CONTENTS

Foreword iv

Preface v

Acknowledgments viii

CHAPTER 1

Modern Cooking Evolution and Its Pioneers and Practitioners 1

Modern History of Molecular
Gastronomy 2
Pioneers and Practitioners 5

CHAPTER 2

Sanitation and Safety 15

Food Hazards 16

Safety 19

Safety Measures for Modern Cooking Applications and Techniques 20

CHAPTER 3

Equipment and Tool Identification 27

Safe Handling and Sanitation Concerns 28

Product Identification 28

CHAPTER 4

Introduction to Hydrocolloids: New Frontier 43

Introduction to Food Hydrocolloids 44 Description of Food Hydrocolloids 44 Formulating and Measuring Food Hydrocolloids in Recipes 54 Food Hydrocolloid Functionality Reference 55

CHAPTER 5

Food Hydrocolloids: Thickeners, Gelling Agents, Emulsifiers, and Stabilizers 63

Functions of Additives: New Food Hydrocolloids **64**

CHAPTER 6

Sweeteners, Antioxidants, and Others 85

Sweeteners 86

Antioxidants 93

Others 98

CHAPTER 7

Overview of Techniques 105

Drying 106

Essence and Flavor Extraction 107

Flavor Enhancements 110

Emulsions 113

Foam, Air, Bubble: Gas in Water 115

Gelling 116

Thickening 119

Spherification/Encapsulation 120

Freezing/Carbonation 122

Carbon Dioxide (CO2) 123

Vacuum and Low-Temperature

Cooking 123

CHAPTER 8

Small Treats, Hot and Cold 131

CHAPTER 9

Surprises 173

CHAPTER 10

Composed Dishes 213

CHAPTER 11

Sweets 263

Appendix 292

Weight Conversion Chart 292

Measurement Conversion of

Commonly Used Ingredients 293

Length Conversion Chart 295

Temperature Conversion Chart 296

Bibliography and Further Reading 298

riodding 230

Resources 300

Index 305

About the Author 310