

# Preface

Popular arts constitute a fascinating and timely mirror of the perception of our societies toward technological and scientific advances. In 1962, during the Cold War, Marvel Comics published the first history of “The Incredible Hulk”. This story is about a physicist working on a new type of nuclear bomb, who is accidentally irradiated by gamma rays. As a result of DNA damaging, the scientist can undergo a transformation into a giant, aggressive monster as a result of stress or anger. Forty years after, Ang Lee’s movie “Hulk” tells a different story. The scientist is now a bionuclear researcher working on “nanomeds” for the US Army. He inherited modified DNA from his father, also a scientist working on genetic methods to improve tissue regeneration. Here, a combination of accidental exposition to both gamma rays and nanomeds turns him into Hulk.

This modification is revealing of the current concerns of the public toward nuclear energy, genetics and, at the beginning of this new century, nanoscience. It is interesting to emphasize that the positive impact of these technologies are not neglected (i.e. “nanomeds”) but the message to us, as scientists, is clear: *take care*. Those of us who had the opportunity to take part in public discussion would probably agree that whatever the fascination for achievements and promises of nanotechnology is, we can no longer afford not to provide a more complete and critical picture of this fast-developing area.

The present volume was conceived while keeping this message in mind. We found important that the gathered contributions address the whole life cycle of nanomaterials, from synthesis to applications and from waste to environmental fate. By doing so, it was possible to present a balanced vision between the pros and the cons, with the hope to contribute to a better evaluation of the benefit-to-risk ratio of nanotechnology. Noticeably, this book closes with a number of contributions that emphasize the current efforts made worldwide to improve the acceptability of nanotechnology, both in terms of environmental and societal impact.

Should the readers find useful answers or unexpected questions in this book, we, as editors, together with all contributors who have heartedly agreed to share their expertise and vision, would feel rewarded for our common efforts and privileged to have such a unique opportunity to say: *we care*.

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