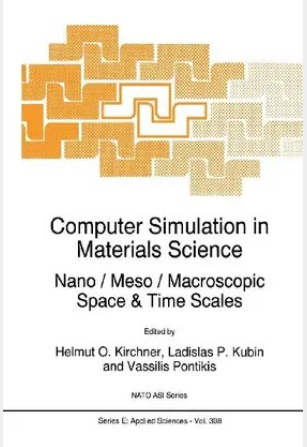
Kirchner / Kubin / Pontikis

Computer Simulation in Materials Science

Nano / Meso / Macroscopic Space & Time Scales



This volume collects the contributions to the NATO Advanced Study Institute (ASI); "Computer Simulation in Materials Science -NanolMesolMacroscopic Space and Time Scales", held on Ile d'Oleron (France) June 6-16, 1995.1his event was intended to present the state of the art in simulation techniques in Materials Science. For decades to come the limits of computing power will not allow for atomistic simulations of macroscopic specimens. Simulations can only be performed on various scales (nano, meso, micro, macro) with the constitutive input provided by simulations (or data) on the next smaller scale. The resulting hierarchy has been the main topic of many of lectures and seminars. Necessarily, special emphasis was placed on mesoscopic simulations bridging the gaps between nano (atomic) and micro space and time scales. During the ASI, lecturers and participants did not only consider fundamental problems, but also applications. Papers on the evolution of morphological patterns in phase transformations and plastic deformation, irradiation effects, mass transport and mechanical properties of materials in general, highlighted what has already been achieved. It was concluded that computer simulations must be based on realistic and efficient models, the fundamental equations controlling the dynamical evolution of microstructures, stochastic field kinetic models being a case in point.

This volume collects the contributions to the NATO Advanced Study Institute (ASI); "Computer Simulation in Materials Science -NanolMesolMacroscopic Space and Time Scales", held on Ile d'Oleron (France) June 6-16, 1995.1his event was intended to present the state of the art in simulation techniques in Materials Science. For decades to come the limits of computing power will not allow for atomistic simulations of macroscopic specimens. Simulations can only be performed on various scales (nano, meso, micro, macro) with the constitutive input provided by simulations (or data) on the next smaller scale. The resulting hierarchy has been the main topic of many of lectures and seminars. Necessarily, special emphasis was placed on mesoscopic simulations bridging the gaps between nano (atomic) and micro space and time scales. During the ASI, lecturers and participants did not only consider fundamental problems, but also applications. Papers on the evolution of morphological patterns in phase transformations and plastic deformation, irradiation effects, mass transport and mechanical properties of materials in general, highlighted what has already been achieved. It was concluded that computer simulations must be based on realistic and efficient models, the fundamental equations controlling the dynamical evolution of microstructures, stochastic field kinetic models being a case in point.

320,99 €
299,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9789401072274
Medium: Buch
ISBN: 978-94-010-7227-4
Verlag: Springer
Erscheinungstermin: 01.10.2011
Sprache(n): Englisch
Auflage: 1996
Serie: NATO Science Series E:
Produktform: Kartoniert
Gewicht: 969 g
Seiten: 604
Format (B x H): 160 x 240 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)