Abstract
Separation processes account for over 35% of energy used in chemical manufacturing. To advance the availability of less energy-intensive separations for industrial adoption, the Chemical Manufacturers Roundtable at the ACS Green Chemistry Institute® in partnership with AIChE sought a NIST AMTech planning grant to collaboratively create an innovation roadmap. Since receiving the award in May 2015, the collaboration has expanded to include researchers from universities and national labs, suppliers of commercial separations equipment, and a growing list of interested manufacturers and sustainability leaders. Successful roadmap development depends on the involvement of a wide range of chemical science and engineering innovators.

Less energy-intensive alternative separations: creating a roadmap to accelerate industrial adoption

KEYWORDS: Energy efficiency, industrial roundtable, Green Engineering.

Collaborators include:

- ACS GCI Chemical Manufacturers Roundtable (Ajinomoto North America, Inc., Albemarle, Arizona Chemical, Chemours, Dixie Chemical, DuPont, Pen A Kem, Sigma-Aldrich, and Solvay USA Inc.)
- American Institute of Chemical Engineers (AIChE) (including its Institute for Sustainability, Separations Division, and Computational Molecular Simulation & Engineering Forum)
- NIST Materials Measurement Laboratory
- Industrial Fluid Properties Simulation Collective
- Pine Chemicals Association
- AstraZeneca, GlaxoSmithKline, Merck, Sanofi
- Ingevity, Compact Membrane Systems, University of Toledo, Rowan University
an application of less energy-intensive separation processes as alternatives to distillation (Figure 1). The roadmap will identify and prioritize research, development, and demonstration needs for technology initiatives with the potential to transform the competitiveness and sustainability of the chemical industry. Successful development of the roadmap depends on a collaborative effort among innovators from chemical and pharmaceutical manufacturers, universities, research institutions, and professional organizations such as ACS and AIChE. The ultimate aim of this effort is to establish and maintain a robust ecosystem across the chemistry enterprise that enables industrial implementation of less energy-intensive alternative separations technologies.

In order to achieve these goals, the ACS GCI Chemical Manufacturers Roundtable would like you to get involved and contribute. We are soliciting input from companies in the chemical and allied manufacturing sector on the types of separations currently performed via distillation so that we can assure roadmapping stays in tune with industrial needs.

Please contact gciroundtables@acs.org with your input. To learn more and to get involved, please visit http://altsep.org.

REFERENCES


Figure 1. Roadmapping Timeline.