

1. Different synthesis process of Carbon nanomaterials for biological applications

1.1 Introduction

1.2 Preparation/Synthesis of carbon nanomaterials

1.2.1 Synthesis of carbon nanoparticles

1.2.2 Synthesis of Carbon nanotubes

1.2.3 Synthesis of Graphene, Graphene oxide and reduced Graphene Oxide

1.3. Properties of Carbon nanomaterials

1.4. Conclusion and perspectives of carbon nanomaterials

2 Application of carbon-based nanomaterials for removal of biologically toxic materials

2.1 Introduction

2.2 Application for the removal of biologically toxic materials

2.2.1 Removal of biologically toxic materials using carbon nanoparticles

2.2.2 Removal of biologically toxic materials using carbon nanotubes

2.2.3 Removal of biologically toxic materials using Graphene/Graphene Oxide/reduced Graphene Oxide

2.3 Conclusion

3. Application of carbon-based nanomaterials as optical and electrical biosensors

3.1 Introduction

3.2 Application for Biosensor

3.2.1 Bio-sensor using carbon nanoparticles

3.2.2 Bio-sensor using using carbon nanotubes

3.2.3 Bio-sensor using using Graphene/Graphene Oxide/reduced Graphene Oxide

3.3 Conclusion

4 Application of carbon-based nanomaterials as Bio-imaging probe

4.1 Introduction

4.2 Application for bio-imaging probe

4.2.1 Bio-imaging probe using carbon nanoparticles

4.2.2 Bio-imaging probe using carbon nanotubes

4.2.3 Bio-imaging probe using Graphene/Graphene Oxide/reduced Graphene Oxide

4.3 Conclusion

5. Application of carbon-based nanomaterials as drug and gene delivery carrier

5.1 Introduction

5.2 Application in drug and gene delivery

5.2.1 Bio-distribution and drug/gene delivery using carbon nanoparticles

5.2.2 Bio-distribution and drug/gene delivery using carbon nanotubes

5.2.3 Bio-distribution and drug/gene delivery using Graphene/Graphene Oxide/reduced Graphene Oxide

5.3 Conclusion

6. Biosafety of carbon nanomaterials

6.1 Introduction

6.2 Origin of toxicity

6.2.1 Small size

6.2.2 Solubility

6.2.3 Easy entry into body

6.3 Review of toxicity study

6.4 Conclusion