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EDITORIAL

From the Editor-in-Chief of RIMA

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It is with my greatest pleasure that I launch this journal, on the 22nd of February 2022, entitled Research on Intelligent Manufacturing and Assembly (RIMA) to increase research coverage on novel theories, methodologies, and applications in the domain of smart manufacturing. As we are currently in Industry 4.0, the next phase of industrialization has already begun to dawn upon us, which is Industry 5.0. In today's rapidly advancing world, today's breakthroughs in technology quickly becomes obsolete as organizations quickly adapt to stay afloat and abreast each other. The term Industry 5.0 can be defined as humans working alongside intelligent systems like robots, in order to improve efficiency, accuracy and throughput. This can be achieved by leveraging on novel and advanced technologies and algorithms that today's scientists and engineers are constantly improving on. This journal seeks to highlight the hard work and brilliant ideas by these professionals and share it with the world, whilst providing them with due recognition.

This journal would be the bridge between researchers and industry practitioners. The key theme on smart factories encompasses many topics of interests; for example, digital design, novel control algorithms, digital twins, cobots (collaborative robots) and more. Furthermore, in today's pandemic world which has significantly transformed the way traditional manufacturing industries operate, there is an even greater drive for a change in the manufacturing paradigm. Scientists and engineers of today should take bold steps in proposing and validating new workspace architecture that is reflective of the future. For instance, the development of digital twins or even virtual collaborative manufacturing are key drivers as we move into a future where both the virtual world and reality become seamless.

One of the popular areas of research would be intelligence-drive digital factory. This can extend into cyber-physical systems [1], novel augmented and virtual reality applications [2], expert systems [3], and more. These driving technologies help propel new and efficient applications in human-robot interactions within factories of the future. Furthermore, intelligent systems are able to interact, train and assist human operators in skilled tasks, without the additional requirement of expert human intervention.

Next, theoretical understanding of natural material behaviour and human action recognition in the context of intelligent factory is also an imperative thrust in this journal. The use of theoretical modelling and simulations [4–7] in mechanical and biological properties in smart manufacturing has the potential to reduce unnecessary costs whilst improving lead time in the formulation of new designs and products. Additionally, human-centric recognition through pose estimation [8–10], facial detection [11] or hand detection [12] can also lead to enhanced safety within factory grounds or better human-robot interaction opportunities.

Finally, I would like to extend my heartfelt thanks to the dedicated team of administrative support staff and Editorial Board members, both present and future, for their passion and hard work in growing this new journal into a respectable one. I wish all prospective authors the very best in their work and I look forward to receiving your submission to build up the very corpus of knowledge that will form the foundation of tomorrow's manufacturing businesses.

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