

1. Record Nr.	UNINA9910793177803321
Autore	Beysens D.
Titolo	Dew water // Daniel Beysens
Pubbl/distr/stampa	Gistrup, Denmark : , : River Publishers, , [2018] ©2018
ISBN	1-000-79707-4 1-00-333789-9 1-003-33789-9 1-000-79391-5 87-93609-46-9
Edizione	[1st ed.]
Descrizione fisica	1 online resource (372 pages)
Collana	River Publishers Series in Chemical, Environmental, and Energy Engineering
Disciplina	574
Soggetti	Dew Fresh water Water
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index
Nota di contenuto	Forewords -- Preface -- Participants of the reviewing process -- Glossary -- List of figures -- List of tables -- List of abbreviations -- History -- Water on Earth -- Atmosphere and materials radiative properties -- Humid air -- Dew nucleation and growth -- Dew collection by gravity -- Dew yield estimation -- Computational fluid dynamics -- Dew measurement and collection -- Dew water quality -- Economic aspects -- Appendix A: Slab and hemisphere emissivities -- Appendix B: The Clausius-Clapeyron equation -- Appendix C: Relation between vapor and heat transfer coefficients -- Appendix D: Volume of a spherical cap -- Appendix E: Wetting and super wetting properties -- Appendix F: Sand blasting roughness -- Appendix G: Meniscus in a groove -- Appendix H: The Penman-Monteith equation -- Appendix I: Relation between dew yield and dry air cooling
Sommario/riassunto	The world's ever-increasing need for fresh water has led to the use of non-conventional sources such as rain and fog water collection. Although rain water collection is relatively simple, the supply is often

erratic. Passive fog water collection has been used in several parts of the world but is only relevant to certain geographical locations. Dew occurrence, however, is far more widespread, can form in most climates and geographic settings, show high frequency and prevalence throughout the year. During the past 20 years, dew collection has therefore been investigated as a serious supplemental source of fresh water. Dew Water offers a thorough review of dew, its formation characteristics and potential for dew collection, for audiences that include policy-makers, non-governmental organizations involved in development aid and sustainable development, engineers, urban planners, researchers and students. After providing a background on atmospheric water, humid air, and sky and materials emissivity, the book deals with dew formation and its estimation with a focus on the use of meteorological data. Dew measurement techniques are reviewed and discussed as well as dew collection by passive means. Computational fluid dynamics technique is described for better design of dew collectors. Dew quality (chemistry, biology) is assessed in view of potable water quality. Costs and economic aspects are also considered. -- from back cover
