

## Preface

Here with, presents the third issue of the *International Journal of Peening Science and Technology*. This issue propagates new knowledge to academia and industry related to the science and fundamental theory of peening science and the different strengthening techniques available for engineering materials. This is a great privilege for me and it also bring me a great pleasure, because this new journal to cover these specific topics is not only important, but acts as a dedicated platform to foster collaboration and extend interest in these areas ensuring the advancement of the field.

It was necessary to specifically introduce this issue and the content within it as some of the papers published herein were very briefly presented at the 7<sup>th</sup> International Conference on Laser Peening and Related Phenomena (LSP2018), hosted at the campus of the National University of Singapore and jointly organised by Coventry University, UK on 17<sup>th</sup> to 22<sup>nd</sup> June 2018.

These papers fit into the wider scope of the journal and were peer-reviewed by at least two or more referees to ensure the work being published is novel and rigorous. I would firstly like to thanks the authors for taking the time to submit theses extended papers. The first paper demonstrates the property of different frequency distributions of the bulk and ultrasonic surface waves and applies filtering functions together with Hilbert transform, which gives instantaneous frequency and amplitude in order to separate and extract the detailed features of the ultrasound signal. These findings can be useful to investigate defects and monitor thickness of offshore structures in real-time.

The second paper reported on a new two-stage laser removal process of thermal barrier coating and bond layer of an aero engine components as an alternative to a conventional chemical bath process. Further implementation will result to safer and greener environmental conditions.

The third paper presents laser shock peening of a silicon nitride ceramic and evaluated preliminary findings of a brittle material that is usually unconventional since ceramics are hard brittle and comprise of low ductility. This paper has the potential to advance further work in this line of research.

The fourth paper (although not presented at the LSP2018) was invited and is focused on the strengthening a new Hastelloy-X, superalloys with the use

of laser shock peening. This work is presented in significant detail, potentially contributing to the application of Hastelloy-X in a gas turbine environment as well as in high temperature gas cooled reactors where cyclic loads are prevalent.

I sincerely hope these papers aid and inspire researchers to undertake further work on these topics and act as a fruitful read to enhance and update knowledge, and lastly, encourage researchers to continue their contributions to the journal.

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