



UNIVERSITY OF BIRMINGHAM

College of Engineering & Physical
Sciences

School of Metallurgy & Materials

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Letter to Editor

To whom it may concern,

I am pleased to present an original research manuscript entitled "*In-situ alloying laser powder bed fusion of Ni-Mn-Ga magnetic shape memory alloy using liquid Ga*" authored by Anastassia Milleret, Ville Laitinen, Kari Ullakko, Nouredine Fenineche and Moataz M. Attallah. We hereby submit this manuscript for your consideration for publication in the journal, *Progress in Additive Manufacturing*.

In this research, in-situ alloying laser powder bed fusion (L-PBF) of Ni-Mn-Ga is explored for the first time. The findings of our study demonstrate the successful achievement of a 14M martensite crystallographic structure by using a combination of elemental powders of Ni and Ga, along with liquid Ga.

The reported results are an important step towards the additive manufacturing of magnetic shape memory (MSM) devices. The use of in-situ alloying offers a promising approach to reduce costs and overcome the challenges associated with the selective evaporation of Mn, observed in previous research on L-PBF of Ni-Mn-Ga.

Considering the scope of *Progress in Additive Manufacturing* journal, we believe that our manuscript aligns with the publication's objectives and will make a valuable contribution to the field.

We assure you that neither this manuscript nor its contents have been previously published or are under consideration for publication elsewhere. Furthermore, we have no conflicts of interest to disclose.

Thank you for your consideration,

Yours faithfully,

Anastassia Milleret

PhD Student

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