Contents

Preface **vii**

Biographies of the Authors **xv**

Glossary—*by Mark Albers* **xx**

Chapter 1—Moisture Primer
by Heinz R. Trechsel **1**

Chapter 2—Weather Data
by Anton TenWolde and Donald G. Colliver **16**

Chapter 3—Hygrothermal Properties of Building Materials
by M. K. Kumaran **29**

Chapter 4—Failure Criteria
by Hannu Viitanen and Mikael Salonvaara **66**

Chapter 5—Overview of Hygrothermal (HAM) Analysis Methods
by John Straube and Eric Burnett **81**

Chapter 6—Advanced Numerical Models for Hygrothermal Research
by Achilles N. Karagiozis **90**

Chapter 7—Manual Analysis Tools
by Anton TenWolde **107**

Chapter 8—MOIST: A Numerical Method for Design
by Doug Burch and George Tsongas **116**

Chapter 9—A Hygrothermal Design Tool for Architects and Engineers (WUFI ORNL/IBD)
by H. M. Kuenzel, A. N. Karagiozis, and A. H. Holm **136**

Chapter 10—A Look to the Future
by Carsten Rode **152**

Appendix 1—Computer Models **161**

Appendix 2—Installation Instructions **185**

Index **189**