



Steinbeis-Europa-Zentrum, Steinbeis 2i GmbH,  
Institute for Photonics and Nanotechnology  
of the National Research Council (Ed.)

# Towards Best Practice in Photonics Outreach for Young People



PHOTONICS PUBLIC PRIVATE PARTNERSHIP

PHOTONICS<sup>21</sup>

Photonics4All  
Discover the Power of Light 

*Steinbeis-Europa-Zentrum, Steinbeis 2i GmbH,  
Institute for Photonics and Nanotechnology of the National Research Council (Ed.)*  
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## Imprint

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## Foreword

Optics and *photonics* are widely regarded today as key technologies. Many science and technology experts have described the 21st century as the century of the photon because optics and photonics technologies are providing science and industry with a wide-range of essential applications impacting nearly all areas of our lives! In fact, Photonics has been recognized as a *Key Enabling Technology* (KET) by the European Commission in a Communication<sup>1</sup> dating back to 2009. However, despite its importance photonics is still not a well-known technology to a majority of people.

This handbook is devoted to all those public and private organisations willing to organize outreach activities for young people. In particular, we address universities, research centres, science centres, museums that have outreach at the core of their activity, and also city councils, regional administrations and national governments interested in the promotion of scientific knowledge to young children.

The objective of this handbook is to *summarize best practices on how to promote photonics and light-based technologies to young people*. We hope that our experiences in the Photonics4All project will serve all those interested as a useful inspiration and guide when promoting photonics. The handbook is not meant to be authoritative, nor exhaustive in terms of photonics outreach, which is why we decided to publish this document with the title ‘Towards Best Practice in Photonics Outreach’, but we hope it provides an overview of the best working approaches undertaken in the Photonics4All project and benefits the network of science communicators throughout Europe. The handbook should be relevant to all those interested in outreach, whether newcomers or more experienced science communicators. Please pick and choose the elements that are relevant for your own outreach activity. The text in this handbook is accompanied by practical and user-friendly information in the annex; pages of which can be printed out individually. Policy makers too can also find relevant information in the conclusions at the end of the booklet.

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<sup>1</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009DC0512&from=EN>

Please note that two other handbooks are also available in this series, one on photonics outreach activities targeted at entrepreneurs, and a second one on best practices to increase the general public's awareness of Photonics.

*Photonics4All Consortium,  
December 2016*

## Acknowledgements

A number of partners have contributed to this publication throughout the project; from the initial proposal of good practices, to the selection of topics and to the final product. We would like to thank the European Commission and Photonics21 for the promotion of the project “Photonics4All“ under the EU program “Horizon 2020“ for research and Innovation, along with our partners who have supported our work during the lifetime of the project. We would like particularly to thank our sister projects “GoPhoton!” and “Light2015” for sharing their best practice in how to increase awareness of photonics, one of those (“LIGHTtalks”) being included in this handbook.

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# 1 Introduction

The following outreach tools and activities developed and delivered in the Photonics4All project, along with those of our partners, are covered in the handbook; a Photonics App, Photonics Games, a Photonics Animated Video, Photonics Children's Universities, Photonics Teacher Training Sessions and other Photonics Outreach activities. In each section which describes the activity or tool we include the following: a description of each activity, an outline of the intended target groups, how the event was organised / the tool developed, along with methods to assess the impact of each type of activity, and our experiences and recommendations of delivering the activity or working with the tool. At the end of the handbook are Annexes which detail event planning tools, contact details for each partner (Annex 7) – all of whom can be contacted for further information), along with a short description of the Photonics4All project (Annex 6).

## 2 Photonics App

**Objective:** The Photonics4all App was developed primarily to promote an understanding of, and enthusiasm for, photonics amongst young people (using technologies that appeal to them i. e. their smartphones and tablets), however the App is also suitable for the young people's parents, the wider general public and for teachers too.

The App covers basic information about photonics through the interactive and fun games / activities included in the App.

**Target group:** children (pupils aged 12–18)

**Organisation:** This section will cover first an overview of the App Contents, secondly, the method used to produce the App, thirdly the App development, fourthly, links to the App itself and lastly how the App has been promoted to date.