Today's catalytic forecast: migrating front and hot spots

The cover picture shows the conversion of ethylene to 1-butene and 2-butene by using a fixed-bed reactor with the catalyst bed consisting of supported ionic liquid phase (SILP) catalyst particles. In their Full Paper on p. 162 ff., P. Wasserscheid et al. describe that the applied homogeneous nickel complex exhibits a high activity and selectivity to 2-butene. The observed catalyst deactivation is attributed to a migrating reaction/deactivation front travelling through the catalyst bed in combination with hot spot formation. The time until catalyst deactivation could be heavily prolonged by optimization of catalytic and process parameters.