

Editorial

Surfaces and Interfaces for Renewable Energy

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Abstract: Energy is a growing need in today's world. Citizens and governments are increasingly aware of the sustainable use that must be made of natural resources and the great negative impact on the environment produced by conventional energies. Therefore, developments in energy systems based on renewable energies must be carried out in the very near future. To ensure their sustainability, they must be made of durable materials, and for this, the study of coatings is extremely important. This is also vital in systems based on solar energy, where the optical properties of the materials must be preserved as long as possible, and to this must be added the fact that they tend to be installed in very aggressive environments from the point of view of corrosion. Therefore, this special issue aims to contribute to the development of this challenge.

Keywords: solar energy; coatings; thin film; reflector; light trapping; concentrating solar thermal energy; reflectance corrosion

1. Introduction

The worldwide demand for electricity will grow to 50% in the next 20 years, mainly due to the increase in the world population, the generalization of electric vehicles as a form of transport and the boom in the battery market. However, this huge increase will be covered almost completely by renewable energy sources. The durability of renewable energy systems depends to a large extent on their surfaces. The improvement of coatings is one of the great challenges of the engineering and material science applied to these systems. This Special Issue will focus on the developments in this particular domain.

This Special Issue includes theoretical or practical issues of the following topics of interest, but are not limited to:

- Antireflective coatings;
- Antisoiling coatings;
- Corrosion resistance coatings;
- Increased optical properties (reflectance, absorptance, transmittance, and emittance);
- Surface treatment;
- Solar cells;
- Scanning electron microscopy;
- X-ray diffraction;
- Thin films;
- Polymers;
- Plastic coatings;
- Corrosion;
- Nanoparticles and nanotechnology;

- Titanium dioxide;
- Carbon nanotubes;
- Aluminum coatings;
- Paints;
- Composite materials;
- Environmental impact;
- Lifetime prediction;
- Accelerated aging methods; and
- Optical measurement techniques.

2. Statistics of the Special Issue

The authors' geographical distribution by country for the published papers is shown in Table 1, where it is possible to observe 27 authors from Spain and Germany.

Table 1. Geographic distribution by the country of author.

Country	Number of Authors
Spain	16
Germany	11
Total	27

3. Authors of this Special Issue

The authors of this special issue and their main affiliations are summarized in Table 2, where there are four authors on average per manuscript.

Table 2. Affiliations and bibliometric indicators for the authors.

Author	Main Affiliation	Country	Reference
Francisco Buendía-Martínez	CIEMAT-Plataforma Solar de Almería	Spain	[1,2]
Aránzazu Fernández-García	CIEMAT-Plataforma Solar de Almería	Spain	[1,2]
Florian Sutter	German Aerospace Center (DLR)	Germany	[1,2]
Loreto Valenzuela	CIEMAT-Plataforma Solar de Almería	Spain	[1]
Alejandro García-Segura	CIEMAT-Plataforma Solar de Almería	Spain	[1]
Johannes Wette	German Aerospace Center (DLR)	Germany	[2]
David Argüelles-Arízcon	CIEMAT-Plataforma Solar de Almería	Spain	[2]
Itziar Azpitarte	IK4-Tekniker	Spain	[2]
Gema Pérez	Rioglass Solar S.A.	Spain	[2]
Ceyhun Oskay	DECHEMA-Forschungsinstitut	Germany	[3]
Tobias M. Meißner	DECHEMA-Forschungsinstitut	Germany	[3]
Carmen Dobler	DECHEMA-Forschungsinstitut	Germany	[3]
Benjamin Grégoire	DECHEMA-Forschungsinstitut	Germany	[3]
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