Developing Resilient Supply Chains in a Post-COVID Pandemic Era: Application of Artificial Intelligent Technologies for Emerging Industry 5.0

Theme: As the ongoing COVID-19 pandemic wreaks our society and economy around the world, modern supply chains (SCs) across the globe are facing unprecedented stressful situations due to uncertain business environment. This rise in concerns for SC networks operating on the global level and raise in operating costs and new financial barriers. Hence, SCs is under an increased level of scrutiny and there is a need to develop resilient SCs, which can sustain in the ongoing and post-COVID pandemic. To ensure such resiliency, advanced artificial intelligence (AI) technologies offered by the fifth-generation industrial revolution (also known as Industry 5.0) will be the key to tackle disruptions due to uncertain business environment. These technologies will provide enough support to build connectivity of each element of SC and provide better decision making in cooperation between man and machine with intelligence. In other words, AI technologies (such as CPS, IoT, blockchain, fuzzy inference system, augmented reality, neural networks, stacked autoencoders, graph and life-long neural networks, meta-and deep reinforcement learning, and evolutionary algorithms) have the role to play an important part in enhancing the quality of modern SC, which combines man, machines, and operations to instigate/guide the overall economical productions to mitigate future uncertainties. Hence, the motivation behind this special issue is to further explore the abundant applications of these Industry 5.0 based AI technologies to enhance the quality of operation in modern SCs under uncertainty and disruptions created by the pandemic.

This special section will focus on (but not limited to) the following topics:

- Novel AI-based analytics on data to improve the process and product design for resilient supply chains
- Application of emerging AI for resilient supply chains
- Data-driven and machine learning-based demand forecasting and logistics management during the uncertain business environment
- AI-based SC network design and location planning for resilient SC
- Cloud and data analytics-based inventory management • Intelligent solutions for future resilient SC
- Novel nature-inspired optimization algorithms with AI technologies in enhancing connectivity in Industry 5.0 for SC
- Supplier selection and management by AI technologies for resilient SC
- Internet of things (IoT) and Cyber-physical system in Industry 5.0 in uncertain business environments
- Big data, cloud, and data analytics in industry 5.0 for effective analysis of post disruption data after disruptions
- Smart strategies for coordinate stakeholders in SC post disruptions
- Smart strategies to design products for resilient SC

Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE Transactions on Industrial Informatics http://www.ieee-ies.org/pubs/transactions-on-industrial-informatics . Please submit your manuscript in electronic form through Manuscript Central web site: https://mc.manuscriptcentral.com/tii . On the submitting page #1 in popup menu of manuscript type, select: SS on **Developing Resilient Supply Chains in a Post-COVID Pandemic Era: Application of Artificial Intelligent Technologies for Emerging Industry 5.0**

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Regular manuscript length is 8 pages.

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable: Deadline for manuscript submissions   **September 30, 2021**
                       Expected publication date (tentative)   May 2022

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