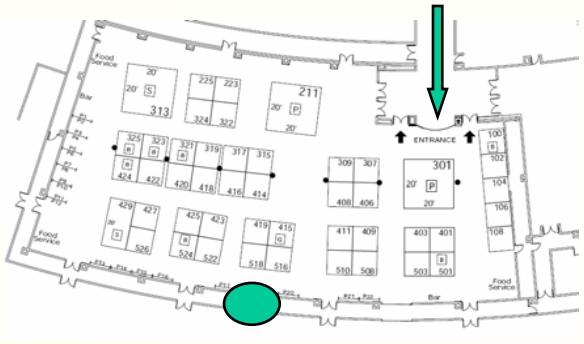
# Study of On-Board Ammonia ($NH_3$) Generation for SCR Operation

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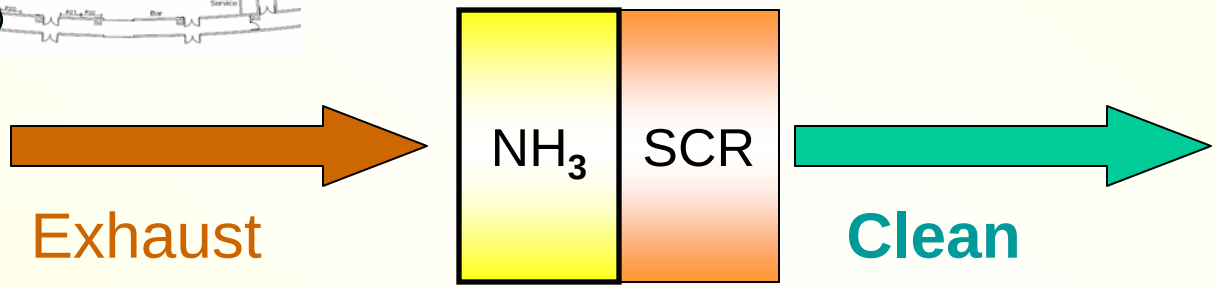
**Monday, Aug 3, 2009**




**(Non-Urea Source of $NH_3$)**

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# Project Summary: Poster P-16

Study of On-Board Ammonia ($NH_3$) Generation for SCR Operation (MIT)

**Rationale: Reduce complexity and cost of urea ($NH_3$)-SCR and LNT**

**Objective: Explore feasibility of on-board ammonia generation**

***(a) Does it work?***

***(b) Influence of temperature, flow, composition, catalyst on $NH_3$ kinetics***

***(c) Comparison between computed kinetics and data***

## Results: Systematic detailed data on $NH_3$ generation with synthesized exhaust compositions:

- Significant $NH_3$ can be generated
- Rich-lean cycling required
- Customized reformer catalysts produced required $H_2$ > stock LNT catalyst
- Optimal temperature window observed
- Space velocity, brick dimensions important
- $NO/NO_2$ ratio less influential
- Model predicts $NH_3$ generation trends
- Other effects observed…