

Contents

Preface	xi
Part 1 Sulfide Minerals in Rocks: Their Origins and Geochemistry	1
Chapter 1 Introduction to the Geology and Geochemistry of Sedimentary Iron Sulfide Minerals.....	3
Daniel David Gregory	
Part 2 Problems with Pyrite and Pyrrhotite Minerals in Construction Aggregates.....	21
Chapter 2 Heave Rates and Mechanism of Pyritic Expansion in Unbound Aggregates	23
Michael L. J. Maher	
Chapter 3 Pyrite in Construction Aggregates – Using Trace Elements to Assess the Risks	61
Michael L. J. Maher and Maxim Ryskin	
Chapter 4 Overview of the Trois-Rivières (Québec, Canada) Pyrrhotite Issues.....	109
Josée Duchesne, Andreia Rodrigues and Benoît Fournier	
Chapter 5 Concrete Deterioration from the Oxidation of Pyrrhotite: A State-of-the-Art Review	137
Dipayan Jana	
Chapter 6 Evaluation of Pyrite-Bearing Construction Aggregates for Acid Rock Drainage.....	223
Fred H. Shrimmer	
Chapter 7 The Role of the Geologist in Sulfide Problems: The Irish Experience.....	239
Peter Strogon	
Part 3 Future Trends in Pyrite Applications	261
Chapter 8 Growth of FeX_2 (X = S, Se)-Pyrite Thin Films as Low-Cost Materials for Photovoltaic Applications and Ru-Substitution Effect on Their Properties	263
Beya Ouertani	

Chapter 9	Pyrite in Agriculture: Sustainable Applications for Crop Enhancement.....	327
	Chinmaya Kumar Das	
Chapter 10	Avoidance of Sulfide Problems in Aggregates.....	349
	Fred H. Shrimmer	
About the Editor.....		369
About the Contributors		371
Index		377