Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics

Azhar Iqbal Kashif Butt

Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics

Azhar Iqbal Kashif Butt

Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics Azhar Iqbal Kashif Butt

This study deals with the optimal control problems of the glass tube drawing processes where the aim is to control the cross-sectional area (circular) of the tube by using the adjoint variable approach. The process of tube drawing is modeled by four coupled nonlinear partial differential equations. These equations are derived by the axisymmetric Stokes equations and the energy equation by using the approach based on asymptotic expansions with inverse aspect ratio as small parameter. Existence and uniqueness of the solutions of stationary isothermal model is also proved. By defining the cost functional, we formulated the optimal control problem. Then Lagrange functional associated with minimization problem is introduced and the first and the second order optimality conditions are derived. We also proved the existence and uniqueness of the solutions of the stationary isothermal model. We implemented the optimization algorithms based on the steepest descent, nonlinear conjugate gradient, BFGS, and Newton approaches. In the Newton method, CG iterations are introduced to solve the Newton equation. Numerical results are obtained for two different cases.

Download and Read Free Online Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics Azhar Iqbal Kashif Butt

From reader reviews:

Charles Hager:

The book Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics can give more knowledge and information about everything you want. So why must we leave a good thing like a book Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics? A few of you have a different opinion about guide. But one aim that will book can give many details for us. It is absolutely proper. Right now, try to closer using your book. Knowledge or facts that you take for that, you could give for each other; you could share all of these. Book Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics has simple shape however, you know: it has great and big function for you. You can look the enormous world by start and read a publication. So it is very wonderful.

Ollie Nadeau:

As people who live in the particular modest era should be change about what going on or info even knowledge to make them keep up with the era and that is always change and progress. Some of you maybe will probably update themselves by studying books. It is a good choice for you but the problems coming to you is you don't know what type you should start with. This Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics is our recommendation to help you keep up with the world. Why, because this book serves what you want and need in this era.

Dora Champagne:

Do you like reading a reserve? Confuse to looking for your favorite book? Or your book had been rare? Why so many issue for the book? But any kind of people feel that they enjoy to get reading. Some people likes reading, not only science book and also novel and Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics or others sources were given knowledge for you. After you know how the great a book, you feel want to read more and more. Science e-book was created for teacher or even students especially. Those guides are helping them to put their knowledge. In other case, beside science guide, any other book likes Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics to make your spare time considerably more colorful. Many types of book like here.

Mathew Casillas:

A lot of e-book has printed but it differs. You can get it by world wide web on social media. You can choose the top book for you, science, comedy, novel, or whatever by searching from it. It is referred to as of book Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics. Contain your knowledge by it. Without leaving behind the printed book, it could possibly add your knowledge and make anyone happier to read. It is most significant that, you must aware about reserve. It can bring you from one location to other place.

Download and Read Online Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics Azhar Iqbal Kashif Butt #Z3S2UNJ79L4

Read Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics by Azhar Iqbal Kashif Butt for online ebook

Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics by Azhar Iqbal Kashif Butt 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 Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics by Azhar Iqbal Kashif Butt books to read online.

Online Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics by Azhar Iqbal Kashif Butt ebook PDF download

Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics by Azhar Iqbal Kashif Butt Doc

Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics by Azhar Iqbal Kashif Butt Mobipocket

Optimal Control of Tube Drawing Processes: Theory, Algorithms, and Numerics by Azhar Iqbal Kashif Butt EPub