

## Acknowledgment

From the onset in 1972, I have spent my career at the forefront of technological advances. I have had unique opportunities throughout my career to participate in multi-disciplinary teams for the total development chain, from the conception of the idea, the development of the technology, the actual construction of the plant, to production and utilization of the product by the consumers. It is a unique experience to have been able to see two technologies grow from ideas on laboratory scale to commercial installations: I witnessed Shell Coal Gasification grow to the Buggenum 250 MWelectric plant in the Netherlands and saw the Shell Middle Distillate Process take form in the 12,500 barrel per day Bintulu plant in Malaysia. I am very grateful to Shell for the opportunities.

Throughout my career, I have therefore specialized in Gas to Liquids (GTL) and especially in Fischer-Tropsch technology; I have preached the gospel of GTL as advanced energy technology. I have lectured on how GTL can be the future's pathway.

In 2005 I wrote the initial predecessor of this book: "Gas to Liquids, Fischer-Tropsch Catalysis, Reactors, Products and Process -The Twentieth Century and Beyond", dedicated to my wife Carol. It was met with enthusiasm and support by the many thousands of you whom have found it either on the website, by word of mouth, referred to by professors or any other way. Given valuable ideas for improvements the second edition saw the light in 2007, dedicated especially to my friend Prof. Dr. C. Quinton Bowles (Delft and UKMC, † 22 August 2007).

Since that second edition the world has gone in turmoil and the oil prices rose to an unprecedented high of about U.S. \$ 150 per barrel. Many blamed this on speculations and "futures", however, we should not forget that the "a simultaneous collapse" in output from Iran, Iraq, Nigeria and Venezuela prevented OPEC to respond adequately too. Surprisingly the situation persisted in what seemed a sustainable world economy. Then, in 2008, the world's financial markets collapsed, first on basis of an inflated mortgage industry, then on unprecedented stock market losses, in which many companies were unable to sustain their cash flow, could not obtain any loans and, in the worst cases, folded. The world seemed to come to a stand-still, energy consumption dropped, oil prices tumbled to some U.S. \$ 35/bbl, despite OPEC's reductions in oil production, projects were cancelled, people lost their job, income, and the spiral of recession became even more inflationary: in short the worst recession since the 1930s was there.

However, 2009 showed us that, again, we seem to be looking at the "roller-coaster" effects: by year end, the stock market had revived somewhat, oil was back up to some U.S. \$ 80/bbl and....a new GTL venture (Pearl GTL) was progressing to schedule for completion in 2010/11. In all there were new driving forces, and a reason to readdress the subject, this time in a new, expanded form and a new book. I hope you all enjoy it.

This new book I dedicate especially to my dad, Arie G. Tijm, who unexpectedly passed away on January 22, 2009 at the age of 86. He was my great inspiration, my best supporter and the prime example of showing me how hard-work and fairness can bring about a great career. May the memory of an exemplary husband and dad brighten the days to come for my mom and may the love of all her children, friends and family give her support in this great loss.

February 2010, *Peter J. Tijm*