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	Titolo	Bioaerosol Characterisation, Transportation and Transmission : Fundamental, Modelling and Application / / by Yihuan Yan, Jiyuan Tu
	Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
	ISBN	981-9922-56-9
	Edizione	[1st ed. 2023.]
	Descrizione fisica	1 online resource (336 pages)
	Altri autori (Persone)	TuJiyuan
	Disciplina	628.53
	Soggetti	Biomedical engineering
		Fluid mechanics
		Microbial ecology
		Mathematical statistics—Data processing
		Biomedical Engineering and Bioengineering
		Engineering Fluid Dynamics
		Environmental Microbiology
		Statistics and Computing
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Introduction .-Fundamentals of Bioaerosol Dynamics -- Fundamentals of Bioaerosol Infections -- Computational Fluid Dynamics (CFD) -- Mathematical Models -- Case Studies of Bioaerosol Transport and Dispersion -- Case Studies of Influential Factors on Bioaerosol Transport -- Case Studies of Bioaerosol Inhalation and Deposition -- Case Studies of Health Risk Assessment and Prevention Recommendations -- Advanced Modelling and Future Trend.
	Sommario/riassunto	This book aims to predict and model the transport of bioaerosols, identify their transmission characteristics, and assess occupants' infection risks. Although existing epidemiological books provide fundamental infection rate of existing diseases, the ability of predicting emerging disease transmission in the air and assessing occupants' infection risks to the bioaerosols is significantly lacking. This book is considered as a professional book that provides in-depth discussion of the aforementioned issues and provides potential approaches to solve these issues would be highly demanded by readers in this emerging

research field. This book offers essential and systematic analysis on the fate of bioaerosols from their release in the air to the final destination in human's respiratory systems through direct 3D visualizations techniques. It also provides quantifiable method to assess each occupant's infection risks to the infectious bioaerosols in indoor environments. The readers will gain essential fundamental characteristics of bioaerosols (active time, viability, etc.) and will gain the advanced skills on how to integrate these properties into numerical modeling and assess the occupants' exposure risks. .