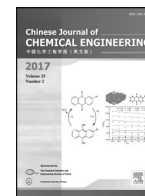




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Preface



It is generally believed that a chemical process mainly consists of separation units and reaction units. Although chemical reaction is the core of producing the desirable product, chemical separation is the key to process intensification because it accounts for 50% - 70% of the total energy consumption. In order to save energy and reduce pollution emission in chemical industry, we have to intensify the separation process first of all. In recent years, new separation technologies, such as special distillation, special absorption, new column internals, microflow techniques, mathematical modeling and so on, have been emerging, along with the new separation materials (e.g., ionic liquids, metal organic frameworks (MOFs), deep eutectic solvents (DES), structured catalysts, etc.). Anyway, chemical separation technology is the common topic between academics and industrialists to exchange new ideas and applications in the chemical engineering community.

In recognition of the importance of chemical separation technology, we decide to devote a special column in *Chinese Journal of Chemical Engineering* to this theme. The special column covers various aspects of chemical separation technologies, including the measurement and correlation of phase equilibrium data, removal of hazardous substances, recovery of high value-added substances, high gravity separation, innovative applications of new column trays and ionic liquids, and process simulation. The contents are presented by means of experiments, calculations, and theoretical analysis or their close integration. Some

separation technologies invented by Chinese authors have even been successfully applied in industry. It is noting that a small advance in this field may lead to significant economic and social benefit.

As a forum for university-industry cooperation, the International Chemical Separation Technology Conference (ICSTC) was held once every year. This conference series is different from others in that the university scholars present the most recent separation theory, technology and equipment directly to the industrialists, and the latter would promote their applications in practice. In line with the current policy on transfer and transformation of sci-tech achievements, this conference series becomes more welcome.

The special column contains 8 papers originally presented on the ICSTC-5 which was organized by State Key Laboratory of Chemical Resource Engineering (Beijing University of Chemical Technology) and China National Chemical Information Center (CNCIC) together. The guest editor thanks all the contributing authors and participants who supported the ICSTC-5.

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