

**SILICON DIOXIDE NANOPARTICLES:
PREPARATION, PROPERTIES, APPLICATION
REVIEW**

PART II¹

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ABSTRACT

Silicon dioxide nanoparticles are essential in the production of composite materials. The article provides an overview of the latest advances in the production, and properties of silicon dioxide nanoparticles, as well as the physical and mechanical characteristics of polymer and cement-based materials modified with nano-SiO₂.

Keywords: nanotechnology, silicon dioxide, silicon dioxide nanoparticles, nanocomposites

**Polymer and Cement-Based Materials Reinforced
With Silicon Oxide Nanoparticles**

Introduction

- 1. Epoxy resin**
- 2. Polyethylene**
- 3. Polyurethane**
- 4. Polypropylene**
- 5. Elastomer matrices**
 - 5.1. Thermoplastic elastomers
 - 5.2. Natural rubber latex
 - 5.3. Styrene-butadiene rubber
 - 5.4. Silicone rubber
 - 5.5. Elastomer blends
- 6. Polystyrene**
- 7. Polycarbonate**
- 8. Geopolymer**
 - 8.1 GP-SiO₂ nanocomposites based on high calcium fly ash
 - 8.2 GP-SiO₂ nanocomposites based on kaolinite materials
- 9. Cement based matrices**
 - 9.1. Cement paste
 - 9.2. Cement mortar
 - 9.3. Portland cement concrete

Conclusion

References

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