Preface

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In September 2014, the 2nd International Conference on Intelligent Systems and Image Processing and in March 2015, the 3rd International Conference on Industrial Application Engineering took place in Kitakyushu, Japan. These two conferences were organised by the *Institute of Industrial Applications Engineers* (IIAE, http://www.ia-engineers.org), and SERIKAWA Laboratory in Kyushu Institute of Technology, Japan. The annual organised series of conferences focus on exchanges of the new ideas and new practices in industry applications. These two conferences had accepted over 200 papers from over 20 countries in the world. The present special issue comprises selected contributions from the above two conferences.

This special issue's objective is to provide a platform for researchers to share their thoughts and findings on various issues involved in intelligent systems. After the careful review process, seven papers were selected based on their originality, significance, technical soundness and clarity of exposition. The papers in this special issue are organised as follows.

Xian et al. attempt to base webpage classification criteria on the open directory project (ODP) with a view to exploring specific patterns and rules in campus network user behaviour. The authors have put forward some novel ideas, procedures, and a framework concerning behaviour analysis and decision systems.

Narisha et al. propose a sliding mode observer for achieving the speed and position sensorless control based on estimating the rotor position of permanent magnet synchronous machines (PMSM). The simulation results show that the novel sliding mode observer is more effective than the conventional method.

THD and power factor for input current from sequential control and synchronous control, respectively, an optimum control theory which will decrease the harmonic and maintain the power factor is proposed by Jiao et al. Tests proved that the optimum control strategy for multiple thyristor rectifiers will conduct sequential control when in depth control and conduct parallel control in shallow control, and will achieve a lower harmonic content than complete order control with relatively same power factor.

Song et al. present a novel model of power consumption shifting with continuous market price function instead of the common stepwise piecewise function, and an applicable shifting scheme with three-tier architecture is also designed. The authors also provide an example to illustrate the correctness and effectiveness.

Fang et al. propose a fuzzy comprehensive evaluation (FCE) and support vector machine (SVM)-based intelligent production fluctuation monitoring and early warning system. The system can play an important role in ensuring production stability in oilfields, especially for giant oilfields and oilfields in high water-cut development stage.

Ni et al. propose a dynamic reconfigurable interpolator with linear, circular and NURBS interpolations. The functions of interpolator can be reconfigured during machining. The requirement for logic resource on-chip reduces evidently which makes it feasible to implement complicated interpolations using a limited area. Experimental results are presented to verify the performance of the dynamic reconfigurable interpolator.

Jiang et al. propose a novel approach for multi-object detecting by fusing RGB information and depth information using a RGB-D sensor on the robot system. The experimental results show that the proposed method yields good tracking performance in real world environment.

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