
About the authors

Author for Chapter 1

Dr. John Scott McCartney is an Associate Professor of Geotechnical Engineering in the Department of Structural Engineering at the University of California San Diego, La Jolla, CA, USA. He obtained a dual B.S.-M.S. degree from the University of Colorado Boulder in 2003 and a Ph.D. degree in Civil Engineering from the University of Texas at Austin in 2007. Dr. McCartney has a broad range of expertise and has published over 150 technical papers on his research. His areas of expertise include unsaturated soil mechanics, geosynthetics engineering, and thermally active geotechnical systems. Dr. McCartney has won awards for teaching and research, including the NSF CAREER award, the Arthur Casagrande Professional Development Award from the American Society of Civil Engineers (ASCE), the James J.R. Croes medal from ASCE, the Young IGS Award from the International Geosynthetics Society, and several best paper awards. He is currently an Editor of the ASCE Journal of Geotechnical and Geoenvironmental Engineering, Editorial Board Member for Geosynthetics International, Geotechnical Testing Journal, Computers and Geotechnics, and Soils and Foundations. He is active on the ASCE GeoInstitute committees on Unsaturated Soil Mechanics and Geoenvironmental Engineering, ASTM International, the North American Geosynthetics Society, and the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) Committee TC308 on Energy Geotechnics. Dr. McCartney is a licensed professional engineer in Colorado.

Authors for Chapter 2

Dr. Moncef Krarti, ASME Fellow, Professor and Coordinator, Building Systems Program, Civil, Environmental, and Architectural Engineering Department at the University of Colorado, has been very active in ASME from the last 25 years, especially in the ASME Solar Energy Division (SED). He has served both as Technical and Conference Chairs, and is a past president of SED. Prof. Krarti main research contributions are in areas related to energy efficiency in buildings and renewable energy systems modeling and analysis. He is the co-founder and the co-chair of the ASME Emergency Technologies Committee

on Integrated Sustainable Building Equipment and Systems (ISBES) which initiated several activities including workshops, monographs, and handbooks. Prof. Krarti is considered a world expert in building energy management and has helped establish energy efficiency programs in several countries. Prof. Krarti has published over 250 technical journals in wide of fields related to sustainable energy technologies. He authored three textbooks on building energy management and has been an invited keynote speaker in several national and international forums and conferences.

Byung Chang Kwag is currently a Ph.D. candidate in the Building Systems Program of the Civil, Environmental, and Architectural Engineering Department at the University of Colorado at Boulder. As part of his Ph.D. research work, he has developed three-dimensional numerical models and transfer functions for assessing the thermal performance of thermo-active foundations. He has published several peer-reviewed technical papers on these topics in archival journal and conference proceedings.

Authors for Chapter 3

Dr. Abdelmalek Bouazza is a Professor in Civil Engineering at Monash University, Melbourne, Australia and Adjunct Research Professor at Cardiff University, UK. He is a Fellow of the Institution of Engineers (FIEAust). His research has been recognised by a number of awards including, recently the E.H. Davis Memorial Award from the Australian Geomechanics Society, the 2014 Zeng Guoxi Lecture from Zhejiang University, China and the 2013 International Geosynthetic Society (IGS) Plaque for significant contributions to the International Geosynthetic Society and outstanding technical contributions to the geosynthetic discipline. He is the Chair of the International Soil Mechanics and Geotechnical Engineering (ISSMGE) Technical Committee TC215 on Environmental Geotechnics and Secretary of ISSMGE TC308 on Energy Geotechnics.

Dr. Rao Martand Singh is currently a Lecturer in Geotechnical Engineering at the University of Surrey, UK. Previously, he was a Research Fellow at Monash University, Melbourne, Australia. He obtained his Ph.D. in Geotechnical/Geo-environmental Engineering

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Mr. Mohammed Faizal is a Ph.D. student in Civil Engineering at Monash University, Melbourne, Australia, where he is conducting research on thermal performance of geothermal energy piles. He completed his bachelors and masters degrees in Mechanical Engineering from the University of the South Pacific, Suva, Fiji. His research interests are generally in the areas of geothermal and ocean energy conversion.

