



## **ADVANCED ENGINEERING INFORMATICS**

**Special Issue on  
Advanced Engineering Informatics and Knowledge Engineering Related to  
Innovation, Intellectual Property and Patent Analyses  
EES Article Type: “Innovation and Patent Analyses”**

Special Issue Editors

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A good indicator of the technology competitiveness of a country is the number of filed or granted international patents. The latest figures from the World Intellectual Property Organization (WIPO) show that USA, Japan, Germany, China, and South Korea are the top five patent filing countries. In 2010, China has aggressively filed 56% more international patent applications than the year before. Fast growing companies in digital communications, such as ZTE and Huawei in China, now rank among traditional leading international corporations (e.g., Panasonic, Qualcomm, and Philips) as corporate patent filers. These data indicate that many countries and global companies are putting major resources toward engineering innovation, design invention, and technology R&D in order to claim their intellectual property rights (IPR) for competitive advantages.

Broadly speaking, a patent is a knowledge document that depicts the information about the technology and describes the processes related to the invention. Patent data are increasingly used in sophisticated analyses and syntheses, helping R&D engineers investigate innovation, the advancement of relevant science, and technology-related activities. Effective analysis of innovations, mostly documented in patents, as well as in technical papers, better enables companies to understand cutting edge technology, form technical and strategic alliances, and develop R&D action plans. Three stages are important in this respect. First, identify current status in technology development and innovation. Second, derive critical R&D plans based on the updated domain knowledge. Third, understand the steps that need to be undertaken to implement technology for engineering applications so that viable use of innovative knowledge result.

The specific technical terms, the patent writing style, the length of patent documents, and the huge information content obtained from international patent cyber-depositories place great challenges for engineers and researchers to fully understand, foresee and utilize emerging technologies for applications. Thus, this special issue invites papers focusing on the advanced research in engineering informatics, knowledge representation, modeling and reasoning related to innovation, intellectual property, patent analyses, and technology adoption. The areas of interests include, but are not limited to:

- Patent and IP mapping, capturing inventions and technology trends
- Knowledge representation (ontology), modeling, reasoning, and visualization of patents and IP for artifact-centered engineering applications
- Modeling and tools for patent analyses to identify the innovativeness of a company or country
- Modeling and tools for creativity and its engineering implementation leading to new inventions, intellectual properties, and patents
- Intelligent systems for innovation based on IP and patent content analysis
- Tools for guiding and monitoring innovation adoption
- Tools for guiding innovation in business and technology-based entrepreneurship
- Portfolio-planning and road-mapping for technological development

A special issue will be organized in the Elsevier ***Advanced Engineering Informatics*** (*ADVEI*, ISSN: 1474-0346 – <http://www.elsevier.com/locate/aei>), a leading academic journal in the areas of engineering-related information science and technology. All papers forwarded for the special issue must use the online submission and editorial system for ***Advanced Engineering Informatics*** (<http://ees.elsevier.com/advei/>). To ensure that your paper is correctly identified for inclusion into the special issue review, it is important that you select "Innovation and Patent Analyses" when you reach the "Article Type" step of the submission process.

**Proposed schedule:**

- **Paper submission: August 2012**
- **Review results: December 2012**
- **Revised paper submission: February 2013**
- **Second review results: April 2013**
- **Notification of final decision: May 2013**

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