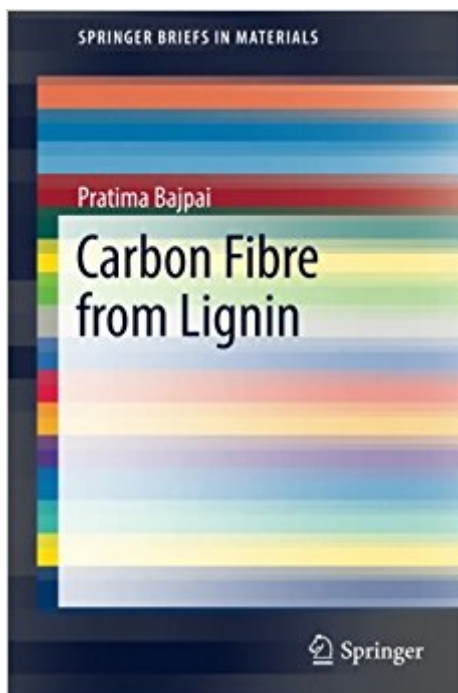


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# Carbon Fibre From Lignin (SpringerBriefs In Materials)



## Synopsis

This book presents detailed information on the production and properties of carbon fibers derived from lignin precursors. Focusing on future directions in the carbon fiber industry, it also introduces a novel process for obtaining high-purity lignin, a key aspect in the manufacture of high-quality carbon fiber. Carbon fiber is currently the most preferred lightweight manufacturing material and is rapidly becoming the material of choice for manufacturers around the world. Although more than 80% of commercial carbon fiber is estimated to use PAN (polyacrylonitrile) as a precursor, carbon fiber manufactured from PAN is expensive and therefore its application is limited to high-performance structural materials. Lignin is the second most abundant biopolymer in nature after cellulose and offers a carbon-rich, renewable resource. As a byproduct of the pulp and paper industry and the production of cellulosic ethanol, lignin is also available at low cost, making it an economically attractive alternative to PAN for the production of carbon fibers, as highlighted in this book. The information presented will be of interest to all those involved in the investigation of carbon fiber materials, carbon fiber manufacturers and carbon fiber users.

## Book Information

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## Customer Reviews

Dr. Pratima Bajpai holds a PhD from the National Sugar Institute (NSI) in Kanpur, India. She is presently a Technical Consultant in the pulp and paper industry and has over 30 years of research experience at the NSI, University of Saskatchewan, University of Western Ontario in Canada, and

the Thapar Center for Industrial Research and Development in India. She has also worked as a Visiting Professor at the University of Waterloo, Canada and Visiting Scientist at Kyushu University, Fukuoka, Japan. Dr Bajpai's main areas of expertise are industrial biotechnology, pulp and paper, and environmental biotechnology. She has made significant contributions to industrial biotechnology and is a recognized expert in the field. Currently, she is actively engaged in commercializing biotechnological processes for the pulp and paper industry. She has authored more than 150 publications in leading international journals and conference proceedings. She has also written several advanced-level technical books on environmental and biotechnological aspects of pulp and paper, which have been published by leading publishers including PIRA International, UK; Springer, Germany; Miller Freeman USA; John Wiley; and Elsevier Science. She has also contributed chapters to a number of books and encyclopedias, holds 11 patents and has written several technical reports. Dr. Bajpai has implemented several processes in Indian paper mills, and is an active member of the American Society of Microbiologists and reviewer for several international research journals.

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