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3.4.4 Details of books and chapters in edited volumes / books per teacher during the year

SI. No.	Name of the Teacher	Title of the Book published	Title of the Chapter published	Title of the proceedings of the conference	Name of the conference	National / International	Year and month of publication	ISBN of the Book/Conference Proceeding	Affiliating Institute of the teacher at the time of publication	Name of the Publisher
1	Dr. J. Raja Murugados	Solar -Driven Water treatement(Re-Engi neering& Accelerating Nature water cycle)	Water - Conventional and novel treatment methods	-	-	International	2022	978-0-323-90991-4	NSRIT	Elsevier
2	Mr.B.Ramesh Chandra	Advances in Information Communication Technology And Computing	Advances in information communication technology and computing	-	-	International	-	-	NSRIT	Springer

Dr. J. Raja Murugadoss Director N.S. Raju Institute of Technology (A) Sontyam, Visakhapatnam-531173

SOLAR-DRIVEN WATER TREATMENT

Re-engineering and accelerating nature's water cycle



Edited by Omid Mahian, Jinjia Wei Robert A. Taylor, and Somchai Wongwises



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Re-engineering and Accelerating Nature's Water Cycle

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CHAPTER 2

Water—Conventional and novel treatment methods

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2.1 Introduction

In general, human civilization has placed itself in areas with locally sustainable water sources, in the form of runoff, and/or rivers and streams [1]. Water is an essential life-sustaining element; human life on the earth has become sustainable due to the presence of water, and agricultural productivity on the earth is also possible only in the presence of water. Water has been discussed in terms of quantity and quality, wherein the quantity measures the total available form of water that can be used for human and agricultural practice and the quality indicates the suitability of the water for drinking, domestic, and irrigation purposes [2].

Since the 1980s, water demand has increased by about 1% annually worldwide because of the cumulative population increase, socio-economic progress, and changing lifestyle patterns. Global water demand is projected to rise at the same rate until 2050, reflecting 20%–30% higher levels of water usage than at present, largely because the demand in the manufacturing and domestic sectors is increasing. More than two billion people around the world have high water scarcity and over four billion have a serious water deficit for at least one month a year. Stress levels will continue to rise as water demand increases and climate change impacts increase. Fig. 2.1 summarizes the role of the ecosystem in the water cycle.

Water and electricity are intertwined intricately. Although there are various electricity sources, water requirement has become important since its wide range of utilization, such as raw material production, thermal process cooling, cleaning materials, the cultivation of biofuels crops, as well as Vishal Goar · Manoj Kuri · Rajesh Kumar · Tomonobu Senjyu Editors

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Extracting Cluster-Level Uncertainty from K-Means Clustering—An Example of Analysis of Uncertainty Inherent to Valuation Methodologies for Multiple Construction Projects



I. L. N. Prasad, K. V. G. D. Balaji, Chitti Babu Kapuganti, Ramesh Chandra Bagadi, and T. Santhosh Kumar

Abstract In this research investigation, we first propose a concept of extracting cluster-level uncertainty of any coordinate of a univariate dataset from K-means clustering of the dataset of concern. We also parallelly propose the notions of upper bound uncertainty and lower bound uncertainty to the afore-extracted cluster-level uncertainty of any coordinate of the dataset of concern. We then apply this concept on the rote uncertainties of some construction projects (already finished) of concern and compute their cluster-level uncertainties and also the lower bound uncertainty and upper bound uncertainty for each construction project. A scheme is also detailed as to how to compute the cluster-level uncertainty, the lower bound uncertainty and upper bound uncertainty to the uncertainty of a new unfinished or in the offing construction project. Valuation is essential for a wide variety of purposes. However, it plays a major role in the construction sector to ensure reliable project expense assessments and to minimize risk to financial institutions and firms. Valuation of infrastructure projects focused on a general approach without understanding the uncertainty of project depending on diverse building designs, and construction techniques lead to additional costs or underestimate. Valuation methods like income approach method, cost approach method, and market approach method are generally used for the valuation of projects. Cluster-level uncertainty is helpful since most of the building projects

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