's not a shine beneath... Here are our first copper prints from our little Sharebot MetalOne metal materials research printer. The prints were done by our students Tim Gordon and Rachel Jingnan (from the team of Dr. Fei Yang at Waikato University).”