

Success Story: Development of Special Polyethylene Grade for Niche Application

EQUATE PETROCHEMICAL CO.¹ AND KUWAIT FOUNDATION FOR ADVANCEMENT OF SCIENCES²

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ABOUT THE PROJECT:

This project is for the development of value added Polyethylene (PE) grades for different applications, such as electrical conducting and producing specialty membranes. The objective of this project is to enter niche applications, which were not previously offered by standard grades. This is expected to form new opportunities for converters to enter new markets and present additional applications. © 2016 IED KFAS

1. A BRIEF DESCRIPTION ABOUT THE COMPANY

Established in 1995 as Kuwait's first international joint-venture in this industry, EQUATE Petrochemical Company (EQUATE) embodies its "Partners in Success" slogan through the partnership between Petrochemical Industries Company (PIC), The Dow Chemical Company (Dow), Boubyan Petrochemical Company (BPC) and Qurain Petrochemical Industries Company (QPIC). Commencing production in 1997, EQUATE is currently the owner and single-operator of several fully integrated world-class petrochemical units, within the Greater EQUATE joint-venture, that annually produce over 5 million tons of the highest quality grades of Ethylene, Polyethylene (PE), Ethylene Glycol (EG), Polypropylene (PP), Styrene Monomer (SM), Paraxylene (PX), Heavy Aromatics (HA) and Benzene (BZ). The products are marketed throughout the Middle East, Asia, Africa and Europe. Alongside with being a leading industrial organization, EQUATE dedicates its utmost commitment and care to overall sustainability wherever it operates in cooperation with public and private bodies, including employees, the society and customers, in all relevant fields, such as human development, environment, education, health and public awareness.

2. HOW DID KFAS HELP WITH FUNDING YOUR PROJECT?

EQUATE approached KFAS to co-fund this research program under the Open Innovation concept. Through KFAS, EQUATE worked with the Germany-based SET Technologies, and identified two knowledge providers: Leibniz Institute for Polymers (IPF) and Fraunhofer Institute for Chemical Technology (ICT). The funding is provided in two phases: feasibility study and for the final research proposal. KFAS funded 40% of the feasibility study. KFAS has also committed provide funding of up to KD 30,000 to complete the research.

3. WHAT WAS THE SCIENCE, TECHNOLOGY & INNOVATION (STI) RELATED SOLUTION NEEDED FOR YOUR PROJECT?

Through this project, we expect to develop new specialty PE grades for electrical conducting and membrane applications that bring up new opportunities for plastic converters.

4. HOW DID THIS SOLUTION AFFECT YOUR COMPANY?

As EQUATE is currently producing PE grades used in household and industrial packaging applications, the new electrical conducting PE will bring high value products with enhanced safety applications for hydrocarbon storage and handling. The main applications include shopping bags, plastic containers and pipes. In addition, development of PE grades for membrane will enhance the efficiency of liquid separation applications in energy and water purification industries.

5. WOULD YOU REAPPLY FOR KFAS PROGRAMS AND WOULD YOU RECOMMEND KFAS PROGRAMS TO OTHER COMPANIES?

Yes, KFAS programs are highly valuable and contribute to research and development at Kuwait enterprises for overall sustainability. KFAS, as one of our main "Partners in Success," is playing a key role creating collaboration among several organizations to bring higher value to communities.

FUNDING INFORMATION

This project was co-funded by the Innovation & Enterprise Directorate, Kuwait Foundation for Advancement of Sciences to support in-house R&D for the development of Science, Technology and Innovation in EQUATE Petrochemical Co.

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