The Journal of Engineering

Call for Papers

Submissions Open: 30th June **Submission Deadline:** 30tt September 2020

Section Editor: Paul Krause, University of Surrey, UK

Special Issue on:
Industry 4.0: Infrastructure Developments

In a highly competitive and changing business climate, manufacturing divisions are looking for ways to quickly reduce costs, improve operations, and adapt to regulatory requirements, such as the need to move towards "net zero emissions" and the low carbon economy.

Advances in sensors, communications, big data analytics and artificial intelligence allow for new solutions to address these challenges more competitively than traditional means. These changes collectively are responsible for the transition towards Industry 4.0.

Industry 4.0 utilizes collected data across manufacturing divisions to enable faster, more flexible and more efficient processes to produce quality products at economic rates.

Sensors are deployed throughout the product lifecycle to measure process variables such temperature, pressure, liquid level, flow, pH, voltage, current, frequency, position, speed, humidity, vibration and more. With the application of machine learning and artificial intelligence, these inputs can be used to create "intelligent" sensors that can perform automated detection, testing and classification of objects and features. Distributed computing and 5G networking also play important role in ensuring faster and more responsive communications integration and real-time analytics across the Industrial Internet of Things (IIoT).

We are interested in research on Developing software architecture for Industry 4.0, including Big data analytics, Horizontal and Vertical integration, IIoTs, Additive manufacturing control, Augmented reality, Simulation and Cloud.

We are also interested in work on developing AI techniques, including meta-heuristics, machine learning and optimization algorithms, communications and networking management, studying characteristics of IoT networks and offering intelligent cybersecurity solutions in IIoTs.

This special issue serves as a repository for discoveries and advances featured at UPCON 2020. All contributors working with Industry 4.0 architecture are encouraged to submit full papers for publication in this special issue. Relevant contributions are welcome from authors who could not attend the conference.

Topics of interest include, but are not limited to:

– Machine learning for smart sensors in Industry 4.0
– Cloud network in Industry 4.0
– Data center enabled technologies in Industry 4.0
– Software frameworks (MapReduce, Spark Etc) and simulations in Industry 4.0
– Big Data as a Service (BDaaS) including frameworks, empirical approaches and data processing techniques in Industry 4.0
– Business Process as a Service (BPaaS) including workflows and supply chain in IoT and big data in Industry 4.0
– Business Process Management in Industry 4.0

– Software architecture and middleware in Industry 4.0
– Networking and communication protocols in Industry 4.0
– Machine to Machine communications in Industry 4.0
– Energy efficiency of processes chain in Industry 4.0
– Software engineering in Industry 4.0
– Architecture for secure and interactive in Industry 4.0
– Systems and services computing in Industry 4.0
– Algorithms, software engineering and development for security, privacy and trust in Industry 4.0
– Intrusion and detection techniques in Industry 4.0

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