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Navin G. Ashar

# Advances in Sulphonation Techniques

Liquid Sulphur Dioxide as a Solvent  
of Sulphur Trioxide

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*During my undergraduate studies at Banaras Hindu University (1950–54), the class was asked to design a “50 TPD Sulphuric Acid Plant”.*

*After postgraduate study in Chemical Engineering at MIT (Cambridge, USA) 1958, I was appointed on the MIT faculty until 1961. Following that I returned to India and joined a fertilizer company 80 km away from Mumbai, namely M/s. Dharamsi Morarji Chemical Co. Ltd. The company had constructed a 50 TPD Sulphuric Acid plant just a year earlier. My attachment to Sulphuric Acid and Sulphur-based chemicals is still intense after over 53 years, to the extent that my wife complains that even today my first love is Sulphuric Acid!*

*I married Rajni in 1962. Over the five decades she has supported and inspired me to be creative and innovative. This book is the result of her devotion and support.*

*I dedicate this pathbreaking document to my beloved wife.*

# Preface

It is about time that a complete in-depth analysis is provided for future researchers and technocrats on the impact of liquid sulphur dioxide and liquid sulphur trioxide to carry out complex and difficult sulphonations.

Most of the sulphonation processes are exothermic. Liquid sulphur dioxide can act as auto-refrigerant. It can be recycled after condensing. The property of sulphur dioxide indicates that condensing can be carried out at ambient temperatures at pressures of 6–8 kg/cm<sup>2</sup>.

The current production techniques can be replaced by the innovative process of using liquid sulphur, liquid sulphur dioxide and liquid sulphur trioxide.

The costly and cumbersome process plant can be simplified with economic advantage and better conversion efficiency.

This book gives a new pathbreaking direction to the production of sulphuric acid as well as sulphonation of organic and inorganic chemicals.

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