

Prediction and control of polymer properties for HDPE process with Ziegler-Natta catalysts

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Nowadays the demands of end users are increasing and getting more sophisticated. That is, they want to get various kinds of products with strict quality specification at cheap prices. So most polyolefin industries are being forced to carry out frequent grade changes to meet the demands of end users. But since the polymer property control is carried out by operators manually, it is difficult to expect the stable and satisfactory results in every grade change. Consequently there exists a strong incentive to develop an on-line analyzer and automate the property control.

Therefore we developed an on-line monitoring system of polymer properties which is called virtual on-line analyzer (VOA) and applied this system to the commercial HDPE slurry process. This system was also used in the model predictive control (MPC) system.

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