1. Record Nr. UNINA9910847596703321

Autore	Moretta Federico
Titolo	Mathematical and Statistical Approaches for Anaerobic Digestion Feedstock Optimization / / by Federico Moretta, Giulia Bozzano
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	9783031564604 303156460X
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (VIII, 69 p. 25 illus., 16 illus. in color.)
Collana	SpringerBriefs in Energy, , 2191-5539
Disciplina	589.9
Soggetti	Electric power production Mathematical models Chemical engineering Statistics Mechanical Power Engineering Mathematical Modeling and Industrial Mathematics Chemical Engineering Statistics in Engineering, Physics, Computer Science, Chemistry and Earth Sciences Chemical Process Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	What is anaerobic digestion? -- Reactions and operative conditions -- Energetic scenario in the XXI century -- Biomass in anaerobic digestion -- Biomass types and differences -- Principal biomass properties -- Experimental procedures -- Analytical methodologies.
Sommario/riassunto	This book examines biomass mixture modeling and optimization. The book discusses anaerobic digestion and related fermentative processes and explains their compositional dynamics. Early chapter examine macromolecules, elemental fractions, and their direct influence on methane production. Supported by an extensive data bank of substrates obtained from research, the book points out correlations that enable the estimation of global methane production for diverse biomass mixtures. Furthermore, it provides valuable insights into

discerning the optimal composition capable of yielding the utmost methane output. The book integrates cutting-edge machine learning techniques and shows how the programming language Python and Julia can be used for analysis and to optimize processes. It has many graphs, figures, and visuals. .