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An Efficient Computational Method for Calculating Properties of Face-centered Cubic High Entropy Alloys Quantum-Mechanical Ab-initio Calculation of the Properties of Crystalline Materials Calculation of the Properties of Vacancies and Interstitials Calculating Property Relations Calculations and Simulations of Low-Dimensional Materials Numerical Procedures for Calculating Real Fluid Properties of Normal and Parahydrogen Dosedanje izkušnje varstva ustavnosti v Sloveniji in vprašanja njegove izpopolnitve A Monte Carlo Calculation of the Fermi Age and Other Properties of the Slowing Down Distribution Equations for Calculating the Thermodynamic Properties of Fluids, Including Those in the Two-phase Region, from an Empirical Equation of State Guide to Programs for Calculating the Thermodynamic Properties of Air (version 3.0) Calculation of the Properties of Vacancies and Interstitials Rules and Methods for Calculating the Physico-chemical Properties of Paraffinic Hydrocarbons Thermodynamic Properties of Cryogenic Fluids International Steam Tables - Properties of Water and Steam based on the Industrial Formulation IAPWS-IF97 Electrolytes, Properties of Solutions Thermodynamic Properties of Individual Substances: Calculation of the thermodynamic properties Methods for Calculating Thermodynamic and Optical Properties of Air Program Calculation Properties of Contiuous Algebras International Steam Tables Coefficients for Calculating Thermodynamic and Transport Properties of Individual Species WETAIR: A Computer Code for Calculating Thermodynamic and Transport Properties of Air-water Mixtures A Method of Calculating Ground-state Properties of Many Particle Systems Using Reduced Density Matrices Deriving Allowable Properties of Lumber Formulations and Iterative Procedures for the Calculation of Properties of Steam AB Initio Calculation of the Structures and Properties of Molecules The Calculation of the Thermodynamic Properties of Propane, Propylene, N-butane, and Ethylene Amazing Properties of Squares & Their Calculations Quantum Monte Carlo Calculation of the Properties of Atomic Carbon and Diamond Quantum-Statistical Models of Hot Dense Matter Calculated Electronic Properties of Metals An Equation of State for Fluid Ethylene Steam, Water, and Hydrothermal Systems Calculation of the Properties of Vacancies and Interstitials Calculation of the Thermodynamic Properties of a Nitrogen-oxygen-argon Gas Mixture Energy Production and Management in the 21st Century Journal of Research of the National Bureau of Standards Improved Procedures for Calculating the Mechanical Properties of Textile Structures Composing Software Components WETAIR-a computer code for calculating thermodynamic and transport properties of air-water mixtures First-principles Calculations in Real-space Formalism

**Quantum-Statistical Models of Hot Dense Matter** Sep 25 2020 This book studies the widely used theoretical models for calculating properties of hot dense matter. Calculations are illustrated by plots and tables, and they are compared with experimental results. The purpose is to help understanding of atomic physics in hot plasma and to aid in developing efficient and robust computer codes for calculating opacity and equations of state for arbitrary material in a wide range of temperatures and densities.

*A Method of Calculating Ground-state Properties of Many Particle Systems Using*

*Reduced Density Matrices* May 02 2021 This work has been selected by scholars as being culturally important, and is part of the knowledge base of civilization as we know it. This work is in the "public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant.

Coefficients for Calculating Thermodynamic and Transport Properties of Individual Species Jul 04 2021

**Quantum Monte Carlo Calculation of the Properties of Atomic Carbon and Diamond** Oct 27 2020 A new method of calculating total energies of solids using non-local pseudopotentials in conjunction with the variational quantum Monte Carlo approach is presented. By using pseudopotentials, the large fluctuations of the energies in the core region of the atoms which occur in quantum Monte Carlo all-electron schemes are avoided. The method is applied to calculate the cohesive energy and structural properties of diamond and the first ionization energy and electron affinity of the carbon atom. Results are in excellent agreement with experiment. 8 refs., 1 fig., 2 tabs.

*Steam, Water, and Hydrothermal Systems* Jun 22 2020 This work includes 140 papers on pure and applied research of physics and chemistry of hydrothermal systems. It includes papers on metastable states, nucleation, super-cooled water and high temperature aqueous solutions.

Guide to Programs for Calculating the Thermodynamic Properties of Air (version 3.0) May 14 2022 "A new computer software package based on new interim thermodynamic property formulation has been written in standard FORTRAN 77 to calculate the thermodynamic properties of air. This report documents the software package and provides information necessary to incorporate individual subprograms from the package into design and analysis applications which require thermodynamic properties of air. Although this software package was originally developed on IBM compatable micro-computers, and the interactive utility program provided with the package is tailored to such an environment, the property calculation subprograms have been written to facilitate portability between the microcomputer and mainframe."--Leaf i.

*Program Calculation Properties of Contiuous Algebras* Sep 06 2021

*Calculation of the Thermodynamic Properties of a Nitrogen-oxygen-argon Gas Mixture* Apr 20 2020

**Calculations and Simulations of Low-Dimensional Materials** Oct 19 2022 Calculations and Simulations of Low-Dimensional Materials A comprehensive guide to methods for calculating and simulating the properties of low-dimensional materials Two-dimensional materials are those, such as graphene and 2D oxides, whose thickness is so small as to approach the atomic scale. Potential applications for these materials exist in an enormous range of scientific and industrial fields. A previous era of low-dimensional materials focused on direct experimentation to demonstrate the properties, reactions, and potential applications of these materials; however, in recent years, calculation and simulation have been shown to have considerable predictive power, reducing the period between design and deployment of these potentially critical materials. Calculations and Simulations of Low-Dimensional Materials offers the first comprehensive survey of this exciting new approach to low-dimensional materials. It guides readers through the foundational physics and through a range of calculation and simulation methods, each with different predictive capacities. Mastery of these methods will enable readers to narrowly tailor the properties of particular materials towards real-world applications, providing confidence in the underlying mechanics and in the range of possible outcomes.

Calculations and Simulations of Low-Dimensional Materials readers will also find: Broad coverage of material properties, including electronic, spin, magnetic, photonic, optical, electrochemical and transport properties Discussion of potential applications in areas such as electronics, spintronics, and valleytronics Examination of further potential applications regarding quantum Hall phase, photonics, optoelectronics, multiferroic, and photocatalysis Calculations and Simulations of Low-Dimensional Materials is a useful reference for materials scientists, electrochemists, inorganic chemists, physical chemists, photochemists, and the libraries that support these professions.

*Journal of Research of the National Bureau of Standards* Feb 17 2020

**Numerical Procedures for Calculating Real Fluid Properties of Normal and Parahydrogen** Sep 18 2022

*Rules and Methods for Calculating the Physico-chemical Properties of Paraffinic Hydrocarbons* Mar 12 2022

**Electrolytes, Properties of Solutions** Dec 09 2021 This book is a continuation of a number of the author's works dealing with the study, representation, and methods of calculation of the physicochemical properties of binary and multicomponent electrolyte solutions. It gives data for a great number of electrolytes that are used in modern chemical technology, and is intended for scientific workers and engineers in the chemical and allied industries. Methods for calculating the thermal conductivity and surface tension of multicomponent electrolyte solutions with minimum errors are presented. Related equations for calculating the thermal conductivity of water at the saturation line in the temperature range of zero to 350 degrees C, the activity of water, and the water vapor pressure over pure water in the same temperature range, and over a solution at the saturation line are also considered.

**International Steam Tables** Aug 05 2021 This book contains steam tables for practical industrial use calculated by using the international standard IAPWS-IF97 for the thermodynamic properties of water and steam and the IAPWS industrial standards for transport and other properties. The complete set of equations of IAPWS-IF97 is presented including all supplementary backward equations adopted by IAPWS for fast calculations of heat cycles, boilers, and steam turbines. The calculation of the properties is not only shown for the usual input parameter pairs pressure and temperature, but also for the parameters pressure and enthalpy, pressure and entropy, enthalpy and entropy. It is for the first time that such a description is given. For designing advanced energy conversion processes, tables and property calculation algorithms of steam up to 2000 °C are given. In addition, these steam tables contain the following features: • Formulas to calculate arbitrary partial derivatives of the eight most important properties from IAPWS-IF97, which are very helpful in non-stationary process modelling, are shown. • The uncertainty values of IAPWS-IF97 regarding the most important properties are included. • Pressure-temperature diagrams with isolines of 26 thermodynamic, transport and other properties are added.

**WETAIR: A Computer Code for Calculating Thermodynamic and Transport Properties of Air-water Mixtures** Jun 03 2021

**Calculation of the Properties of Vacancies and Interstitials** Apr 13 2022

**Calculation of the Properties of Vacancies and Interstitials** May 22 2020 Excerpt from Calculation of the Properties of Vacancies and Interstitials: Proceedings of a Conference, Shenandoah National Park, Va., May 1-5, 1966 The Institute for Materials Research of the National Bureau of Standards has as a major responsibility the task of ensuring that basic, urgently needed data on the properties of materials are available to meet the requirements of the Na tions' scientists and engineers. Data in this sense is a rather broad term. Not only does it imply experimentally measured numbers, but it also includes theoretical data, such as the calculated properties of point defects in crystals, which formed the subject of this Conference. In an immediate sense, this responsibility is met

in part through measurements done in Institute laboratories, in part through compilation and publication of critically evaluated data gathered from the literature. It is also necessary for the Institute to take a long-range view, to look further ahead, and to try to help in stimulating-fields from which data of the future will come. The Conference on the Calculation of the Properties of Vacancies and Interstitials was part of that long-range effort. The field is a rapidly growing one, containing diverse elements, related to each other in subject and often in method, but being pursued to some extent independently. No conference bringing together these diverse elements had previously been held on this topic. Thus it appeared that the present Conference could perform an important function in providing an opportunity for a critical examination of the whole field, and a forum for interchange of ideas and discussion of problems at a most opportune time for such an interchange. The Institute presents these Proceedings of the Conference in order to make the results available to a wider audience. The Institute would like to express appreciation to the participants, whose time, energy, and thought are embodied in these Proceedings, and to the Advanced Research Projects Agency, whose sponsorship made the Conference possible. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

A Monte Carlo Calculation of the Fermi Age and Other Properties of the Slowing Down Distribution Jul 16 2022 A program was developed for the ORACLE which computes the second moment of the slowing down distribution of neutrons in a mixture of elements. The program allows mixtures of up to eight elements, four of which have scattering, absorption, and transport cross sections, and four which have only absorption cross sections. Provision is made to calculate other properties of the slowing down system, such as the average diffusion coefficient, the resonance escape probability, and the squared first and last flight mean free paths.

**Energy Production and Management in the 21st Century** Mar 20 2020 Discussing the future of energy production and management in a changing world, this book contains the proceedings of the first international conference on Energy Production and Management in the 21st Century – The Quest for Sustainable Energy. Developed societies require an ever increasing amount of energy resources, which creates complex technological challenges. The idea is to compare conventional energy sources, particularly hydrocarbons, with a number of other ways of producing energy, emphasising new technological developments. The challenge in many cases is the conversion of new sources of energy into useful forms, while finding efficient ways of storing and distributing energy. Energy policies and management are of primary importance to achieving sustainability, and need to be consistent with recent advances made in energy production and distribution. The book will also discuss the energy use of industrial processes, including the imbedded energy contents of materials, particularly those in the built environment. Energy production, distribution and usage, result in environmental risks which need to be better understood. They are part of the energy economics and relate to human environmental health as well as ecosystems behaviour. Topics covered include: Energy production; Energy management; Energy policies; Energy and economic growth; Energy efficiency; Hydropower; Wind energy; Solar energy; Nuclear energy; Biomass and biofuels; Energy storage; Hydrocarbons; Gas production; Processing of oil and gas; Energy conversion; Energy savings; Energy in the

built environment; Energy networks; Pipelines; Energy balance; Energy economics; Heat, pumping systems; Environmental risk; Safety management; Emissions; C-O2 separation and storage; Imbedded energy; Energy and transport; Energy use in industry; Energy transmission and distribution; Energy industry efficiency; Energy security; Training in energy and sustainability.

**Improved Procedures for Calculating the Mechanical Properties of Textile Structures** Jan 18 2020

*Quantum-Mechanical Ab-initio Calculation of the Properties of Crystalline Materials* Jan 22 2023 A number of general-purpose, reasonably accurate and well-tested ab-initio codes for crystals are discussed in this book. The aim is to expand competence of their application in material sciences and solid-state physics. The book addresses particularly readers with a general knowledge in quantum chemistry and intends to give a deeper insight into the special algorithms and computational techniques in ab-initio computer codes for crystals. Three different programs which are available to all interested potential users on request are presented.

**Methods for Calculating Thermodynamic and Optical Properties of Air** Oct 07 2021

*Thermodynamic Properties of Individual Substances: Calculation of the thermodynamic properties* Nov 08 2021

**The Calculation of the Thermodynamic Properties of Propane, Propylene, N-butane, and Ethylene** Dec 29 2020

*WETAIR- a computer code for calculating thermodynamic and transport properties of air-water mixtures* Nov 15 2019

*Dosedanje izkušnje varstva ustavnosti v Sloveniji in vprašanja njegove izpopolnitve* Aug 17 2022

**Deriving Allowable Properties of Lumber** Apr 01 2021

**AB Initio Calculation of the Structures and Properties of Molecules** Jan 30 2021 This book is intended as a guide to the ab initio calculation of molecular structure and properties. It provides the necessary working information to enable the non-specialist to use and understand electronic structure methods and related computing technology, despite the high level of sophistication of quantum chemical methods. The initial chapters define and outline theoretical concepts, methods and computational approaches. Descriptive information and definitions of the terminology are given first; more detailed and mathematical explanations follow. These first chapters thus provide the background information needed to use the extensive literature of ab initio electronic structure theory. The next chapter first provides an overview of the technical issues relating to molecular properties, and then gives a rather detailed but general development. The latter part of this chapter is mainly intended for those first encountering the methodologies of properties determination and intending to pursue further developments. The other chapters provide reviews of calculations in the literature and assessments of factors influencing accuracy. The book is particularly useful to those who need a working understanding of ab initio calculations and well-suited to graduate students and researchers in computational and theoretical chemistry, researchers in electronic structure, spectroscopists and organic chemists.

**Equations for Calculating the Thermodynamic Properties of Fluids, Including Those in the Two-phase Region, from an Empirical Equation of State** Jun 15 2022

An Efficient Computational Method for Calculating Properties of Face-centered Cubic High Entropy Alloys Feb 23 2023

*Calculation of the Properties of Vacancies and Interstitials* Dec 21 2022

Composing Software Components Dec 17 2019 Software components and component-based software development (CBSD) are acknowledged as the best approach for constructing quality software at reasonable cost. Composing Software Components: A Software-testing Perspective describes a 10-year investigation into the underlying principles of CBSD. By restricting attention to the simplest cases, startling results are obtained: • Components are tested using only executable code. Their behavior is recorded and presented graphically. • Functional and non-functional behavior of systems

synthesized from components are calculated from component tests alone. No access to components themselves is required. • Fast, accurate tools support every aspect of CBSD from design through debugging. Case studies of CBSD also illuminate software testing in general, particularly an expanded role for unit testing and the treatment of non-functional software properties. This unique book: • Contains more than a dozen case studies of fully worked-out component synthesis, with revealing insights into fundamental testing issues. • Presents an original, fundamental theory of component composition that includes persistent state and concurrency, based on functional software testing rather than proof-of-programs. • Comes with free supporting software with tutorial examples and data for replication of examples. The Perl software has been tested on Linux, Macintosh, and Windows platforms. Full documentation is provided. • Includes anecdotes and insights from the author's 50-year career in computing as systems programmer, manager, researcher, and teacher. Composing Software Components: A Software-testing Perspective will help software researchers and practitioners to understand the underlying principles of component testing. Advanced students in computer science, engineering, and mathematics can also benefit from the book as a supplemental text and reference.

**Amazing Properties of Squares & Their Calculations** Nov 27 2020 Amazing Properties of Squares & Their Calculations is a humble endeavor of the author to write a book on speed arithmetic. The book contains some of the very exciting facts about squares of natural numbers. This book illustrates some special types of numbers and calculation of their squares. The author also attempts to explain and illustrate the general concepts on square calculation. This book is the Bible on calculation of squares and properties of squares. Each chapter is independent of each other. Hence, no particular reading order is recommended for this book. Some of the chapters are very useful in preparing for competitive exams. Book assumes no other prior mathematical background to grasp the concepts explained in this book. The only pre-requisite to read this book is to have prior knowledge about tables of 1 to 10 numbers and squares of 1 to 25 numbers. Following are the salient features of this book...- This book contains originality. It means in most chapters things are discussed, which we will not find in any other book on speed arithmetic. Even if particular concept is found in some book or website, author has represented it in a little different way.- It is useful for competitive exam- Author has given enough examples on each type of square calculation of a number (minimum 3 examples) so that reader will not have any doubt.- Almost all the chapters are having different style from traditional learning maths taught in school or college or in books.- Each chapter has been discussed separately without any prior knowledge of previous chapters so that reader can read any chapter independently and can move in any order in reading this book.- The approach used in this book is on calculation of last two digits of a square which is different from other approaches.This book will develop high interest levels in people who have do not have passion for mathematics can develop liking for math not only in calculation of squares but also in other areas like multiplication and division.- Till now methods like casting out 9's and casting out 11's were used in checking calculation , but in this book in chapter 17 and 18 these two methods are used to calculate square of two and three digit numbers respectively which is a very new thing.- Examples are explained step by step and are plenty in number and any student above seventh standard can understand it. Also topics range from elementary to medium level.- All the methods to calculate square of a number that are present in other books are discussed here in addition to some new methods. Following are the methods discussed in this book to calculate square of a general number.Chapter 6, Algebraic Identity (a+b)2 square calculationChapter 7, Square calculation using a2 = b2 + (a+b)*(a-b) formulaChapter 8, Vedic Mathematic Method Chapter 9

and 10, Two digit numbers method generalization for 3 and 4 digit numbers.Chapter 13, Square of a no. near to power/multiple/sub-multiple of power of 10 Chapter 14, Vedic Mathmetic's 'Urdhva Tiryak' method Chapter 15, Ratio Method uses ratio of two successive digitsChapter 16, Vinculum calculation method, often used to calculate big digits are bigChapter 17, Square of two digit number using casting out 9's methodChapter 18, Square of three digit number using casting out 9's and casting out 11's method- Theory behind every concept is explained which will help keen maths students proud. Superficial readers can use last result given in theory.- Various square calculation methods for number like 97 using (a+b)2 formula, Vedic maths method (100-x)2 = 100-2*x | x2, method to calculate square of a number near to power of 10, Vedic 'Urdhva Tiryak' method, Ratio method, Vinculum method, and Casting out 9's. You would learn different methods to calculate any square.- Chapters 11 and 12 are fun to read as specific digit or specific number repeated any no. of times can be squared using arithmetic progression method

**Thermodynamic Properties of Cryogenic Fluids** Feb 11 2022 This update to a classic reference text provides practising engineers and scientists with accurate thermophysical property data for cryogenic fluids. The equations for fifteen important cryogenic fluids are presented in a basic format, accompanied by pressure-enthalpy and temperature-entropy charts and tables of thermodynamic properties. It begins with a chapter introducing the thermodynamic relations and functional forms for equations of state, and goes on to describe the requirements for thermodynamic property formulations, needed for the complete definition of the thermodynamic properties of a fluid. The core of the book comprises extensive data tables and charts for the most commonly-encountered cryogenic fluids. This new edition sees significant updates to the data presented for air, argon, carbon monoxide, deuterium, ethane, helium, hydrogen, krypton, nitrogen and xenon. The book supports and complements NIST’s REFPROP - an interactive database and tool for the calculation of thermodynamic properties of cryogenic fluids.

**First-principles Calculations in Real-space Formalism** Oct 15 2019 With cutting-edge materials and minute electronic devices being produced by the latest nanoscale fabrication technology, it is essential for scientists and engineers to rely on first-principles (ab initio) calculation methods to fully understand the electronic configurations and transport properties of nanostructures. It is now imperative to introduce practical and tractable calculation methods that accurately describe the physics in nanostructures suspended between electrodes.This timely volume addresses novel methods for calculating electronic transport properties using real-space formalisms free from geometrical restrictions. The book comprises two parts: The first details the basic formalism of the real-space finite-difference method and its applications. This provides the theoretical foundation for the second part of the book, which presents the methods for calculating the properties of electronic transport through nanostructures sandwiched by semi-infinite electrodes.

**An Equation of State for Fluid Ethylene** Jul 24 2020

**Calculated Electronic Properties of Metals** Aug 25 2020 Calculated Electronic Properties of Metals covers the significant advances in understanding of condensed systems containing many atoms. This book is divided into five chapters that specifically present electronic property calculations based on three fundamental approximations, namely, the local density treatment of electronic exchange and correlation, the "muffin-tin" approximation, and the neglect of relativistic effects. These approximations limit the range of systems for which these calculations can be expected to be accurate to metals comprised of atoms possessing fewer that approximately 50 protons. A chapter focuses on the calculation of electron and state densities of numerous metals. The concluding chapter describes the results of spin-polarized energy-band calculations for iron, cobalt, and nickel. This book will prove useful to chemists, researchers,

and students.

**International Steam Tables - Properties of Water and Steam based on the Industrial Formulation IAPWS-IF97** Jan 10 2022 These steam tables have been calculated using the international standard for the thermodynamic properties of water and steam, the IAPWS-IF97 formulation, and the international standards for transport and other properties. In addition, the complete set of equations of IAPWS-IF97 is presented including all supplementary backward equations adopted by IAPWS between 2001 and 2005 for fast calculations of heat cycles, boilers, and steam turbines.

Formulations and Iterative Procedures for the Calculation of Properties of Steam Feb 28 2021

**Calculating Property Relations** Nov 20 2022 CHAPTER 9 Property, Calculation, and Industrial Space -- APPENDIX: Wartime Factory Expansion -- Notes -- Manuscript Sources -- Index -- A -- B -- C -- D -- E -- F -- G -- H -- I -- J -- K -- L -- M -- N -- O -- P -- Q -- R -- S -- T -- U -- V -- W -- Y -- Z

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