

# Contents

About the Special Issue Editor . . . . .	vii
<b>Christine V. Putnis</b> Editorial for Special Issue “Mineral Surface Reactions at the Nanoscale” Reprinted from: <i>Minerals</i> 2019, 9, 185, doi:10.3390/min9030185 . . . . .	1
<b>Irshad Bibi, Rolf S. Arvidson, Cornelius Fischer and Andreas Lüttge</b> Temporal Evolution of Calcite Surface Dissolution Kinetics Reprinted from: <i>Minerals</i> 2018, 8, 256, doi:10.3390/min8060256 . . . . .	4
<b>Denis Gebauer</b> How Can Additives Control the Early Stages of Mineralisation? Reprinted from: <i>Minerals</i> 2018, 8, 179, doi:10.3390/min8050179 . . . . .	18
<b>Jörn Hövelmann, Christine V. Putnis and Liane G. Benning</b> Metal Sequestration through Coupled Dissolution–Precipitation at the Brucite–Water Interface Reprinted from: <i>Minerals</i> 2018, 8, 346, doi:10.3390/min8080346 . . . . .	31
<b>Natalya A. Garcia, Paolo Raiteri, Elias Vlieg, and Julian D. Gale</b> Water Structure, Dynamics and Ion Adsorption at the Aqueous {010} Brushite Surface Reprinted from: <i>Minerals</i> 2018, 8, 334, doi:10.3390/min8080334 . . . . .	52
<b>Fulvio Di Lorenzo, Cristina Ruiz-Agudo, Aurelia Ibañez-Velasco, Rodrigo Gil-San Millán, Jorge A. R. Navarro, Encarnacion Ruiz-Agudo and Carlos Rodriguez-Navarro</b> The Carbonation of Wollastonite: A Model Reaction to Test Natural and Biomimetic Catalysts for Enhanced CO <sub>2</sub> Sequestration Reprinted from: <i>Minerals</i> 2018, 8, 209, doi:10.3390/min8050209 . . . . .	67
<b>Lijun Wang, Christine V. Putnis, Jörn Hövelmann and Andrew Putnis</b> Interfacial Precipitation of Phosphate on Hematite and Goethite Reprinted from: <i>Minerals</i> 2018, 8, 207, doi:10.3390/min8050207 . . . . .	93
<b>Yingheng Fei, Jian Hua, Chengshuai Liu, Fangbai Li, Zhenke Zhu, Tangfu Xiao, Manjia Chen, Ting Gao, Zhiqi Wei and Likai Hao</b> Aqueous Fe(II)-Induced Phase Transformation of Ferrihydrite Coupled Adsorption/Immobilization of Rare Earth Elements Reprinted from: <i>Minerals</i> 2018, 8, 357, doi:10.3390/min8080357 . . . . .	105
<b>Dhamelyz Silva-Quñones, Chuan He, Melissa Jacome-Collazos, Carsten Benndorf, Andrew V. Teplyakov and Juan Carlos F. Rodriguez-Reyes</b> Identification of Surface Processes in Individual Minerals of a Complex Ore through the Analysis of Polished Sections Using Polarization Microscopy and X-ray Photoelectron Spectroscopy (XPS) Reprinted from: <i>Minerals</i> 2018, 8, 427, doi:10.3390/min8100427 . . . . .	118
<b>Helen E. King and Thorsten Geisler</b> Tracing Mineral Reactions Using Confocal Raman Spectroscopy Reprinted from: <i>Minerals</i> 2018, 8, 158, doi:10.3390/min8040158 . . . . .	127

<b>Martina Greiner, Lurdes Fernández-Díaz, Erika Griesshaber, Moritz N. Zenkert, Xiaofei Yin, Andreas Ziegler, Sabino Veintemillas-Verdaguer and Wolfgang W. Schmahl</b> Biomineral Reactivity: The Kinetics of the Replacement Reaction of Biological Aragonite to Apatite Reprinted from: <i>Minerals</i> <b>2018</b> , <i>8</i> , 315, doi:10.3390/min8080315 . . . . .	<b>142</b>
<b>Kirsten Drüppel and Richard Wirth</b> Metasomatic Replacement of Albite in Nature and Experiments Reprinted from: <i>Minerals</i> <b>2018</b> , <i>8</i> , 214, doi:10.3390/min8050214 . . . . .	<b>173</b>
<b>Jing Zhao and Allan Pring</b> Mineral Transformations in Gold–(Silver) Tellurides in the Presence of Fluids: Nature and Experiment Reprinted from: <i>Minerals</i> <b>2019</b> , <i>9</i> , 167, doi:10.3390/min9030167 . . . . .	<b>193</b>