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# Plantwide Control of a Coupled Reformer/Ammonia Process

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## Highlights

- An integrated reformer/ammonia process is studied.
- A critical operating variable is the steam-to-methane ratio so as to achieve high conversion of methane and carbon monoxide.
- Air is fed to supply the stoichiometric nitrogen for the reaction with hydrogen.
- The oxygen combustion with methane provides some of heat for the endothermic reforming reaction.
- A control structure is developed that provides effective plantwide control.

## Abstract

Ammonia is one of the most important chemicals from a humanitarian perspective because of its vital use in fertilizer production to maintain food supplies for an ever growing world population. An earlier study explored the design and control of the ammonia process given a fresh feed of hydrogen and nitrogen. The importance of having the correct feed composition to satisfy the reaction stoichiometry was highlighted. The purpose of this paper is to study both the design and the control of a combined

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