

***A Study on the Aligning Control in High Speed Winding System  
with Middle Roller***

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***Abstract***— During the winding process, the winding strip will shift transversely, which will make the winding process unworkable, especially in high speed winding. The aim of this research is to design the aligning control system to keep the winding strip from shifting transversely out of certain range.

For aligning control, an aligning mechanism is required to be installed in front of the winding wheel. In some applications, a middle roller needs to be installed between the aligning mechanism and the winding wheel. The control characteristics for the aligning system with or without the middle roller are quite different. The control loop compensators were designed for both of them and the simulation and experiment results are also illustrated.

***Keyword*** : *winding system, dual feedback compensation, aligning control*