Developing High-Finesse Cavities for Phase Contrast Electron Microscopy



Filesize: 7.8 MB

Reviews

This publication is definitely not effortless to get going on looking at but really exciting to read through. It really is rally intriguing through looking at time period. Its been written in an remarkably straightforward way which is just soon after i finished reading through this book where basically altered me, change the way i think.

(Erna Langosh)

DEVELOPING HIGH-FINESSE CAVITIES FOR PHASE CONTRAST ELECTRON MICROSCOPY



GRIN Verlag Sep 2015, 2015. Taschenbuch. Book Condition: Neu. 211x146x7 mm. Neuware - Research Paper from the year 2014 in the subject Physics - Optics, University of California, Berkeley, language: English, abstract: The transmission electron microscope is an indispensable tool in science, with applications across medicine, materials science, and geology, among others. However, it is limited in its ability to operate with Zernike phase contrast, a technology commonplace in light microscopy. Zernike phase contrast can be obtained, but only by using carbon-film phase plates or similar methods, all of which are short-lived. Electrons moving close to the speed of light cause damage as they bombard the phase plates. The phase plates need to be replaced frequently, which introduces inconsistencies due to variations between the plates as they are replaced. The purpose of this paper is to demonstrate the plausibility of utilizing ponderomotive forces within an optical cavity to achieve phase contrast, creating a laser-based phase plate, thereby replacing the carbon films and eliminating swapping. We approach this problem by using a Fabry-Perot to concentrate the laser power to be able to achieve the necessary electron phase shift with conventional CO2 lasers. We demonstrate a cavity with finesse of ~24000 and numerical aperture of ~.016, and calculate the laser power needed to be supplied to be ~19W, well within the state of art. These results demonstrate the practicality of laser-based electron microscope phase plates. 28 pp. Englisch.



Read Developing High-Finesse Cavities for Phase Contrast Electron Microscopy Online Download PDF Developing High-Finesse Cavities for Phase Contrast Electron Microscopy

Other eBooks



Read Write Inc. Phonics: Orange Set 4 Storybook 2 | Think | Want to be a Bee

Oxford University Press, United Kingdom, 2016. Paperback. Book Condition: New. Tim Archbold (illustrator). 209 x 149 mm. Language: N/A. Brand New Book. These engaging Storybooks provide structured practice for children learning to read the Read...

Download ePub »



Your Pregnancy for the Father to Be Everything You Need to Know about Pregnancy Childbirth and Getting Ready for Your New Baby by Judith Schuler and Glade B Curtis 2003 Paperback

Book Condition: Brand New. Book Condition: Brand New.

Download ePub »



Daddyteller: How to Be a Hero to Your Kids and Teach Them What's Really by Telling Them One Simple Story at a Time

Createspace, United States, 2013. Paperback. Book Condition: New. 214 x 149 mm. Language: English . Brand New Book ***** Print on Demand *****. You have the power, Dad, to influence and educate your child. You can...

Download a Pub »



Becoming Barenaked: Leaving a Six Figure Career, Selling All of Our Crap, Pulling the Kids Out of School, and Buying an RV We Hit the Road in Search Our Own American Dream. Redefining What It Meant to Be a Family in America.

Createspace, United States, 2015. Paperback. Book Condition: New. 258 x 208 mm. Language: English . Brand New Book ***** Print on Demand *****. This isn t porn. Everyone always asks and some of our family thinks...

Download ePub »



The Day Lion Learned to Not Be a Bully: Aka the Lion and the Mouse

Createspace, United States, 2013. Paperback. Book Condition: New. Large Print. 279 x 216 mm. Language: English. Brand New Book ***** Print on Demand *****. The beloved Classic tale The Lion and the Mouse gets the...

Download ePub »