



# Self-Healing Polymers: From Principles to Applications

From Wiley-VCH

Download now

Read Online 

## Self-Healing Polymers: From Principles to Applications From Wiley-VCH

Self-healing is a well-known phenomenon in nature: a broken bone merges after some time and if skin is damaged, the wound will stop bleeding and heals again. This concept can be mimicked in order to create polymeric materials with the ability to regenerate after they have suffered degradation or wear. Already realized applications are used in aerospace engineering, and current research in this fascinating field shows how different self-healing mechanisms proven successful by nature can be adapted to produce even more versatile materials.

The book combines the knowledge of an international panel of experts in the field and provides the reader with chemical and physical concepts for self-healing polymers, including aspects of biomimetic processes of healing in nature.

It shows how to design self-healing polymers and explains the dynamics in these systems. Different self-healing concepts such as encapsulated systems and supramolecular systems are detailed. Chapters on analysis and friction detection in self-healing polymers and on applications round off the book.

 [Download Self-Healing Polymers: From Principles to Applicat ...pdf](#)

 [Read Online Self-Healing Polymers: From Principles to Applic ...pdf](#)

# Self-Healing Polymers: From Principles to Applications

*From Wiley-VCH*

## Self-Healing Polymers: From Principles to Applications From Wiley-VCH

Self-healing is a well-known phenomenon in nature: a broken bone merges after some time and if skin is damaged, the wound will stop bleeding and heals again. This concept can be mimicked in order to create polymeric materials with the ability to regenerate after they have suffered degradation or wear. Already realized applications are used in aerospace engineering, and current research in this fascinating field shows how different self-healing mechanisms proven successful by nature can be adapted to produce even more versatile materials.

The book combines the knowledge of an international panel of experts in the field and provides the reader with chemical and physical concepts for self-healing polymers, including aspects of biomimetic processes of healing in nature.

It shows how to design self-healing polymers and explains the dynamics in these systems. Different self-healing concepts such as encapsulated systems and supramolecular systems are detailed. Chapters on analysis and friction detection in self-healing polymers and on applications round off the book.

## Self-Healing Polymers: From Principles to Applications From Wiley-VCH Bibliography

- Sales Rank: #3943980 in Books
- Published on: 2013-08-05
- Original language: English
- Number of items: 1
- Dimensions: 9.70" h x 1.10" w x 6.90" l, 2.25 pounds
- Binding: Hardcover
- 446 pages

 [Download Self-Healing Polymers: From Principles to Applicat ...pdf](#)

 [Read Online Self-Healing Polymers: From Principles to Applic ...pdf](#)

## **Editorial Review**

### Review

“In summary, whilst this book is a must for researchers (PhD scholars and above) in polymer and polymer-related sciences, it will also be valuable for scientists who interface with biomaterials, drug delivery, environmental science, engineering and other physical sciences.” (*Applied Organometallic Chemistry*, 1 August 2015)

### From the Back Cover

Self-healing is a well-known phenomenon in nature: a broken bone merges after some time and if skin is damaged, the wound will stop bleeding and heals again. This concept can be mimicked in order to create polymeric materials with the ability to regenerate after they have suffered degradation or wear. Already realized applications are used in aerospace engineering, and current research in this fascinating field shows how different self-healing mechanisms proven successful by nature can be adapted to produce even more versatile materials.

The book combines the knowledge of an international panel of experts in the field and provides the reader with chemical and physical concepts for self-healing polymers, including aspects of biomimetic processes of healing in nature.

It shows how to design self-healing polymers and explains the dynamics in these systems. Different self-healing concepts such as encapsulated systems and supramolecular systems are detailed. Chapters on analysis and friction detection in self-healing polymers and on applications round off the book.

### About the Author

**Wolfgang H. Binder** is currently Full Professor for Macromolecular Chemistry at the Martin-Luther University Halle-Wittenberg (see [www.macrochem.uni-halle.de](http://www.macrochem.uni-halle.de)). He received his PhD in Organic Chemistry in 1995 at the University of Vienna. In his post doc research at Emory University, USA, he specialized on colloidal chemistry/macro-molecular chemistry. In 1997 he became an Assistant Professor at the Technical University of Vienna and in 2004 Associate Professor. His research is focused on synthesis and self-assembly of tailored polymers and analytical polymer science, with applications in material science, nanotechnology and medicine; Wolfgang H. Binder has published more than 120 scientific articles.

## **Users Review**

### **From reader reviews:**

#### **Brandon Harmon:**

Do you have favorite book? If you have, what is your favorite's book? Reserve is very important thing for us to understand everything in the world. Each book has different aim or even goal; it means that book has different type. Some people sense enjoy to spend their a chance to read a book. These are reading whatever they acquire because their hobby is actually reading a book. Think about the person who don't like reading

through a book? Sometime, man or woman feel need book after they found difficult problem or exercise. Well, probably you'll have this Self-Healing Polymers: From Principles to Applications.

**Elizabeth Ashton:**

Book will be written, printed, or highlighted for everything. You can understand everything you want by a e-book. Book has a different type. To be sure that book is important issue to bring us around the world. Adjacent to that you can your reading skill was fluently. A e-book Self-Healing Polymers: From Principles to Applications will make you to possibly be smarter. You can feel more confidence if you can know about every thing. But some of you think that open or reading the book make you bored. It isn't make you fun. Why they could be thought like that? Have you looking for best book or suited book with you?

**Jennifer Bryan:**

What do you concentrate on book? It is just for students since they are still students or that for all people in the world, exactly what the best subject for that? Simply you can be answered for that concern above. Every person has diverse personality and hobby for every single other. Don't to be compelled someone or something that they don't wish do that. You must know how great and important the book Self-Healing Polymers: From Principles to Applications. All type of book can you see on many sources. You can look for the internet sources or other social media.

**Patricia McGuire:**

This Self-Healing Polymers: From Principles to Applications is great publication for you because the content which is full of information for you who else always deal with world and possess to make decision every minute. This particular book reveal it facts accurately using great plan word or we can point out no rambling sentences within it. So if you are read the idea hurriedly you can have whole information in it. Doesn't mean it only offers you straight forward sentences but tough core information with wonderful delivering sentences. Having Self-Healing Polymers: From Principles to Applications in your hand like finding the world in your arm, data in it is not ridiculous 1. We can say that no book that offer you world inside ten or fifteen tiny right but this e-book already do that. So , this is good reading book. Heya Mr. and Mrs. hectic do you still doubt in which?

**Download and Read Online Self-Healing Polymers: From Principles to Applications From Wiley-VCH #94KT5IEHNUF**

## **Read Self-Healing Polymers: From Principles to Applications From Wiley-VCH for online ebook**

Self-Healing Polymers: From Principles to Applications From Wiley-VCH Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Self-Healing Polymers: From Principles to Applications From Wiley-VCH books to read online.

### **Online Self-Healing Polymers: From Principles to Applications From Wiley-VCH ebook PDF download**

#### **Self-Healing Polymers: From Principles to Applications From Wiley-VCH Doc**

**Self-Healing Polymers: From Principles to Applications From Wiley-VCH Mobipocket**

**Self-Healing Polymers: From Principles to Applications From Wiley-VCH EPub**

**94KT5IEHNUF: Self-Healing Polymers: From Principles to Applications From Wiley-VCH**