Porous silicon for biomedical applications / edited by Helder A. Santos

---

Abstrak

Porous silicon has a range of properties, making it ideal for drug delivery, cancer therapy, and tissue engineering. Porous silicon for biomedical applications provides a comprehensive review of this emerging nanostructured and biodegradable biomaterial.
Chapters in part one focus on the fundamentals and properties of porous silicon for biomedical applications, including thermal properties and stabilization, photochemical and nonthermal chemical modification, protein-modified porous silicon films, and biocompatibility of porous silicon. Part two discusses applications in bioimaging and sensing, and explores the optical properties of porous silicon materials; in vivo imaging assessment and radiolabelling of porous silicon; and nanoporous silicon biosensors for DNA sensing and for bacteria detection. Finally, part three highlights drug loading and characterization of porous silicon materials, tumor targeting and imaging, and porous silicon scaffolds for functional tissue engineering, stem cell growth, and osteodifferentiation.
With its acclaimed editor and international team of expert contributors, Porous Silicon for Biomedical Applications is a technical resource and indispensable guide for all those involved in the research, development, and application of porous silicon and other biomaterials, while providing a comprehensive introduction for students and academics interested in the field.