

Contents

Time-Dependent Density-Functional Theory: Features and Challenges, with a Special View on Matter Under Extreme Conditions	1
Carsten A. Ullrich	
Thermal Density Functional Theory in Context	25
Aurora Pribram-Jones, Stefano Pittalis, E.K.U. Gross, and Kieron Burke	
Innovations in Finite-Temperature Density Functionals	61
Valentin V. Karasiev, Travis Sjostrom, Debajit Chakraborty, James W. Dufty, Keith Runge, Frank E. Harris, and S.B. Trickey	
Toward a Comprehensive Treatment of Temperature in Electronic Structure Calculations: Non-zero-Temperature Hartree-Fock and Exact-Exchange Kohn-Sham Methods	87
Hannes Schulz and Andreas Görling	
Quantum Monte Carlo Techniques and Applications for Warm Dense Matter	123
Ethan Brown, Miguel A. Morales, Carlo Pierleoni, and David Ceperley	
The Structure of Warm Dense Matter Modeled with an Average Atom Model with Ion-Ion Correlations	151
D. Saumon, C.E. Starrett, J.A. Anta, W. Daughton, and G. Chabrier	
Dynamical Structure Factor in High Energy Density Plasmas and Application to X-Ray Thomson Scattering	177
Carsten Fortmann	
Progress in Warm Dense Matter and Planetary Physics	203
Winfried Lorenzen, Andreas Becker, and Ronald Redmer	

Diffusivity of Mixtures in Warm Dense Matter Regime	235
Tomorr Haxhimali and Robert E. Rudd	
A Review of Wave Packet Molecular Dynamics	265
Paul E. Grabowski	

Frontiers and Challenges in Warm Dense Matter

Graziani, F.; Desjarlais, M.P.; Redmer, R.; Trickey, S.B.
(Eds.)

2014, X, 282 p. 89 illus., 64 illus. in color., Hardcover

ISBN: 978-3-319-04911-3