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AN ESSENTIAL CROSS DISCIPLINARY REFERENCE FOR MOLECULAR INTERACTIONS MOLECULAR THEORY OF GASES AND LIQUIDS OFFERS A RIGOROUS COMPREHENSIVE TREATMENT OF MOLECULAR CHARACTERISTICS AND BEHAVIORS IN THE GASEOUS AND FLUID STATES A UNIQUE CROSS DISCIPLINARY APPROACH PROVIDES USEFUL INSIGHT FOR STUDENTS OF CHEMISTRY CHEMICAL ENGINEERING FLUID DYNAMICS AND A VARIETY OF RELATED FIELDS WITH THOROUGH DERIVATIONS AND IN DEPTH EXPLANATIONS THROUGHOUT APPROPRIATE FOR GRADUATE STUDENTS AND WORKING SCIENTISTS ALIKE THIS BOOK DETAILS ADVANCED CONCEPTS WITHOUT SACRIFICING DEPTH OF COVERAGE OR TECHNICAL DETAIL A PIONEERING TEXT IN ITS FIELD THIS COMPREHENSIVE STUDY IS ONE OF THE MOST VALUABLE TEXTS AND REFERENCES AVAILABLE THE AUTHOR EXPLORES THE CLASSICAL KINETIC THEORY IN THE FIRST FOUR CHAPTERS WITH DISCUSSIONS OF THE MECHANICAL PICTURE OF A PERFECT GAS THE MEAN FREE PATH AND THE DISTRIBUTION OF MOLECULAR VELOCITIES TBHE FIFTH CHAPTER DEALS WITH THE MORE ACCURATE EQUATIONS OF STATE OR VAN DER WAALS EQUATION AND LATER CHAPTERS EXAMINE VISCOSITY HEAT CONDUCTION SURFACE PHENOMENA AND BROWNINAN MOVEMENTS THE TEXT SURVEYS THE APPLICATION OF QUANTUM THEORY TO THE PROBLEM OF SPECIFIC HEATS AND THE CONTRIBUTIONS OF KINETIC THEORY TO KNOWLEDGE OF ELECTRICAL AND MAGNETIC PROPERTIES OF MOLECULES CONCLUDING WITH APPLICATIONS OF THE KINETIC THEORY TO THE CONDUCTION OF ELECTRICITY IN GASES 1934 EDITION THIS BOOK CAN BE DESCRIBED AS A STUDENT S EDITION OF THE AUTHOR S DYNAMICAL THEORY OF GASES IT IS WRITTEN HOWEVER WITH THE NEEDS OF THE STUDENT OF PHYSICS AND PHYSICAL CHEMISTRY IN MIND AND THOSE PARTS OF WHICH THE INTEREST WAS MAINLY MATHEMATICAL HAVE BEEN DISCARDED THIS DOES NOT MEAN THAT THE BOOK CONTAINS NO SERIOUS MATHEMATICAL DISCUSSION THE DISCUSSION IN PARTICULAR OF THE DISTRIBUTION LAW IS QUITE DETAILED BUT IN THE MAIN THE MATHEMATICS IS CONCERNED WITH THE DISCUSSION OF PARTICULAR PHENOMENA RATHER THAN WITH THE DISCUSSION OF FUNDAMENTALS THIS INTRODUCTION TO THE MOLECULAR THEORY OF 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ARISES THAT SUCH A DOUBLE MOLECULE SPLITS UP AGAIN INTO ITS CONSTITUENTS EITHER AS A RESULT OF COLLISION WITH ANOTHER MOLECULE OR SIMPLY IN CONSEQUENCE OF AN INCREASE OF SPEED WHICH NOT ONLY BREAKS UP THE WHOLE MOLECULE BUT ALSO PARTLY TEARS APART THE ATOMS BOUND UP IN IT HENCE IT HAPPENS THAT A VAPOUR IS ALWAYS A MIXTURE OF LARGE AND SMALL MOLECULES THE RATIO IN WHICH THE SIMPLE AND COMPOUND MOLECULES ARE MIXED TOGETHER DIFFERS WITH THE TEMPERATURE FOR AN INCREASE OF SPEED AS BROUGHT ABOUT BY A RISE OF TEMPERATURE INCREASES THE PROBABILITY OF THE DIVISION OF THE LARGER MASSES THE NUMBER OF SIMPLE MOLECULES THEREFORE INCREASES WHEN THE TEMPERATURE RISES AND THAT OF THE COMPOUND MOLECULES WHEN THE TEMPERATURE FALLS UNTIL FINALLY AT A DEFINITE TEMPERATURE ALL ARE BROKEN UP AND THE PERFECTLY GASEOUS STATE IS ATTAINED AT LOWER TEMPERATURES ON THE CONTRARY THE NUMBER OF THE COMPOUND MOLECULES IS IN EXCESS THIS BEHAVIOUR OF THE MOLECULES EXPLAINS AS BEFORE REMARKED THE THIS BOOK INTRODUCES PHYSICS STUDENTS AND TEACHERS TO THE HISTORICAL DEVELOPMENT OF THE KINETIC THEORY OF GASES BY PROVIDING A COLLECTION OF THE MOST IMPORTANT CONTRIBUTIONS BY CLAUSIUS MAXWELL AND BOLTZMANN WITH INTRODUCTORY SURVEYS EXPLAINING THEIR SIGNIFICANCE IN ADDITION EXTRACTS FROM THE WORKS OF BOYLE NEWTON MAYER JOULE HELMHOLTZ KELVIN AND OTHERS SHOW THE HISTORICAL CONTEXT OF IDEAS ABOUT GASES ENERGY AND IRREVERSIBILITY IN ADDITION TO FIVE THEMATIC ESSAYS CONNECTING THE CLASSICAL KINETIC THEORY WITH 20TH CENTURY TOPICS SUCH AS INDETERMINISM AND INTERATOMIC FORCES THERE IS AN EXTENSIVE INTERNATIONAL BIBLIOGRAPHY OF HISTORICAL COMMENTARIES ON KINETIC THEORY THERMODYNAMICS ETC PUBLISHED IN THE PAST FOUR DECADES THE BOOK WILL BE USEFUL TO HISTORIANS OF SCIENCE WHO NEED PRIMARY AND SECONDARY SOURCES TO BE CONVENIENTLY AVAILABLE FOR THEIR OWN RESEARCH AND INTERPRETATION ALONG WITH THE BIBLIOGRAPHY WHICH MAKES IT EASIER TO LEARN WHAT OTHER HISTORIANS HAVE ALREADY DONE ON THIS SUBJECT CONTENTS THE NATURE OF GASES AND OF HEAT BOYLE NEWTON BERNOULLI GREGORY MAYER JOULE VON HELMHOLTZ CLAUSIUS MAXWELL IRREVERSIBLE PROCESSES MAXWELL BOLTZMANN THOMSON POINCAR⍰ ZERMELO HISTORICAL DISCUSSIONS BY STEPHEN G BRUSHA GUIDE TO HISTORICAL COMMENTARIES KINETIC THEORY OF GASES THERMODYNAMICS AND RELATED TOPICS READERSHIP GRADUATE AND RESEARCH STUDENTS TEACHERS LECTURERS AND HISTORIANS OF PHYSICS KEYWORDS KINETIC THEORY GASES BOYLE S LAW GAS LAWS VISCOSITY DIFFUSION FORCES BETWEEN ATOMS AND MOLECULES INTERATOMIC FORCES ERGODIC THEOREM ERGODICITY HEAT CONDUCTION IRREVERSIBILITY INDETERMINISM THERMODYNAMICS FIRST LAW OF THERMODYNAMICS SECOND LAW OF THERMODYNAMICS THIRD LAW OF THERMODYNAMICS LAW OF CONSERVATION OF ENERGY MAXWELL VELOCITY DISTRIBUTION BOLTZMANN S H THEOREM BOLTZMANN S TRANSPORT EQUATION REVERSIBILITY PARADOX RECURRENCE PARADOX STATISTICAL MECHANICSREVIEWS ONE OF THE MOST IMPORTANT CONTRIBUTIONS OF THIS VOLUME IS THE BIBLIOGRAPHY IN PART IV THIS IS A USEFUL BOOK AND SHOULD BE ON THE SHELVES OF ALL KINETIC THEORISTS AND STATISTICAL MECHANICS JOURNAL OF STATISTICAL PHYSICS THIS BOOK WILL BE USEFUL BOTH FOR HISTORICAL RESEARCH AND FOR STUDENTS STUDYING THE HISTORY OF PHYSICS NOTES AND RECORDS OF THE ROYAL SOCIETY IT IS VALUABLE TO HAVE THE WORK IN PRINT AGAIN SINCE SOME OF THE ORIGINALS ARE NOT ALWAYS EASILY ACCESSIBLE AND ALL WHO HAVE STRUGGLED FOR EXAMPLE WITH BOLTZMANN S GERMAN WILL WELCOME ACCURATE TRANSLATIONS THE WHOLE BOOK IS TO BE WELCOMED AS AN AID TO THOSE UNDERTAKING RESEARCH OR OTHERWISE INTERESTED IN EXPLORING THESE FIELDS AMBIX THIS SELF CONTAINED BOOK IS AN UP TO DATE DESCRIPTION OF THE BASIC THEORY OF MOLECULAR GAS DYNAMICS AND ITS VARIOUS APPLICATIONS THE BOOK UNIQUE IN THE LITERATURE PRESENTS WORKING KNOWLEDGE THEORY TECHNIQUES AND TYPICAL PHENOMENA IN RAREFIED GASES FOR THEORETICAL DEVELOPMENT AND APPLICATION BASIC THEORY IS DEVELOPED IN A SYSTEMATIC WAY AND PRESENTED IN A FORM EASILY APPLIED FOR PRACTICAL USE IN THIS WORK THE GHOST EFFECT AND NON NAVIER STOKES EFFECTS ARE DEMONSTRATED FOR TYPICAL EXAMPLES B⍰NARD AND TAYLOR COUETTE PROBLEMS IN THE CONTEXT OF A NEW FRAMEWORK A NEW TYPE OF GHOST EFFECT IS ALSO DISCUSSED THIS WORK HAS BEEN SELECTED BY

THIS CLASSIC BOOK NOW REISSUED IN PAPERBACK PRESENTS A DETAILED ACCOUNT OF THE MATHEMATICAL THEORY OF VISCOSITY THERMAL CONDUCTION AND DIFFUSION IN NON UNIFORM GASES BASED ON THE SOLUTION OF THE MAXWELL BOLTZMANN EQUATIONS THE THEORY OF CHAPMAN AND ENSKOG DESCRIBING WORK ON DENSE GASES QUANTUM THEORY OF COLLISIONS AND THE THEORY OF CONDUCTION AND DIFFUSION IN IONIZED GASES IN THE PRESENCE OF ELECTRIC AND MAGNETIC FIELDS IS ALSO INCLUDED IN THE LATER CHAPTERS THIS REPRINT OF THE THIRD EDITION FIRST PUBLISHED IN 1970 INCLUDES REVISIONS THAT TAKE ACCOUNT OF EXTENSIONS OF THE THEORY TO FRESH MOLECULAR MODELS AND OF NEW METHODS USED IN DISCUSSING DENSE GASES AND PLASMAS DYNAMICS OF GAS SURFACE SCATTERING DEALS WITH THE DYNAMICS OF SCATTERING AS INFERRED FROM KNOWN PROPERTIES OF GASES AND SOLIDS THIS BOOK DISCUSSES MEASUREMENTS OF SPATIAL DISTRIBUTIONS OF SCATTERED ATOMIC AND MOLECULAR STREAMS AND OF THE ENERGY AND MOMENTUM WHICH GAS PARTICLES EXCHANGE AT SOLID SURFACES IT ALSO CONSIDERS TWO REGIMES OF SCATTERING BOTH OF WHICH ARE ASSOCIATED WITH A LOWER RANGE OF INCIDENT GAS ENERGIES THE THERMAL AND STRUCTURE SCATTERING REGIMES COMPRISED OF 10 CHAPTERS THIS BOOK OPENS WITH A BRIEF HISTORICAL OVERVIEW OF THE EARLY EXPERIMENTS THAT INVESTIGATED THE DYNAMICS OF SCATTERING OF GASES BY SURFACES THE DISCUSSION THEN TURNS TO SOME ELEMENTS OF THE KINETIC THEORY OF GASES INTERMODULAR POTENTIALS AND INTERACTION REGIMES AND CLASSICAL MECHANICAL LATTICE MODELS USED IN GAS SURFACE SCATTERING THEORY THE APPLICATIONS OF MOLECULAR BEAMS TO THE STUDY OF GAS SURFACE SCATTERING PHENOMENA ARE ALSO DESCRIBED THE REMAINING CHAPTERS FOCUS ON EXPERIMENTS AND THEORIES ON SCATTERING OF MOLECULAR STREAMS BY SURFACES OF SOLIDS WITH EMPHASIS ON THERMAL AND STRUCTURE REGIMES OF INELASTIC SCATTERING QUANTUM THEORY OF GAS SURFACE SCATTERING AND QUANTUM MECHANICAL SCATTERING PHENOMENA THIS TEXT CONCLUDES WITH AN ANALYSIS OF ENERGY EXCHANGE PROCESSES THAT MAY OCCUR WHEN A SOLID SURFACE IS COMPLETELY IMMERSED IN A STILL GAS THIS MONOGRAPH WILL BE A VALUABLE RESOURCE FOR STUDENTS AND PRACTITIONERS OF PHYSICS CHEMISTRY AND APPLIED MATHEMATICS FROM THE PREFACE THE PAPERS HERE REPRINTED IN CHRONOLOGICAL ORDER SERVE TO EXHIBIT THE HISTORICAL DEVELOPMENT OF THE IDEA OF A CONNECTION EXISTING BETWEEN THE NUMBER OF PARTICLES IN DIFFERENT GASES AND THE VOLUME THEY OCCUPY IT WILL BE SEEN THAT DALTON FROM THE FIRST ENTERTAINS THE NOTION THAT EQUAL VOLUMES OF DIFFERENT GASES MAY CONTAIN THE SAME NUMBER OF ULTIMATE PARTICLES AT EQUAL TEMPERATURE AND PRESSURE BUT THAT HE IS LEGITIMATELY FORCED TO REJECT THIS ASSUMPTION CONCEIVING NO DISTINCTION BETWEEN THE ATOM AND THE MOLECULE OF AN ELEMENT GAY LUSSAC S IMPORTANT EXPERIMENTAL WORK ON THE COMBINING VOLUMES OF GASES THEN SHOWS THE NECESSITY OF A SIMPLE RELATION BETWEEN THE ULTIMATE PARTICLES OF GASES AND THEIR VOLUMES ALTHOUGH HE DOES NOT POINT THIS OUT IN HIS PAPER DALTON HOWEVER PERCEIVES THE NECESSITY AND CHARACTERISTICALLY CONCLUDES BY DOUBTING THE ACCURACY OF GAY LUSSAC S EXPERIMENTS AVOGADRO FINALLY ACCEPTS BOTH DALTON S THEORY AND GAY LUSSAC S DATA AND TEACHES HOW TO RECONCILE THEM BY DISTINGUISHING BETWEEN THE ATOM AND THE MOLECULE OF AN ELEMENTARY GAS IT HAS NOT BEEN THOUGHT NECESSARY TO REPRINT THE LETTER OF AMPERE TO BERTHOLLET ANNALES DE CHIMIE 90 43 86 1814 SINCE THAT PAPER CONTAINS NO ADVANCE ON THE VIEWS OF AVOGADRO PUBLISHED THREE YEARS EARLIER ITS AUTHOR SIMPLY DRAWING THE SAME CONCLUSIONS FROM THE SAME PREMISES THE ENGLISH VERSION OF THE FRENCH ORIGINALS WILL PROBABLY BE FOUND MORE FAITHFUL THAN ELEGANT ESPECIALLY SO IN THE CASE OF AVOGADRO S PAPER WHERE THE FRENCH IS ALWAYS CLUMSY AND OCCASIONALLY OBSCURE INTRODUCES THE TRACTOR TRAILER ALLOWING THE READER TO COUNT ITS PARTS USING THE NUMBERS FROM ONE TO TEN AND ITS WHEELS USING THE NUMBERS TO EIGHTEEN THE KINETIC THEORY OF GASES AS WE KNOW IT DATES TO THE PAPER OF BOLTZMANN IN 1872 THE JUSTIFICATION AND CONTEXT OF THIS EQUATION HAS BEEN CLARIFIED OVER THE PAST HALF CENTURY TO THE EXTENT THAT IT COMPRISES ONE OF THE MOST COMPLETE EXAMPLES OF MANY BODY ANALYSES EXHIBITING THE CONTRACTION FROM A MICROSCOPIC TO A MESOSCOPIC DESCRIPTION THE PRIMARY RESULT IS THAT THE BOLTZMANN EQUATION APPLIES TO DILUTE GASES WITH SHORT RANGED INTERATOMIC FORCES ON SPACE AND TIME SCALES LARGE COMPARED TO THE CORRESPONDING ATOMIC SCALES OTHERWISE THERE IS NO A PRIORI LIMITATION ON THE STATE OF THE SYSTEM THIS MEANS IT SHOULD BE APPLICABLE EVEN TO SYSTEMS DRIVEN VERY FAR FROM ITS EQUILIBRIUM STATE HOWEVER IN SPITE OF THE PHYSICAL SIMPLICITY OF THE BOLTZMANN EQUATION ITS MATHEMATICAL COMPLEXITY HAS MASKED ITS CONTENT EXCEPT FOR STATES NEAR EQUILIBRIUM WHILE THE LATTER ARE VERY IMPORTANT AND THE BOLTZMANN EQUATION HAS BEEN A RESOUNDING SUCCESS IN THIS CASE THE FULL POTENTIAL OF THE BOLTZMANN EQUATION TO DESCRIBE MORE GENERAL NONEQUILIBRIUM STATES REMAINS UNFULFILLED AN IMPORTANT EXCEPTION WAS A STUDY BY IKENBERRY AND TRUESDELL IN 1956 FOR A GAS OF MAXWELL MOLECULES UNDERGOING SHEAR FLOW THEY PROVIDED A FORMALLY EXACT SOLUTION TO THE MOMENT HIERARCHY THAT IS VALID FOR ARBITRARILY LARGE SHEAR RATES IT WAS THE FIRST

EXAMPLE OF A FUNDAMENTAL DESCRIPTION OF RHEOLOGY FAR FROM EQUILIBRIUM ALBEIT FOR AN UNREALISTIC SYSTEM WITH RARE EXCEPTIONS SIGNIFICANT PROGRESS ON NONEQUILIBRIUM STATES WAS MADE ONLY 20 30 YEARS LATER IMPARTS THE SIMILARITIES AND DIFFERENCES BETWEEN RATIFIED AND CONDENSED MATTER CLASSICAL AND QUANTUM SYSTEMS AS WELL AS REAL AND IDEAL GASES PRESENTS THE QUASI THERMODYNAMIC THEORY OF GAS LIQUID INTERFACE AND ITS APPLICATION FOR DENSITY PROFILE CALCULATION WITHIN THE VAN DER WAALS THEORY OF SURFACE TENSION USES INDUCTIVE LOGIC TO LEAD READERS FROM OBSERVATION AND FACTS TO PERSONAL INTERPRETATION AND FROM SPECIFIC CONCLUSIONS TO GENERAL ONES

The Molecular Theory of Gases and Liquids

1964-01-15

AN ESSENTIAL CROSS DISCIPLINARY REFERENCE FOR MOLECULAR INTERACTIONS MOLECULAR THEORY OF GASES AND LIQUIDS OFFERS A RIGOROUS COMPREHENSIVE TREATMENT OF MOLECULAR CHARACTERISTICS AND BEHAVIORS IN THE GASEOUS AND FLUID STATES A UNIQUE CROSS DISCIPLINARY APPROACH PROVIDES USEFUL INSIGHT FOR STUDENTS OF CHEMISTRY CHEMICAL ENGINEERING FLUID DYNAMICS AND A VARIETY OF RELATED FIELDS WITH THOROUGH DERIVATIONS AND IN DEPTH EXPLANATIONS THROUGHOUT APPROPRIATE FOR GRADUATE STUDENTS AND WORKING SCIENTISTS ALIKE THIS BOOK DETAILS ADVANCED CONCEPTS WITHOUT SACRIFICING DEPTH OF COVERAGE OR TECHNICAL DETAIL

Thermal Properties of Matter: Kinetic theory of gases

1966

A PIONEERING TEXT IN ITS FIELD THIS COMPREHENSIVE STUDY IS ONE OF THE MOST VALUABLE TEXTS AND REFERENCES AVAILABLE THE AUTHOR EXPLORES THE CLASSICAL KINETIC THEORY IN THE FIRST FOUR CHAPTERS WITH DISCUSSIONS OF THE MECHANICAL PICTURE OF A PERFECT GAS THE MEAN FREE PATH AND THE DISTRIBUTION OF MOLECULAR VELOCITIES TBHE FIFTH CHAPTER DEALS WITH THE MORE ACCURATE EQUATIONS OF STATE OR VAN DER WAALS EQUATION AND LATER CHAPTERS EXAMINE VISCOSITY HEAT CONDUCTION SURFACE PHENOMENA AND BROWNINAN MOVEMENTS THE TEXT SURVEYS THE APPLICATION OF QUANTUM THEORY TO THE PROBLEM OF SPECIFIC HEATS AND THE CONTRIBUTIONS OF KINETIC THEORY TO KNOWLEDGE OF ELECTRICAL AND MAGNETIC PROPERTIES OF MOLECULES CONCLUDING WITH APPLICATIONS OF THE KINETIC THEORY TO THE CONDUCTION OF ELECTRICITY IN GASES 1934 EDITION

The Kinetic Theory of Gases

2004-01-01

THIS BOOK CAN BE DESCRIBED AS A STUDENT S EDITION OF THE AUTHOR S DYNAMICAL THEORY OF GASES IT IS WRITTEN HOWEVER WITH THE NEEDS OF THE STUDENT OF PHYSICS AND PHYSICAL CHEMISTRY IN MIND AND THOSE PARTS OF WHICH THE INTEREST WAS MAINLY MATHEMATICAL HAVE BEEN DISCARDED THIS DOES NOT MEAN THAT THE BOOK CONTAINS NO SERIOUS MATHEMATICAL DISCUSSION THE DISCUSSION IN PARTICULAR OF THE DISTRIBUTION LAW IS QUITE DETAILED BUT IN THE MAIN THE MATHEMATICS IS CONCERNED WITH THE DISCUSSION OF PARTICULAR PHENOMENA RATHER THAN WITH THE DISCUSSION OF FUNDAMENTALS

An Introduction to the Kinetic Theory of Gases

1982-10-14

THIS INTRODUCTION TO THE MOLECULAR THEORY OF GASES AND MODERN TRANSPORT THEORY INCLUDES SUCH BASIC CONCEPTS AS DISTRIBUTION FUNCTION CLASSICAL THEORY OF SPECIFIC HEATS BINARY COLLISIONS MEAN FREE PATH AND REACTION RATES AS WELL AS TOPICS RELEVANT TO ADVANCED TRANSPORT THEORY

Gaskinetic Theory

1994-06-30

APPENDICES AFTER EACH CHAPTER

Kinetic Theory of Gases

1958

THIS MONOGRAPH AND TEXT WAS DESIGNED FOR FIRST YEAR STUDENTS OF PHYSICAL CHEMISTRY WHO REQUIRE FURTHER DETAILS OF KINETIC THEORY THE TREATMENT FOCUSES CHIEFLY ON THE MOLECULAR BASIS OF IMPORTANT THERMODYNAMIC PROPERTIES OF GASES INCLUDING PRESSURE TEMPERATURE AND THERMAL ENERGY INCLUDES NUMEROUS EXERCISES MANY PARTIALLY WORKED OUT AND END OF CHAPTER PROBLEMS 1966 EDITION

Kinetic Theory of Gases

2013-04-22

KINETIC THEORY VOLUME I THE NATURE OF GASES AND OF HEAT DEALS WITH KINETIC THEORY AND THE NATURE OF GASES AND HEAT A COMPREHENSIVE ACCOUNT OF THE LIFE WORKS AND HISTORICAL ENVIRONMENT OF A NUMBER OF SCIENTISTS SUCH AS ROBERT BOYLE AND HERMANN VON HELMHOLTZ IS PRESENTED THIS VOLUME IS COMPRISED OF 11 CHAPTERS AND BEGINS WITH AN OVERVIEW OF THE CALORIC THEORY THE PRINCIPLE OF CONSERVATION OF ENERGY THE VIRIAL THEOREM AND ATOMIC MAGNITUDES THE DISCUSSION THEN TURNS TO THE QUALITATIVE ATOMIC THEORY OF THE SPRING OF THE AIR PROPOSED BY ROBERT BOYLE ISAAC NEWTON S REPULSION THEORY DANIEL BERNOULLI S THERY ON THE PROPERTIES AND MOTIONS OF ELASTIC FLUIDS ESPECIALLY AIR AND GEORGE GREGORY S THEORY ON THE EXISTENCE OF FIRE SUBSEQUENT CHAPTERS FOCUS ON ROBERT MAYER S THEORY ON THE FORCES OF INORGANIC NATURE JAMES JOULE S THEORY ON MATTER LIVING FORCE AND HEAT HERMANN VON HELMHOLTZ S THEORY ON THE CONSERVATION OF FORCE AND RUDOLF CLAUSIUS S THEORY ON THE NATURE OF HEAT JAMES CLERK MAXWELL S DYNAMICAL THEORY OF GASES IS ALSO EXAMINED THIS BOOK IS WRITTEN PRIMARILY FOR STUDENTS AND RESEARCH WORKERS IN PHYSICS AS WELL AS FOR HISTORIANS OF SCIENCE

Molecular Theory of Gases and Liquids

2003-01

THIS HISTORIC BOOK MAY HAVE NUMEROUS TYPOS AND MISSING TEXT PURCHASERS CAN USUALLY DOWNLOAD A FREE SCANNED COPY OF THE ORIGINAL BOOK WITHOUT TYPOS FROM THE PUBLISHER NOT INDEXED NOT ILLUSTRATED 1920 EDITION EXCERPT OF GAS FROM WHICH THE MOLECULE COMES AND THUS INCREASES WITH DECREASE OF PRESSURE THE DIFFERENCE BETWEEN VA AND VC THEREFORE ALSO INCREASES WITH DECREASE OF PRESSURE WHICH INCREASES THE VALUE OF THE RATIO TJ IJI ACCORDING TO THE FOREGOING EQUATION THIS CORRESPONDS TO A DECREASE OF AND THUS THE EFFECT OF SLIPPING BECOMES THE GREATER THE LOWER THE PRESSURE THE DYNAMICAL MECHANISM UNDERLYING THE RESULT THAT THE VISCOSITY OF A GAS IS INDEPENDENT OF ITS DENSITY MAY BE GASEOUS VISCOSITY AND THE TEMPERATURE 127 ILLUSTRATED BY THE FOLLOWING CONSIDERATIONS A MOLECULE TRANSFERS A CERTAIN AMOUNT OF MOMENTUM TO THE GAS AT THE END OF EACH TRANSFER DISTANCE ON MIGRATING AT RIGHT ANGLES TO THE MOTION OF THE GAS IN THE DIRECTION OF THE DECREASE OF MOTION IF THE CONCENTRATION OF THE GAS IS HALVED THE LENGTH OF EACH TRANSFER DISTANCE IS DOUBLED WHILE THE MOMENTUM TRANSFERRED AT THE END OF EACH TRANSFER DISTANCE IS ALSO DOUBLED SINCE THE VELOCITY GRADIENT OF THE GAS REMAINS THE SAME SINCE A CHANGE IN

MOLECULAR CONCENTRATION OF A GAS DOES NOT ALTER THE MOLECULAR VELOCITIES THE MOMENTUM TRANSFERRED PER SECOND BY A MOLECULE MOVING BETWEEN TWO PARALLEL PLATES OF MATERIAL ONE OF WHICH IS AT REST WHILE THE OTHER MOVES PARALLEL TO ITSELF IS IN THE LATTER CASE DOUBLE THAT IN THE FORMER BUT SINCE THE NUMBER OF MOLECULES PER CUBIC CM AVAILABLE FOR MOMENTUM TRANSFERENCE IN THE FORMER CASE IS HALF THE NUMBER IN THE LATTER THE TOTAL MOMENTUM TRANSFERRED IS IN EACH CASE THE SAME OR THE VISCOSITY OF THE GAS HAS NOT BEEN ALTERED BY ALTERING ITS DENSITY THE QUANTITY K IS A FUNCTION OF THE TEMPERATURE THIS IS SHOWN BY THE CALCULATED VALUES OF K CONTAINED IN TABLE X FOR A NUMBER OF GASES AT DIFFERENT TEMPERATURES THESE VALUES ARE NOT CORRECTED FOR

The Kinetic Theory of Gases

1927

IN CONTRAST TO MOLECULAR GASES FOR EXAMPLE AIR THE PARTICLES OF GRANULAR GASES SUCH AS A CLOUD OF DUST LOSE PART OF THEIR KINETIC ENERGY WHEN THEY COLLIDE GIVING RISE TO MANY EXCITING PHYSICAL PROPERTIES THE BOOK PROVIDES A SELF CONTAINED INTRODUCTION TO THE THEORY OF GRANULAR GASES FOR ADVANCED UNDERGRADUATES AND BEGINNING GRADUATES

Lectures on Gas Theory

1964

THIS BOOK CONSISTS OF TWO PARTS THEORY AND APPLICATIONS PART I INTRODUCES THE KINETIC THEORY OF GASES WITH RELEVANCE TO MOLECULAR ENERGIES AND INTERMOLECULAR FORCES PART II FOCUSES ON HOW THESE THEORIES ARE USED TO EXPLAIN REAL TECHNIQUES AND PHENOMENA INVOLVING GASES BY STRESSING THE PRACTICAL IMPLICATIONS THE BOOK EXPLAINS THE THEORY OF GAS DYNAMICS IN A HIGHLY READABLE AND COMPREHENSIVE MANNER

Molecular Theory of Gases and Liquids

1950

THIS HISTORIC BOOK MAY HAVE NUMEROUS TYPOS AND MISSING TEXT PURCHASERS CAN USUALLY DOWNLOAD A FREE SCANNED COPY OF THE ORIGINAL BOOK WITHOUT TYPOS FROM THE PUBLISHER NOT INDEXED NOT ILLUSTRATED 1899 EDITION EXCERPT WITH THE TEMPERATURE 88 DISSOCIATION AMONG THE CAUSES WHICH MAKE VAPOURS DEVIATE FROM THE LAWS OF PERFECT GASES THE MOST IMPORTANT DEPENDS UPON THE DISSOCIATION WHICH THE MOLECULES UNDERGO AS WELL FROM RISE OF TEMPERATURE AS FROM DIMINUTION OF PRESSURE IN EARLIER SECTIONS OF THIS BOOK WE HAVE SEVERAL TIMES SPOKEN OF THIS DISSOCIATION ESPECIALLY IN 48 51 HAS ITS NATURE BEEN DESCRIBED AND THE INFLUENCE WHICH IT EXERTS ON THE DENSITY OF A VAPOUR IN A VAPOUR THE MOLECULES ARE NOT ALL OF THE SAME SIZE AND MASS AS IN A PERFECT GAS THE CASE OFTEN OCCURS IN CONSEQUENCE OF THE FORCES OF COHESION IN WHICH TWO MOLECULES WHICH CHANCE TO COME NEAR ENOUGH TO EACH OTHER JOIN TOGETHER TO FORM ONE MOLECULE OF DOUBLE SIZE AND JUST AS FREQUENTLY THE CASE ARISES THAT SUCH A DOUBLE MOLECULE SPLITS UP AGAIN INTO ITS CONSTITUENTS EITHER AS A RESULT OF COLLISION WITH ANOTHER MOLECULE OR SIMPLY IN CONSEQUENCE OF AN INCREASE OF SPEED WHICH NOT ONLY BREAKS UP THE WHOLE MOLECULE BUT ALSO PARTLY TEARS APART THE ATOMS BOUND UP IN IT HENCE IT HAPPENS THAT A VAPOUR IS ALWAYS A MIXTURE OF LARGE AND SMALL MOLECULES THE RATIO IN WHICH THE SIMPLE AND COMPOUND MOLECULES ARE MIXED TOGETHER DIFFERS WITH THE TEMPERATURE FOR AN INCREASE OF SPEED AS BROUGHT ABOUT BY A RISE OF TEMPERATURE INCREASES THE PROBABILITY OF THE DIVISION OF THE LARGER MASSES THE NUMBER OF SIMPLE MOLECULES THEREFORE INCREASES WHEN THE TEMPERATURE RISES AND THAT OF THE COMPOUND MOLECULES WHEN THE TEMPERATURE FALLS UNTIL FINALLY AT A DEFINITE TEMPERATURE ALL ARE BROKEN UP AND THE PERFECTLY GASEOUS STATE IS ATTAINED AT LOWER TEMPERATURES ON THE CONTRARY THE NUMBER OF THE COMPOUND MOLECULES IS IN EXCESS THIS BEHAVIOUR OF THE MOLECULES EXPLAINS AS BEFORE REMARKED THE

The Kinetic Theory of Gases

1970

THIS BOOK INTRODUCES PHYSICS STUDENTS AND TEACHERS TO THE HISTORICAL DEVELOPMENT OF THE KINETIC THEORY OF GASES BY PROVIDING A COLLECTION OF THE MOST IMPORTANT CONTRIBUTIONS BY CLAUSIUS MAXWELL AND BOLTZMANN WITH INTRODUCTORY SURVEYS EXPLAINING THEIR SIGNIFICANCE IN ADDITION EXTRACTS FROM THE WORKS OF BOYLE NEWTON MAYER JOULE HELMHOLTZ KELVIN AND OTHERS SHOW THE HISTORICAL CONTEXT OF IDEAS ABOUT GASES ENERGY AND IRREVERSIBILITY IN ADDITION TO FIVE THEMATIC ESSAYS CONNECTING THE CLASSICAL KINETIC THEORY WITH 20TH CENTURY TOPICS SUCH AS INDETERMINISM AND INTERATOMIC FORCES THERE IS AN EXTENSIVE INTERNATIONAL BIBLIOGRAPHY OF HISTORICAL COMMENTARIES ON KINETIC THEORY THERMODYNAMICS ETC PUBLISHED IN THE PAST FOUR DECADES THE BOOK WILL BE USEFUL TO HISTORIANS OF SCIENCE WHO NEED PRIMARY AND SECONDARY SOURCES TO BE CONVENIENTLY AVAILABLE FOR THEIR OWN RESEARCH AND INTERPRETATION ALONG WITH THE BIBLIOGRAPHY WHICH MAKES IT EASIER TO LEARN WHAT OTHER HISTORIANS HAVE ALREADY DONE ON THIS SUBJECT CONTENTS THE NATURE OF GASES AND OF HEAT BOYLE NEWTON BERNOULLI GREGORY MAYER JOULE VON HELMHOLTZ CLAUSIUS MAXWELL IRREVERSIBLE PROCESSES MAXWELL BOLTZMANN THOMSON POINCAR⍰ ZERMELO HISTORICAL DISCUSSIONS BY STEPHEN G BRUSHA GUIDE TO HISTORICAL COMMENTARIES KINETIC THEORY OF GASES THERMODYNAMICS AND RELATED TOPICS READERSHIP GRADUATE AND RESEARCH STUDENTS TEACHERS LECTURERS AND HISTORIANS OF PHYSICS KEYWORDS KINETIC THEORY GASES BOYLE S LAW GAS LAWS VISCOSITY DIFFUSION FORCES BETWEEN ATOMS AND MOLECULES INTERATOMIC FORCES ERGODIC THEOREM ERGODICITY HEAT CONDUCTION IRREVERSIBILITY INDETERMINISM THERMODYNAMICS FIRST LAW OF THERMODYNAMICS SECOND LAW OF THERMODYNAMICS THIRD LAW OF THERMODYNAMICS LAW OF CONSERVATION OF ENERGY MAXWELL VELOCITY DISTRIBUTION BOLTZMANN S H THEOREM BOLTZMANN S TRANSPORT EQUATION REVERSIBILITY PARADOX RECURRENCE PARADOX STATISTICAL MECHANICSREVIEWS ONE OF THE MOST IMPORTANT CONTRIBUTIONS OF THIS VOLUME IS THE BIBLIOGRAPHY IN PART IV THIS IS A USEFUL BOOK AND SHOULD BE ON THE SHELVES OF ALL KINETIC THEORISTS AND STATISTICAL MECHANICS JOURNAL OF STATISTICAL PHYSICS THIS BOOK WILL BE USEFUL BOTH FOR HISTORICAL RESEARCH AND FOR STUDENTS STUDYING THE HISTORY OF PHYSICS NOTES AND RECORDS OF THE ROYAL SOCIETY IT IS VALUABLE TO HAVE THE WORK IN PRINT AGAIN SINCE SOME OF THE ORIGINALS ARE NOT ALWAYS EASILY ACCESSIBLE AND ALL WHO HAVE STRUGGLED FOR EXAMPLE WITH BOLTZMANN S GERMAN WILL WELCOME ACCURATE TRANSLATIONS THE WHOLE BOOK IS TO BE WELCOMED AS AN AID TO THOSE UNDERTAKING RESEARCH OR OTHERWISE INTERESTED IN EXPLORING THESE FIELDS AMBIX

The Kinetic Theory of Gases

1981

THIS SELF CONTAINED BOOK IS AN UP TO DATE DESCRIPTION OF THE BASIC THEORY OF MOLECULAR GAS DYNAMICS AND ITS VARIOUS APPLICATIONS THE BOOK UNIQUE IN THE LITERATURE PRESENTS WORKING KNOWLEDGE THEORY TECHNIQUES AND TYPICAL PHENOMENA IN RAREFIED GASES FOR THEORETICAL DEVELOPMENT AND APPLICATION BASIC THEORY IS DEVELOPED IN A SYSTEMATIC WAY AND PRESENTED IN A FORM EASILY APPLIED FOR PRACTICAL USE IN THIS WORK THE GHOST EFFECT AND NON NAVIER STOKES EFFECTS ARE DEMONSTRATED FOR TYPICAL EXAMPLES B⍰ NARD AND TAYLOR COUETTE PROBLEMS IN THE CONTEXT OF A NEW FRAMEWORK A NEW TYPE OF GHOST EFFECT IS ALSO DISCUSSED

Molecular Theory Of Gases And Liquids

1954

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 WAS REPRODUCED FROM THE ORIGINAL ARTIFACT AND REMAINS AS TRUE TO THE ORIGINAL WORK AS POSSIBLE THEREFORE YOU WILL SEE THE ORIGINAL COPYRIGHT REFERENCES LIBRARY STAMPS AS MOST OF THESE WORKS HAVE BEEN HOUSED IN OUR MOST IMPORTANT LIBRARIES AROUND THE WORLD AND OTHER NOTATIONS IN THE WORK 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

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Molecular Theory of Gases & Liquids

1895

THIS CLASSIC BOOK NOW REISSUED IN PAPERBACK PRESENTS A DETAILED ACCOUNT OF THE MATHEMATICAL THEORY OF VISCOSITY THERMAL CONDUCTION AND DIFFUSION IN NON UNIFORM GASES BASED ON THE SOLUTION OF THE MAXWELL BOLTZMANN EQUATIONS THE THEORY OF CHAPMAN AND ENSKOG DESCRIBING WORK ON DENSE GASES QUANTUM THEORY OF COLLISIONS AND THE THEORY OF CONDUCTION AND DIFFUSION IN IONIZED GASES IN THE PRESENCE OF ELECTRIC AND MAGNETIC FIELDS IS ALSO INCLUDED IN THE LATER CHAPTERS THIS REPRINT OF THE THIRD EDITION FIRST PUBLISHED IN 1970 INCLUDES REVISIONS THAT TAKE ACCOUNT OF EXTENSIONS OF THE THEORY TO FRESH MOLECULAR MODELS AND OF NEW METHODS USED IN DISCUSSING DENSE GASES AND PLASMAS

Molecules and the Molecular Theory of Matter

2016-07-04

DYNAMICS OF GAS SURFACE SCATTERING DEALS WITH THE DYNAMICS OF SCATTERING AS INFERRED FROM KNOWN PROPERTIES OF GASES AND SOLIDS THIS BOOK DISCUSSES MEASUREMENTS OF SPATIAL DISTRIBUTIONS OF SCATTERED ATOMIC AND MOLECULAR STREAMS AND OF THE ENERGY AND MOMENTUM WHICH GAS PARTICLES EXCHANGE AT SOLID SURFACES IT ALSO CONSIDERS TWO REGIMES OF SCATTERING BOTH OF WHICH ARE ASSOCIATED WITH A LOWER RANGE OF INCIDENT GAS ENERGIES THE THERMAL AND STRUCTURE SCATTERING REGIMES COMPRISED OF 10 CHAPTERS THIS BOOK OPENS WITH A BRIEF HISTORICAL OVERVIEW OF THE EARLY EXPERIMENTS THAT INVESTIGATED THE DYNAMICS OF SCATTERING OF GASES BY SURFACES THE DISCUSSION THEN TURNS TO SOME ELEMENTS OF THE KINETIC THEORY OF GASES INTERMODULAR POTENTIALS AND INTERACTION REGIMES AND CLASSICAL MECHANICAL LATTICE MODELS USED IN GAS SURFACE SCATTERING THEORY THE APPLICATIONS OF MOLECULAR BEAMS TO THE STUDY OF GAS SURFACE SCATTERING PHENOMENA ARE ALSO DESCRIBED THE REMAINING CHAPTERS FOCUS ON EXPERIMENTS AND THEORIES ON SCATTERING OF MOLECULAR STREAMS BY SURFACES OF SOLIDS WITH EMPHASIS ON THERMAL AND STRUCTURE REGIMES OF INELASTIC SCATTERING QUANTUM THEORY OF GAS SURFACE SCATTERING AND QUANTUM MECHANICAL SCATTERING PHENOMENA THIS TEXT CONCLUDES WITH AN ANALYSIS OF ENERGY EXCHANGE PROCESSES THAT MAY OCCUR WHEN A SOLID SURFACE IS COMPLETELY IMMERSED IN A STILL GAS THIS MONOGRAPH WILL BE A VALUABLE RESOURCE FOR STUDENTS AND PRACTITIONERS OF PHYSICS CHEMISTRY AND APPLIED MATHEMATICS

Kinetic Theory

2013-09

FROM THE PREFACE THE PAPERS HERE REPRINTED IN CHRONOLOGICAL ORDER SERVE TO EXHIBIT THE HISTORICAL DEVELOPMENT OF THE IDEA OF A CONNECTION EXISTING BETWEEN THE NUMBER OF PARTICLES IN DIFFERENT GASES AND THE VOLUME THEY OCCUPY IT WILL BE SEEN THAT DALTON FROM THE FIRST ENTERTAINS THE NOTION THAT EQUAL VOLUMES OF DIFFERENT GASES MAY CONTAIN THE SAME NUMBER OF ULTIMATE PARTICLES AT EQUAL TEMPERATURE AND PRESSURE BUT THAT HE IS LEGITIMATELY FORCED TO REJECT THIS ASSUMPTION CONCEIVING NO DISTINCTION BETWEEN THE ATOM AND THE MOLECULE OF AN ELEMENT GAY LUSSAC S IMPORTANT EXPERIMENTAL WORK ON THE COMBINING VOLUMES OF GASES THEN SHOWS THE NECESSITY OF A SIMPLE RELATION BETWEEN THE ULTIMATE PARTICLES OF GASES AND THEIR VOLUMES ALTHOUGH HE DOES NOT POINT THIS OUT IN HIS PAPER DALTON HOWEVER PERCEIVES THE NECESSITY AND CHARACTERISTICALLY CONCLUDES BY DOUBTING THE ACCURACY OF GAY LUSSAC S EXPERIMENTS AVOGADRO FINALLY

ACCEPTS BOTH DALTON S THEORY AND GAY LUSSAC S DATA AND TEACHES HOW TO RECONCILE THEM BY DISTINGUISHING BETWEEN THE ATOM AND THE MOLECULE OF AN ELEMENTARY GAS IT HAS NOT BEEN THOUGHT NECESSARY TO REPRINT THE LETTER OF AMPERE TO BERTHOLLET ANNALES DE CHIMIE 90 43 86 1814 SINCE THAT PAPER CONTAINS NO ADVANCE ON THE VIEWS OF AVOGADRO PUBLISHED THREE YEARS EARLIER ITS AUTHOR SIMPLY DRAWING THE SAME CONCLUSIONS FROM THE SAME PREMISES THE ENGLISH VERSION OF THE FRENCH ORIGINALS WILL PROBABLY BE FOUND MORE FAITHFUL THAN ELEGANT ESPECIALLY SO IN THE CASE OF AVOGADRO S PAPER WHERE THE FRENCH IS ALWAYS CLUMSY AND OCCASIONALLY OBSCURE

A Kinetic Theory of Gases and Liquids

1954

INTRODUCES THE TRACTOR TRAILER ALLOWING THE READER TO COUNT ITS PARTS USING THE NUMBERS FROM ONE TO TEN AND ITS WHEELS USING THE NUMBERS TO EIGHTEEN

The Dynamical Theory of Gases

1966

THE KINETIC THEORY OF GASES AS WE KNOW IT DATES TO THE PAPER OF BOLTZMANN IN 1872 THE JUSTIFICATION AND CONTEXT OF THIS EQUATION HAS BEEN CLARIFIED OVER THE PAST HALF CENTURY TO THE EXTENT THAT IT COMPRISES ONE OF THE MOST COMPLETE EXAMPLES OF MANY BODY ANALYSES EXHIBITING THE CONTRACTION FROM A MICROSCOPIC TO A MESOSCOPIC DESCRIPTION THE PRIMARY RESULT IS THAT THE BOLTZMANN EQUATION APPLIES TO DILUTE GASES WITH SHORT RANGED INTERATOMIC FORCES ON SPACE AND TIME SCALES LARGE COMPARED TO THE CORRESPONDING ATOMIC SCALES OTHERWISE THERE IS NO A PRIORI LIMITATION ON THE STATE OF THE SYSTEM THIS MEANS IT SHOULD BE APPLICABLE EVEN TO SYSTEMS DRIVEN VERY FAR FROM ITS EQUILIBRIUM STATE HOWEVER IN SPITE OF THE PHYSICAL SIMPLICITY OF THE BOLTZMANN EQUATION ITS MATHEMATICAL COMPLEXITY HAS MASKED ITS CONTENT EXCEPT FOR STATES NEAR EQUILIBRIUM WHILE THE LATTER ARE VERY IMPORTANT AND THE BOLTZMANN EQUATION HAS BEEN A RESOUNDING SUCCESS IN THIS CASE THE FULL POTENTIAL OF THE BOLTZMANN EQUATION TO DESCRIBE MORE GENERAL NONEQUILIBRIUM STATES REMAINS UNFULFILLED AN IMPORTANT EXCEPTION WAS A STUDY BY IKENBERRY AND TRUESDELL IN 1956 FOR A GAS OF MAXWELL MOLECULES UNDERGOING SHEAR FLOW THEY PROVIDED A FORMALLY EXACT SOLUTION TO THE MOMENT HIERARCHY THAT IS VALID FOR ARBITRARILY LARGE SHEAR RATES IT WAS THE FIRST EXAMPLE OF A FUNDAMENTAL DESCRIPTION OF RHEOLOGY FAR FROM EQUILIBRIUM ALBEIT FOR AN UNREALISTIC SYSTEM WITH RARE EXCEPTIONS SIGNIFICANT PROGRESS ON NONEQUILIBRIUM STATES WAS MADE ONLY 20 30 YEARS LATER

Molecular Theory of Gases and Liquids

2010-11-11

IMPARTS THE SIMILARITIES AND DIFFERENCES BETWEEN RATIFIED AND CONDENSED MATTER CLASSICAL AND QUANTUM SYSTEMS AS WELL AS REAL AND IDEAL GASES PRESENTS THE QUASI THERMODYNAMIC THEORY OF GAS LIQUID INTERFACE AND ITS APPLICATION FOR DENSITY PROFILE CALCULATION WITHIN THE VAN DER WAALS THEORY OF SURFACE TENSION USES INDUCTIVE LOGIC TO LEAD READERS FROM OBSERVATION AND FACTS TO PERSONAL INTERPRETATION AND FROM SPECIFIC CONCLUSIONS TO GENERAL ONES

Kinetic Theory of Granular Gases

1954

Molecular Theory of Gases and Liquids. (Stichworte Teil 2)

1916

The Dynamical Theory of Gases

1960

Elements of the Kinetic Theory of Gases

1997-09-09

Gas Dynamics

1893

Foundations of the Molecular Theory

2013-09

The Kinetic Theory of Gases; Elementary Treatise with Mathematical Appendices

1986

Maxwell on Molecules and Gases

2003-07-28

The Kinetic Theory of Gases

2007-10-16

Molecular Gas Dynamics

2019-02-25

A Kinetic Theory of Gases and Liquids

1990

The Mathematical Theory of Non-uniform Gases

2012-12-02

Dynamics of Gas-Surface Scattering

1899

The Kinetic Theory of Gases

2017-07-25

Foundations of the Molecular Theory

1931

The Nature of a Gas

1904

Applications of the Kinetic Theory to Gases, Vapors, Pure Liquids, and the Theory of Solutions

1969

Kinetic Theory of Gases

2013-03-09

Kinetic Theory of Gases in Shear Flows

1996

Introduction to Thermodynamics and Kinetic Theory of Matter

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