



HAL
open science

Donald Katz Award 2025 presentation

Christophe Coquelet

► **To cite this version:**

Christophe Coquelet. Donald Katz Award 2025 presentation. GPA Midstream convention, GAP Midstream Association, Sep 2025, San Antonio (TX), United States. <hal-05425212>

HAL Id: hal-05425212

<https://hal.science/hal-05425212v1>

Submitted on 19 Dec 2025

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons CC BY-NC 4.0 - Attribution - Non-commercial use - International License



Prof. Christophe Coquelet

2025 Donald L. Katz Award

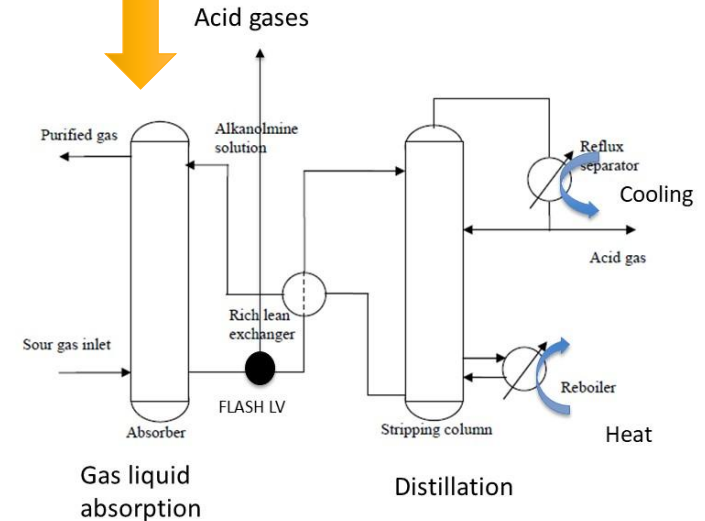
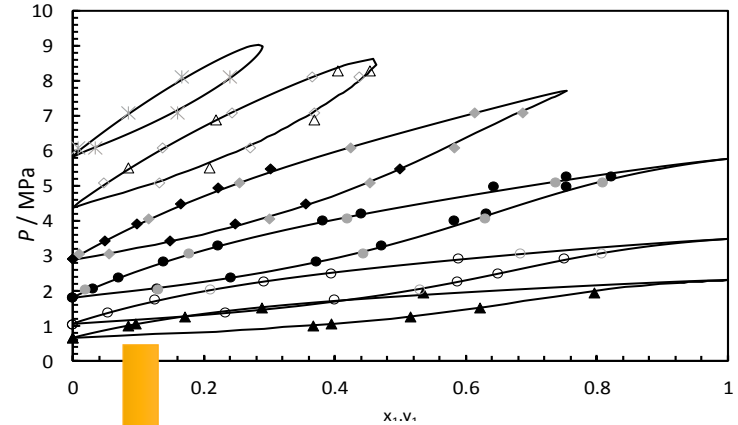
The Honor

- For a fluid thermodynamicist, the Donald Katz Award is one of the most prestigious honors for a researcher in the field of process engineering, and more specifically in oil and gas engineering.
- It is one of the rare international awards granted by industry professionals.
- This is especially meaningful to me, as I work at a school under the Ministry of Industry.
- It is a great honour for me to follow in the footsteps of such prestigious names — whose work I have read, used extensively, and continue to use today:
- **Karl Gerdes (GPA), E. Lemmon and M. McLinden (NIST/Refprop), J. Gmehling (UNIFAC, experimental methods), R. Weiland, G. Rochelle (acid gas absorption), W. Chapman (SAFT), J. McKetta (water content), Kenneth Marsh (calorimetry), D.Y. Peng (Peng–Robinson EoS), K. Starling (BWRS EoS), P. R. Bishnoi (equations of state), D. Sloan (gas hydrates), and of course, J. M. Prausnitz (fluid thermodynamics, g^E models, experimental work, ...) — among many other recipients.**

My Journey with Gas Processors Association

- A long adventure of more than 15 years

- I was initiated by my PhD director in 2004: Prof Dominique Richon (awarded in 2001)
- Started with projects 037, 981, 021 and 052
- I have a background in process engineering specializing in fluids thermodynamic with a thesis in the field of refrigeration and phase equilibrium
- Thanks to the GPA, I was able to develop knowledge in a new field and I was going to continue the development of skills until today.
- Delivered data for real-world processing challenge



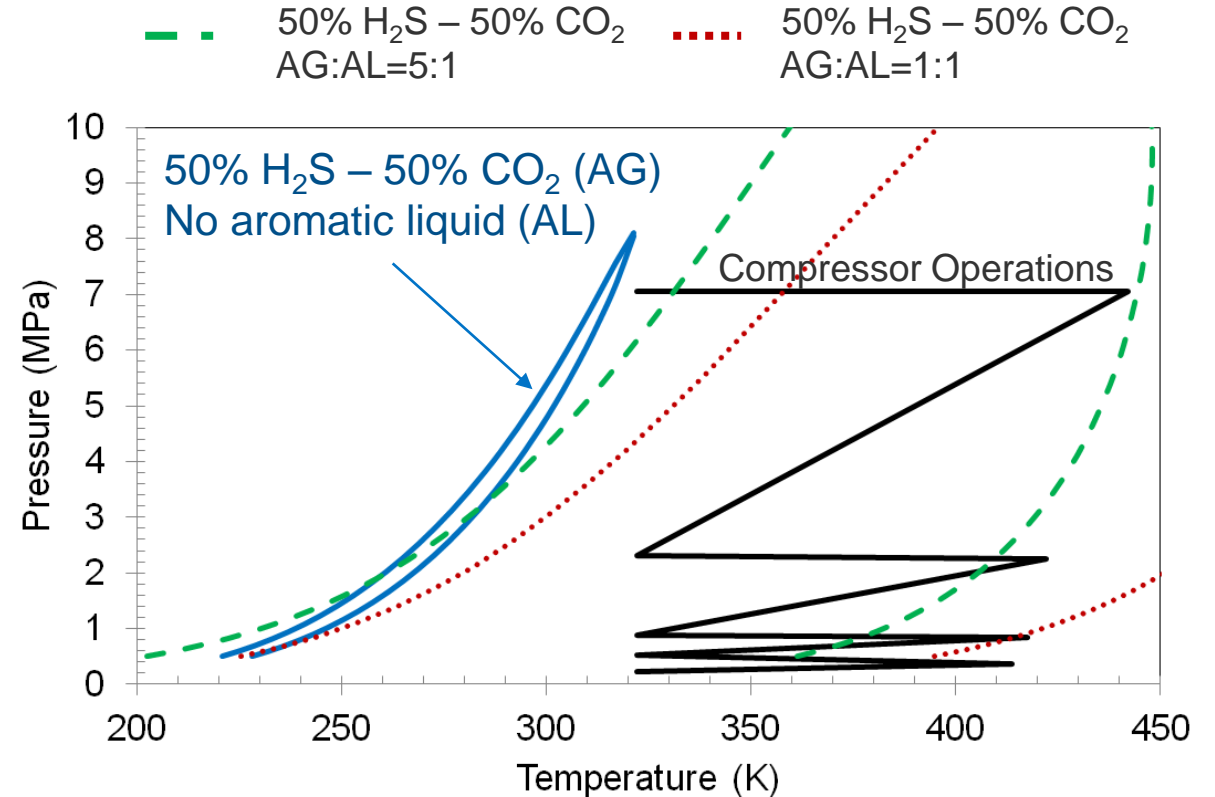
A driving force for collaboration: an example

- A strong collaboration with Heriot Watt University and Prof. Antonin Chapoy on gas hydrates measurements (project 082) with joint thesis supervision (Martha Hajiw)

*P-T envelopes of mixtures
with aromatic compounds*

Example of results from GPA
Project 082 (RR-230)

Showing Practical Application



Conclusion

- Examples of works link to natural gas processing and CCUS:
 - Research with TotalEnergies on gas processing development of new solvent,
 - both phase equilibrium and kinetic of absorption
- I have also worked on:
 - refrigeration, ORC, nuclear power plant, biofuels, underground storage, NH_3 , insulating gas, new solvents (DES), waste heat, leaching for nickel production, biogas separation, working fluid synthesis, catalyst, ammonia production, etc...
- Honored and surprised to receive the Katz Award.
- Grateful to GPA Midstream for this recognition.
- Grateful to the scientific community.
- We do this not for awards, but for progress.
- Proud to contribute to thermodynamics and gas processing.

Acknowledgments

- **GPA committee and Prof Dominique Richon** who was presented the **Katz Award in 2001**
- **My CTP research team.** Special thanks to Alain Valtz, Pascal Theveneau, Eric Boonaert, David Marques
- **My students.** Special thanks to Moussa Dicko, Jeffy Chien Bin Soo, Martha Hajiw, Gabriely Miazaki, Salahedinne Chabab, Julien Brocus, Fan Zhang, Serena Delgado, Javeed Awan, Marco Campestrini, Jamal El Abbadi, Xavier Courtial...
- **Colleagues from partner universities.** Special thanks to Profs Antonin Chapoy (HW), Georgios Kontogeorgis (DTU), Deresh Ramjugernath (UKZN), “Jack” Yang (MCRI), Jiao Tong University (SPEIT), Patrice Paricaud (ENSTA), Jean Noel Jaubert (ENSIC), Karine Ballerat (UCA), etc..
- **Industrial partners:** TOTAL Energies, IFPEN, Arkema, Air Liquide, GPA, Solvay, Technip-Processium, fives-Prosim...
- **My new research team:** IMT Mines Albi, RAPSODEE Thomas Deleau, Patricia Arlabosse, Fabienne Espitalier “J.J.” Letourneau and the others....



Albi (close to Toulouse)

Church of Sainte Cécile
(UNESCO)

Campus of School of
Mines of Albi

