

# Nanoporous polymeric aerogels—based structured photocatalysts for the removal of organic pollutant from water under visible or solar light

Christophe Daniel,<sup>1</sup> Wanda Navarra,<sup>3</sup> Vincenzo Venditto,<sup>3</sup> Olga Sacco,<sup>3</sup> Vincenzo Vaiano<sup>2</sup>

<sup>1</sup>Dipartimento di Chimica e Biologia and INSTM Research Unit, Università degli Studi di Salerno, Fisciano (Salerno), Italy; <sup>2</sup>Department of Industrial Engineering, University of Salerno, Fisciano (Salerno), Italy; <sup>3</sup>Department of Chemistry and Biology "A. Zambelli", University of Salerno, Fisciano (Salerno), Italy

## Chapter outline

- 1. Introduction 99**
- 2. Nanoporous aerogels 103**
  - 2.1 Preparation, structure, and morphology of aerogels 103
  - 2.2 Sorption properties of aerogels 106
- 3. Photocatalytic nanoporous aerogels 109**
  - 3.1 Preparation, structure, and morphology 109
  - 3.2 Photocatalytic activity of NdT/s-PS nanoporous composite aerogels 111
- 4. Conclusions and perspectives 115**
- Acknowledgments 117**
- References 117**

## 1. Introduction

Freshwater in aquifers, lakes, and rivers useable for drinking represents about 0.40% of total water present on earth and fresh