SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY

2012 HIGHLIGHTS

SHC Task 39
Polymeric Materials for Solar Thermal Applications

THE ISSUE

One of the greatest challenges of the 21st century is to secure sustainable and save energy supply and to considerably reduce CO_2 emissions and the potential serious consequences of climate change. The challenging goals with regard to the contributions of renewable energies cannot be obtained without a considerable growth of the solar thermal markets worldwide. Therefore, reliable, efficient and cost-competitive system components are required in large quantities. Today solar thermal collectors mainly consist of glass and metals whereas especially market prices for metals are subject to big fluctuations.

These issues demand the introduction of new materials, of which polymers seem to have a strong preference with regard to mass-production techniques, new design freedom, cost- and weight reduction.

OUR WORK

The objective of Task 39 is the assessment of the applicability and the cost reduction potential by using polymeric materials and polymer-based, novel designs of suitable solar thermal systems and to promote increased confidence in the use of these products by developing and applying appropriate methods for assessment of durability and reliability.

These goals will be achieved through either less expensive materials or less expensive manufacturing processes.

PARTICIPATING COUNTRIES

Germany
Austria
Norway
Portugal
Slovenia
Sweden
Netherlands
Canada
USA
Brazil

Task Date 2006-2014
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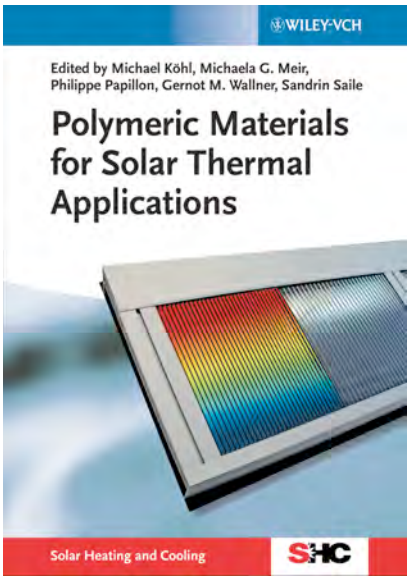
KEY RESULTS OF 2012

Polymeric Materials for Solar Thermal Applications
Publication of the Solar Heating and Cooling Series, Vol. 1

The Task 39 handbook *Polymeric Materials for Solar Thermal Applications* went on sale in October 2012. Volume 1 of the new Solar Heating and Cooling Series covers the Task work done during phase 1 (2006-2010). This first of its kind book discusses how the use of polymers makes solar thermal applications more economically attractive and bridges the gap between basic science and technological applications. This application-oriented handbook is relevant for researchers, scientists, engineers, and technicians active in the solar thermal field and/or polymer sector and a useful companion for everyone who is interested in working his/her way into this promising field of research. *Polymeric Materials for Solar Thermal Applications* is available on www.wiley-vch.de. ISBN: 978-3-527-33246-5.



Task 39 Dissemination Workshop in Berlin
Industry and research show strong interest in ongoing work

For the dissemination of expert knowledge and gathered results, an open industry workshop on May 16, 2012 was organized. The workshop was held at the Grand Hotel Esplanade in Berlin, Germany. About 42 participants from industry and research in the plastics and/or solar thermal sector participated in the event. Lively discussions showed that the interest in polymeric components for solar thermal applications is higher than ever. Problems, however, are seen in the production of cost-efficient polymeric materials and systems and therefore Task 39 has taken on this challenge and is investigating the issue with the help of detailed life-cycle and cost analyses. Additional work on the development of competitive polymeric solar thermal systems also is being conducted in the frame of Task 39 related national or international projects.