Synthesis and Adsorption Property of Zn(NH$_3$)$_2$(CO$_3$)

CLAIM:
Adsorption property for Zn(NH$_3$)$_2$(CO$_3$) was discovered. The material exhibit significant selectivity to separate CO$_2$ from N$_2$, H$_2$, O$_2$, and CH$_4$.

NOVELTIES:
• Setting up a novel synthesis approach to produce Zn(NH$_3$)$_2$(CO$_3$).
• Discovering the adsorption property for Zn(NH$_3$)$_2$(CO$_3$).

FEATURES:
• High chemical and thermal stability of the adsorbents.
• High CO$_2$ adsorption capacity.
• High selectivity to separate CO$_2$ from N$_2$, H$_2$, O$_2$, and CH$_4$.

MILESTONES—to—DATE:
• Building and Dem-Val of prototype is done.
• The product is well-characterized.
• Provisional filed with IP Office.

POTENTIAL APPLICATIONS:
• CO$_2$ separation in:
  - Hydrogen production plants
  - Natural gas sweetening
• CO$_2$ capture and storage (CCS) in:
  - Power plants
  - Heavy industries

COMPETITIVE INDUSTRY PLAYERS:
• DOW
• BASF
• Munters
• Exxon
• GE

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