

# Contents

**Preface: Converging technologies from the nanoscale require enhanced ethics — VII**

**Forewords — XI**

**Acknowledgments — XVII**

**Introduction: Overall vision of ethics in nanotechnology developments — XXIII**

**Embedding ethics in nanomedicine: Europe acted promptly — XXVII**

**List of contributing authors — XXXVII**

## **Part I: Highlights of ethics in nanotechnology**

Frans W. A. Brom, Rinie van Est and Bart Walhout

**1 Nanoethics: Giving orientation to societal reflection — 3**

## **Part II: Nanotechnology and ethical reflections**

Bengt Fadeel and Phil Sayre

**2 Toward a revitalized vision of ethics and safety for the revolutionary nanotechnologies — 23**

Marcel Van de Voorde and Michael Vlerick

**3 Nanotechnology: Ethical guidelines for a disruptive technology — 43**

Dave H. A. Blank

**4 Defining the nanoethics frontier — 57**

Karolina Jurczyk, Urs Braegger and Mieczyslaw Jurczyk

**5 Application of nanotechnology for dental implants — 75**

Daisuke Fujita

**6 Nanomaterial characterization for nanoethics — 95**

### **Part III: Health, environment and industrial aspects of nanoethics**

Thomas H. Brock

**7 Ethical aspects of nanomaterials in industry — 119**

Ajey Lele and Kritika Roy

**8 Militarization of nanotechnology — 145**

Thomas Reuter

**9 Nanotechnology in food: Ethics, industry practices, and regulatory frameworks — 159**

Jean Pierre Massué

**10 Ethical challenge of nanomedicine — 177**

Oluwatosin Ademola Ijabadeniyi

**11 Nanofood and ethical issues — 191**

### **Part IV: Nanotechnology governance: Societal and legal aspects**

Ilise L. Feitshans

**12 Nanoethics for safe work: philosophical foundations of safer nanodesign protecting workplace health — 209**

Armin Grunwald

**13 Twenty years of nanoethics: Challenges, clarifications, and achievements — 273**

### **Part V: Nanotechnology philosophy: Dilemmas and ethical issues**

Albert Ed. Evrard and Praveen Martis

**14 Christian thinking and acting in nanotechnologies — 293**

Michael Vlerick

**15 Calibrating the balance: The ethics of regulating the production and use of nanotechnology applications — 331**

Nobuyuki Haga

**16 Importance of social morals in nanotechnology — 343**

Rune Nydal

**17 Revitalizing nanoethics: Nanotechnology at the center of nanoethics — 361**

Marcel Van de Voorde and Gunjan Jeswani

**Conclusion — 373**

**Index — 377**