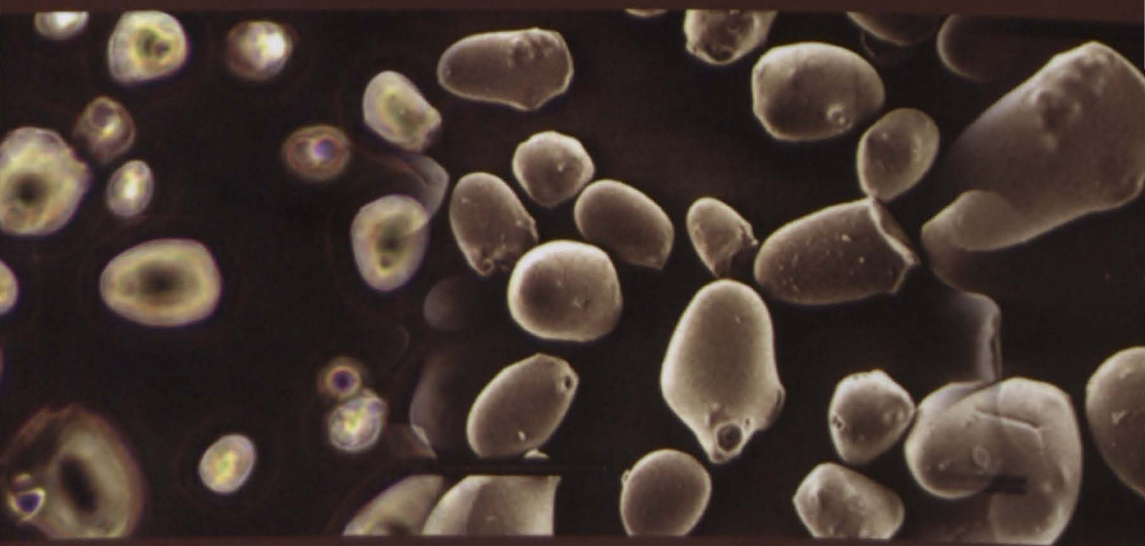


# CHARACTERIZATION OF UV INITIATED SAGO STARCH-g- POLY (ACRYLIC ACID)



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### LIST OF SYMBOLS

Symbol	Common Unit	Definition
$\eta$	Pas	Viscosity
$[\eta]$	ml/g	Intrinsic viscosity
$\eta_{sp}$	-	Specific viscosity
$\eta_r$	-	Relative viscosity
$\alpha$	-	Mark Houwink exponent
$C$	%	Correction for lipid
$c$	g/ml	Sample concentration
* $C$	g/ml	Coil overlap concentration
$K$	-	Mark Houwink constant
$M$	g	Molecular weight
$R_g$	m	Radius of gyration
$t$	s	Efflux time for solution
$t_0$	s	Efflux time for solvent
$V$	ml	Total volume of NaOH for neutralization
$W$	g	Sample weight

## PREFACE

Modification of starch had been a focused area of study since several decades ago, due to the fact that almost unlimited end applications can be achieved to suit different industries from the manifested desirable functionalities. The most novel innovation of this research project is to produce photografted sago starch using UV curing technique, which is widely used in coating industry. This research project was designed to explore the possibility of employing UV curing technique in the presence of photoinitiator (Irgacure 2959) to graft-copolymerize acrylic acid onto sago starch. Effect of UV irradiation as well as UV initiated grafting was studied by examining the changes at both molecular and granular levels experienced by native sago starch after the treatments. Extended and in depth discussion was done with the attempt to elucidate and establish the structure-functional properties relationship resulting from the UV treatments.

The literature review of starch in general and particularly in sago starch of this book is believed to be a good reading material for students and researchers who are interested in studies of starch. Methods and experimental techniques employed in various aspects of starch characterization (ranging from physicochemical properties such as crystallinity, swelling power and solubility and pasting properties, morphology and *in vitro* digestibility) carried out in this research may also be a source of information for research scientists engaged in the research of starch. Last but not least, the innovative UV curing technique employed in photografting may offer a new chapter of research interest to further explore the efficiency, sustainability, as well as other related aspects of study.

**J.S. Lee**



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