



**Jeanne Therese Hilario
ANDRES**

Home Country
Philippines

Degree
PhD in Chemical
Engineering

Expertise
Chemical Engineering

Research Focus
Carbon Dioxide
Capture and Storage

Host University
University of
Cambridge,
United Kingdom

Fellowship Awarded
2008

Jeanne Therese Hilario Andres is married and has two children. In the past, she was a university faculty instructor and research assistant as well as a youth worker, trainer, singer, writer and environmentalist.

After taking a career break to care for her children, she considers herself fortunate to be able to return to academic life. Jeanne Therese is pursuing full-time doctoral research as a Clare Hall student in the Department of Chemical Engineering and Biotechnology at the University of Cambridge, United Kingdom.

At Cambridge, her research focus is on carbon dioxide sequestration, which seeks to study, predict and model the effects of Carbon Dioxide Capture and Storage (CCS), a technology currently being employed to re-inject waste carbon dioxide from industrial sources back into subsea surfaces, spent oil and gas fields, or deep geological formations.

She has developed and utilized a mathematical model to understand and simulate the long-term fate of captured carbon dioxide in saline aquifers: its movements, timescales, and the interaction between fluid flow and chemical kinetics. She supervises graduating chemical engineering students in conducting experimental CCS-related research projects, and she designs and performs experiments to validate her simulation results and to further extend knowledge of subsurface fluid behavior in porous media.

Advanced study of CCS technology as a current climate change mitigation method is undoubtedly timely and relevant, not only for predicting timescales for complete CO₂ dissolution and leakage potential as well as for optimizing resources and storage capacities, but also to increase knowledge about other unintentional chemical emissions discharged into subsurface geological formations.

Jeanne Therese plans to conduct regular teaching visits to the University of Santo Tomas Faculty of Engineering in her home country, the Philippines, while maintaining academic ties with the University of Cambridge to establish long-term research linkages and collaborations between the two institutions.