

## *Books in highlight*



## SOLAR HEATING AND COOLING SYSTEMS: FUNDAMENTALS, EXPERIMENTS AND APPLICATIONS

Ioan SÂRBU, Călin SEBARCHIEVICI

ELSEVIER, 2016, 442 p.

ISBN 978-0-12-811662-3

DOI: 10.1016/B978-0-12-811662-3.00001-3

### Short description of the context

This book published in 2016 by the famous Elsevier Ltd. provides a comprehensive coverage of emerging solar technologies and applications from a high scientific and technical level, based on original research and the synthesis of consistent bibliographic material to meet the increasing need for modernization and for greater energy efficiency to significantly reduce CO<sub>2</sub> emissions..

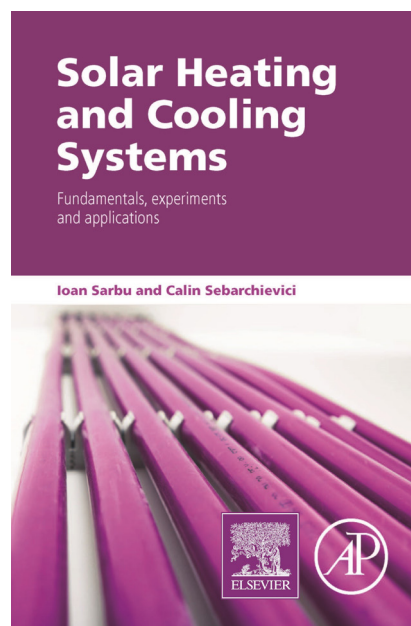
### Purpose and Motivation of the book

The book mainly presents a comprehensive overview of all major solar energy technologies together with fundamentals, experiments, and applications of solar heating and cooling systems. Technical, economic, and energy saving aspects related to design, modelling, and operation of these systems are also explored. This reference includes physical and mathematical concepts developed to make this publication a self-contained and up-to-date source of information for engineers, researchers, and professionals interested in the use of solar energy as an alternative energy source.

### Summary

The book is structured into nine chapters.

- Chapter 1 summarises a description of renewable energy sources covering some general aspects of regional policies and presents the necessity for using solar energy in heating/cooling of buildings and domestic hot-water (DHW) production.
- Chapter 2 presents the main characteristics of solar energy and exposes a methodology for calculating and predicting solar radiation including the main computation elements and the estimation of solar radiation on tilted surface likely to be available as input to a solar device or crop at a specific location, orientation and time
- Chapter 3 provides a detailed description of energy balance for solar collector and of different types of solar thermal and photovoltaic (PV) collectors including the calculation of their efficiency and new materials for PV cells.
- Chapter 4 is focused on the analysis of thermal energy storage technologies that provide a way of valorising solar heat and reducing the energy demand of buildings.



- Chapter 5 provides a description of main types of solar space and water heating systems and is also focused on active and combisystems. The f-chart method applicable to evaluate space and water heating in many climates and conditions and Transient System Simulation (TRNSYS) program is briefly described.
- Chapter 6 present the heat distribution systems in buildings, including hot-water radiators, radiant panels (floor, wall, ceiling and floor-ceiling) and room air heaters.
- Chapter 7 provides a detailed review of different solar thermal-driven refrigeration and cooling systems. Theoretical basis and practical applications for cooling systems within various working fluids assisted by solar energy and their recent advances are presented.
- Chapter 8 covers solar electric cooling systems including the solar PV and thermoelectric systems.
- Chapter 9 presents the operation principle of a heat pump (HP), discusses the vapour compression-based HP systems, and describes the thermodynamic cycle and they calculation, as well as operation regimes of a vapour-compression HP with electro-compressor.

This book provides a useful source of information and basis for extended research for all those involved in the field, whether as a graduate student, MSc student and also PhD student, academic, scientific researcher, industrialist, consultant, or government agency with responsibility in the area of solar energy.

## LANGUAGE IN THE DIGITAL ERA: CHALLENGES AND PERSPECTIVES

Daniel DEJICA, Gyde HANSEN, Peter SANDRINI, Iulia PARA

Published by De Gruyter Open Ltd, Warsaw/Berlin

Part of Walter de Gruyter GmbH, Berlin/Boston, 2016, 246p.

ISBN: 978-3-11-047204-2, e-ISBN: 978-3-11-047205-9

DOI: <https://doi.org/10.1515/9783110472059>

### Short description of the context

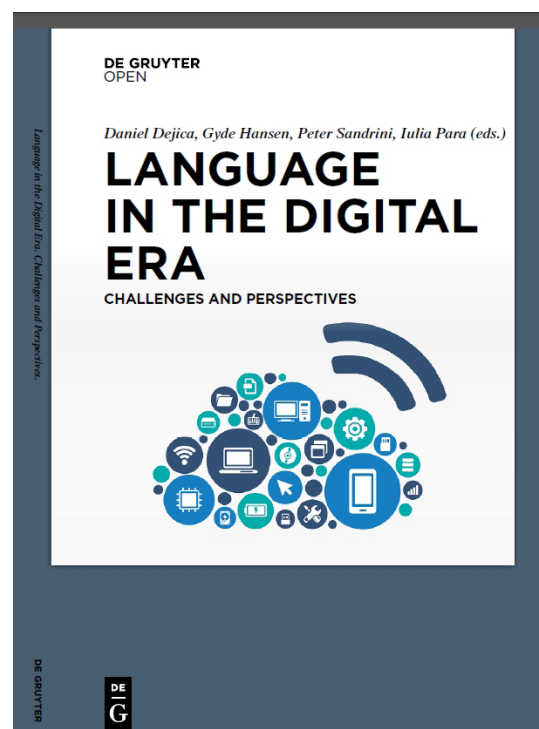
Edited by Daniel Dejica (Politehnica University of Timișoara), Gyde Hansen (Copenhagen Business School), Peter Sandrini (University of Innsbruck) and Iulia Para (University of the West, Timișoara) and published by De Gruyter, this collected volume pinpoints the impact of new technologies on languages and communication, highlights the evolution and changes undergone by humanities in conjunction with technological innovation, and looks at the way the language industry has adapted itself to the challenges of today's digitized world.

### Purpose and Motivation of the book

The need for cooperation in such areas as industry, transportations, communications, or entertainment, the ever-growing increase in international trade, the enlargement and proliferation of international institutions, the need to keep up with the latest advances in all branches of science and technology, the linguistic consequences of the EU enlargement and the Digital Agenda for Europe are only some of the situations which account for the need to investigate the evolution of language in a globally digitized world. To address the needs of research in this ever-growing and ever-changing context, the editors brought together the contributions of several humanities scholars from Romania and abroad, who focus on the evolution of language in the digital era. The eighteen contributions are divided into three thematic parts, which explore general aspects of humanities and linguistics in the digital environment, the evolution of language and translation in today's digitized society, and the changes, challenges and perspectives of language teaching and learning in the age of technology.

### Summary

The Introduction of the book is signed by the editors; it includes a rationale, a description of the book (a summary based on the abstracts provided by each contributor) and a section of notes on contributors.



Part 1, *Humanities Gone Digital*, includes four chapters and explores general aspects of humanities and linguistics in the digital environment.

Part 2, *Language and Translation: From Pen and Paper to the Electronic Environment*, consists of eight contributions, which focus on a more specific branch of Philology, namely translation. The topics discussed include, but are not limited to the impact of new technologies on specialised translation, online resources for terminology management, translation of online advertising, subtitling, etc.

Part 3, *Language Teaching and Learning in the Age of Technology*, includes six chapters on language teaching and learning and will address the changes, challenges and perspectives of didactics in the age of technology.

Each contribution is divided into several sections that present the state of the art and the methodology used, and discuss the results and perspectives of the authors. The book is recommended to scholars, professionals, students and anyone interested in the changes within the humanities in conjunction with technological innovation or in the ways language is adapting to the challenges of today's digitized world.