



COST Action TU1205 (BISTS)

Building Integration of Solar Thermal Systems DESIGN AND APPLICATIONS HANDBOOK

Edited by Soteris A. Kalogirou

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This book may be cited as:
COST Action TU1205 BISTS – Design and Applications Handbook
ISBN: 978-9963-697-22-9
Publication date: March 2017

Handbook cover: Constantinos Vassiliades

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PREFACE

This handbook produced by the members of the COST Action TU1205 – Building Integrated Solar Thermal Systems (BISTS), funded by COST, 2013-2017. It covers introductory subjects on the presentation of the Action, the classification and characterisation of BISTS and basic resource (solar radiation) analysis. Following on, Section 2 details the basic BISTS design, including architectural planning, thermal and optical design of BISTS, modelling of the systems, installation, testing, commissioning and maintenance as well as life cycle analysis, economics and legal issues. Section 3 presents new options with respect to emerging architectural design concepts, system and application options, materials, retrofitting BISTS and thermal storage integration. Section 4 presents five different innovative BISTS designs developed by various Action members, a building erected in Israel where BISTS are applied extensively, as well as the modelling of novel solar thermal collectors suitable for building integration. The last two sections deal with the outlook of the technology and basic conclusions obtained from this Action with supporting material, including journals that publish material relevant to BISTS, participant research and testing centres and infrastructures, international activities, networks and projects and a comprehensive database of BISTS applications, presented in a connected publication produced by this Action. Many more details can be found in the Action website: <http://www.tu1205-bists.eu/>.

We hope that the material presented in this handbook will be of interest to architects, solar engineers, building services engineers, government bodies and anyone who has an interest in this subject. Many thanks to the Action members and non-members who participated in the writing of the various chapters and of course to the COST Office for funding this Action.

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