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## Editorial

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**Biographical notes:** Fei Tao is an Associate Professor at School of Automation Science and Electrical Engineering in Beihang University (Beijing University of Aeronautics and Astronautics) since 2009. He received his PhD from Wuhan University of Technology in 2008. From 2007 to 2009, he worked as a Research Scholar and Postdoctoral Researcher at University of Michigan-Dearborn, USA. His research interests are focused on service-oriented manufacturing system (e.g., cloud manufacturing and manufacturing grid), manufacturing service management, intelligent optimisation theories and algorithms. He has authored two monographs and over 60 journal and conference articles of these subjects. He was nominated and elected to be a research affiliate of CIRP (The International Academy for Production Engineering) in 2009. He is currently the Editor-in-Chief of *International Journal of Service and Computing-oriented Manufacturing (IJSCOM)*, and an editorial board member of two other international journals.

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I am very pleased to introduce the first issue of the first volume of the *International Journal of Service and Computing Oriented Manufacturing (IJSCOM)*. In order to realise the goal of fastest time-to-market, highest quality, lowest cost, best service, cleanest environment, greatest flexibility, and highest levels of knowledge (TQCSEFK), a lot of advanced manufacturing models and technologies have been proposed during the last two decades. The typical instances are computer-integrated manufacturing (CIM), virtual manufacturing (VM), intelligent manufacturing (IM), internet/networked manufacturing (NM), green manufacturing (GM), agile manufacturing (AM), global manufacturing, concurrent engineering (CE), application service provider (ASP), reconfigurable manufacturing, manufacturing grid (MGrid), sustainable manufacturing, production service system (PSS) and industrial production service system (IPSS), cloud manufacturing (CMfg), and crowd manufacturing. These models or technologies have played very important roles in manufacturing related fields, and have made great contributions to the development of modern manufacturing and industry.

Although each of the above-mentioned advanced manufacturing model or technology has its own emphasis, they all centre on internet/network, cooperative work, and resource sharing. The general aims of them are to realise the change from production-oriented manufacturing to service-oriented manufacturing (SoM), and cooperate with other enterprises to make full use of global manufacturing resources and the capabilities in the manufacturing whole-life cycle process.

The common driving and enabling technologies and force are IT services and technologies (e.g., web services, service-oriented architecture (SOA), service-oriented consulting methodology (SOCM), ontology, BEPEL, service computing, etc.), advanced

computing technologies (e.g., distributed computing, parallel computing, cluster computing, high performance technology (HPC), ubiquitous/pervasive computing, intelligent computing, P2P, grid computing, cloud computing, quantum computing, etc.), as well as other theories and technologies in the field of internet, computer science, operational research and management science.

Therefore, *IJSCOM* aims to establish a bridge between manufacturing and related fields such as information systems and technology, internet, computer science, operational research and management science, in particular the field of IT and advanced computing technologies, so as to share and disseminate knowledge among all those involved in these areas.

By no means, the speed in the reviewing process implies relaxing the quality requirements we set for *IJSCOM*. The editorial decision is based on the judgement of at least two independent reviewers in a double blind refereeing process where the identity of both authors and referees is not disclosed. Therefore, a manuscript must have an initial page with the names and affiliations of the authors, separate from the text. Additionally, authors are requested to omit, in the initial manuscript, acknowledgements, frequent self-references or other aspects that may disclose their identity. Each received paper is sent to three independent referees, experts in their areas and a paper is accepted only if all the three referees at the end agree with the publication of the paper.

*IJSCOM* primarily publishes original, empirical and review papers, case studies of current interest, conference and technology reports, and book reviews. In addition to the regular issues of the journal, *IJSCOM* publishes special issues devoted to important topics in the areas listed above. Topics of interest to the *IJSCOM* include, but are not limited to, the following areas:

- SoM and computing-oriented manufacturing (CoM) systems, including architecture, theory, method, modelling, application, and case studies of:
  - 1 SoM system
  - 2 CoM
  - 3 simulation-based manufacturing system
  - 4 event-driven business-driven manufacturing system
  - 5 cyber manufacturing system
  - 6 biological-based manufacturing system
  - 7 digital manufacturing
  - 8 multi-agent-based manufacturing system
  - 9 self-organising manufacturing system
  - 10 distributed manufacturing system
  - 11 ontology-based manufacturing system
  - 12 module-based manufacturing system
  - 13 remanufacturing and reconfigurable manufacturing system
  - 14 intelligent and flexible manufacturing system
  - 15 sustainable manufacturing
  - 16 PSS and IPSS

- 17 CMfg
- 18 crowd manufacturing
- Application of advanced computing technologies and IT in manufacturing, including:
  - 1 CMfg, applications of cloud computing in manufacturing
  - 2 manufacturing grid, applications of grid computing in manufacturing
  - 3 application of quantum computing in manufacturing
  - 4 application of intelligent optimisation algorithms GA and AI in manufacturing
  - 4 application of distributed computing, parallel computing, cluster computing, HPC, ubiquitous/pervasive computing, intelligent computing, P2P, etc, in manufacturing
  - 5 application of internet of things (IoT) in manufacturing
- Manufacturing resource, capability, and service management, including:
  - 1 management systems
  - 2 modelling, digital description and annotation
  - 3 creation, visualisation, realisation, deployment and delivery
  - 4 business components
  - 5 discovery/search and match
  - 6 composition
  - 7 value chain collaboration
  - 8 optimisation
  - 9 relationships
  - 10 monitoring and failure management
  - 11 quality of service (QoS) management, including QoS modelling, description, evaluation, extraction, comparison, aggression, etc.
  - 12 trust and reliability management
  - 13 planning, scheduling and control
  - 14 cost and price management
- Characteristics of SoM and CoM, including:
  - 1 application of complex theory in SoM and CoM systems
  - 2 complex characteristics involved in SoM and CoM
  - 3 dynamic characteristics of SoM and CoM systems
  - 4 scale-free characteristics of manufacturing networks
  - 5 virtualisation of SoM and CoM networks
  - 6 monitoring and control of SoM and CoM networks
- Supporting environment and tools for SoM and CoM.
- Simulation and modelling in SoM and CoM.
- Supply chain management for SoM and CoM.

- Enterprise production and business models for SoM and CoM.
- Optimisation problems in SoM and CoM, such as job scheduling, planning, partner selection, etc.
- Workflow, project management and collaboration in SoM and CoM.
- Implementation and management tools for SoM and CoM.
- Application of advanced intranet/internet technology in manufacturing, such as cyber physical systems (CPS), wireless sensor networks (WSN), IoT.
- Application and information system integration in manufacturing systems.
- Future manufacturing system and models.
- Marketing, business models, strategies for SoM and CoM.
- Law, ethics, standards, energy issues, environmental management for SoM and CoM.
- Application of artificial intelligence in SoM and CoM.

This inaugural issue of *IJSCOM* includes six papers, addressing different issues in SoM and CoM. We should mention that there is no specific reason in selecting these six papers for the inaugural issue of *IJSCOM* except that they are the first accepted papers. We have decided to publish the papers in the order of their acceptance dates.

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