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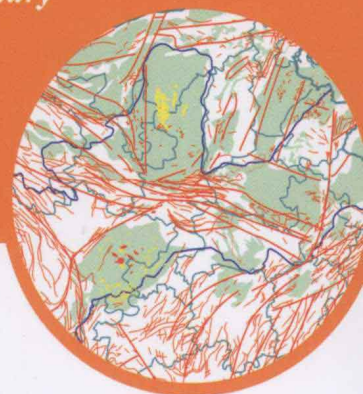
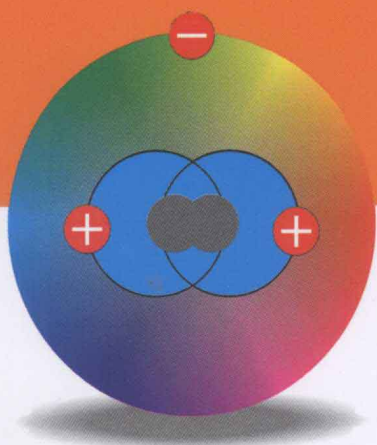
新原子论——及其应用研究

The New Theory on Atom and Its Application

——油气成矿爆炸地质动力学理论

— The Theory of Explosion Geodynamics Principles of Forming Oil and Gas and Energy Strategy of the New Century

曾雄飞 著 伍义生 译



上篇(基础篇): 新原子论——原子电子结构原理

The New Theory on Atom

The Electronic Structure Principle of Atom

中篇: 地球的产生和演化

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国防工业出版社

National Defense Industry Press

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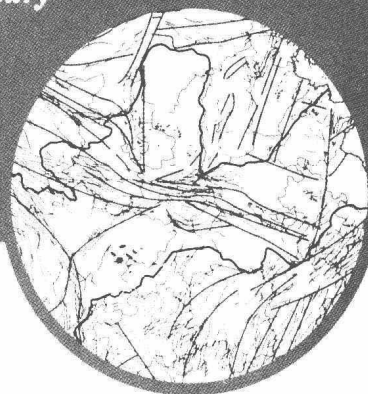
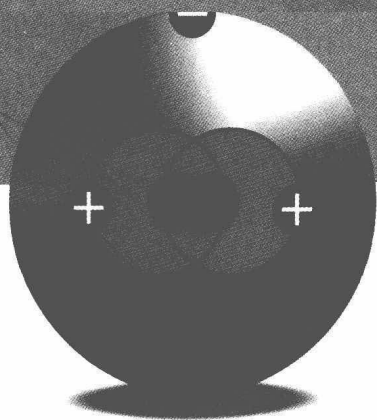
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图书在版编目(CIP)数据

新原子论及其应用研究:油气成矿爆炸地质动力学理论:汉英对照/曾雄飞著;伍义生译. —北京:国防工业出版社,2010.10

ISBN 978-7-118-06863-4

I. ①新... II. ①曾... ②伍... III. ①原子论—研究—汉、英 ②油气藏—石油天然气地质—动力学—研究—汉、英 IV. ①0562②P618.130.2

中国版本图书馆 CIP 数据核字(2010)第 165872 号

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国防工业出版社 出版发行

(北京市海淀区紫竹院南路 23 号 邮政编码 100048)

北京嘉恒彩色印刷有限责任公司

新华书店经售

*

开本 787×1092 1/10 印张 20 $\frac{3}{4}$ 字数 372 千字

2010 年 10 月第 1 版第 1 次印刷 印数 1—1000 册 定价 180.00 元

(本书如有印装错误,我社负责调换)

国防书店:(010)68428422

发行邮购:(010)68414474

发行传真:(010)68411535

发行业务:(010)68472764

前 言

本研究是作者追踪原子世界半个多世纪的产物。近百年来,物理学、化学、爆炸力学、核科学和核爆炸学、生物医学、天文学、地质学和油气科学,取得了人类历史上无与伦比的成就。科学史展现,重大科技进步是以 100 年为标尺的,当历史的巨舰驶入 21 世纪,中华民族迎来了最好的创新机遇期。

本书是以曾雄飞的《新原子论及其应用研究——油气成矿爆炸地质动力学理论》为基础,结合后续的《油气成储主层的冲击波理论》、《大油气田的勘探方向与冲击波理论》和《地球和生物演化的爆炸波理论》三篇论文,进行简缩改写,以中英文两种语言,分列三篇编排:

上篇(基础篇) 新原子论——原子电子结构原理

中篇 地球的产生和演化

下篇(应用篇) 油气成矿爆炸地质动力学理论——油气成矿原理及新世纪能源战略

下篇由曾雄飞和曾燕共同撰写,曾燕负责地质图部分。全书由伍义生译成英文。

本研究依据哥白尼提出日心说以来 500 年所积累的资料,道尔顿提出近代原子论 200 年所积累的资料,特别是卢瑟福提出原子有核结构 100 年所积累的资料,李四光提出地质力学理论以来所积累的资料,对如此丰富的科学资料进行了全面的审视和梳理,终于发现:原子核中有核,原子由三层次电子结构构成,电子及其所产生的场构成了宇宙,构成了整个物质世界;地球及太阳系行星是 45.6 亿年前,一颗石质原行星撞击原太阳,发生链锁大爆炸产生的;原行星已经存在生命;盆地和油气田是大尺度物质波(冲击波)叠加的结果,找到了富油气区、油气田田位、油气层层位分布律,油气储量微分—积分分布律,主油气储层和大型油气田的赋存规律。揭示人类不存在能源危机,碳聚变是能源的新方向,新换能机、新动力机将被发明。人类将造就一个生产力空前发展的文明新时代。

作者以上世纪百年科技积累为依托,放眼星球宇宙的大视野,立于 40 多亿年的历史长焦,拿起辩证法的利器,重新审视百年来无比丰富的上述科技资料;终于发现:原子是由三层次电子构成的,由质子和中子组成的三电子核素元构成

了纷繁的核素世界,电子和电子集团及其所产生的场构成了整个宇宙。写就了《太阳系行星形成的爆炸波理论》作为开篇,《宇宙的哲学与哲学的宇宙》为末篇,计 10 篇论文,曾于 2006 年首先在《广东科技》披露,在长春、商丘等相关物理年会报告(2006 年 7 月),北京中美中能物理研讨会(8 月)和湖州会议(10 月)会下交流;2007 年 3 月 12 日《科技日报》作了纪实报道,《北京相对论研究快报》于 2007 年 5 月 20 日结集刊载。引起了学术界的关注。以上 10 篇论文构成了本书的第一篇基础篇。这项研究获得了广泛的实验支持:行星分为两大类(石头型类地行星和气体型类木行星),科学解释了最难理解的金星逆向自转、243 天长周期现象和高达 10^{15} eV 至 10^{21} eV 超高能 γ 辐射疑难;高能粒子撞击最终产物一定是电子,而电子对撞终产物是粒子,包括质子等;2000 多个核素和 700 多基本粒子的作用能,以及核自旋的强力支持。

“地球矿产是原行星撞击爆炸产生”成为新原子论的自然推论。科学史许多新论往往是通过它的推论的验证,获得证明而确立,或是被扬弃。新原子论也循这样的轨迹前行。油气成矿理论被作为首选课题列入探索研究。

人类在油气即将枯竭的一片惊愕中进入 21 世纪,能源危机笼罩着全球。地球真的缺乏能源吗? 中国会缺油吗? 新能源的出路何在? 油气成矿理论,成为新世纪最重大,又是最迫切的基础理论问题,也是最急迫的实际问题。“国家急需,我之可能;远近结合,以近养远”是作者半个世纪来从事国家重大(任务、民生和基础)研究的选题原则,屡获成功。我国第一口超深井——四川女基井射孔所用的耐热炸药就是由梁国霖和曾雄飞科技团队研制的,他把理论锋芒指向油气地质理论,或许有着历史的情缘。油气产业的超级繁荣,百年来累积了极其丰富的资料;地质学又特别尊重史实,不同学派还易于生长,呈现百家争鸣的良好氛围。作者热切而又沉静,投身于这个大家庭,日以继夜,夜以继日,学习、研究、分析、归纳、总结,再学习和研究。怎么油田的裂纹呈放射状排布? 一颗百万当量的核弹在地下只能炸出百十米的裂纹,地表顶多鼓个小包;而盆地的断裂达数十千米,鼓起数千米或是数十千米的大包,环太平洋的大断裂则是数千千米。又为什么所有油气田都毫无例外地钟情于碳酸盐岩(含碳酸盐的砂岩)? 翻开地质图,那火成岩在盆地里四面开花,活像顽童玩花炮,那纸圈四面散开;又似炮弹触地爆炸,炸出个坑,泥石四散。更加令人称奇的是,那油气田的剖面图,或是油气层的层位,就好像熟知的光谱那样分立,又像海浪那样波起涛落。作者曾经研究碎甲弹多年,那油层同碎甲弹的层裂何其相似乃尔! 于是爆炸地质动力学理论油然而生,原来所有这一切都是大爆炸冲击波的杰作,在地上,在盆地里,留下的印记。

爆炸地质动力学理论把化学物理、物理力学和爆炸力学、冲击波理论以及

核爆炸现象学的原理,同地质力学理论、石油地质学、盆地论、沉积学和断裂构造学相结合;揭示了星球撞击链锁大爆炸冲击波,造就了地球的板块、海洋、高原和平原,各式各样的盆地,湖泊和山峦,巨大的圈闭、断裂、空洞和无数的裂纹。原行星为原地球提供了碳酸盐岩作为碳源,原太阳提供了丰富的氢源;大爆炸冲击波作用,合成了约 140 亿亿吨水以及碳等矿物;这些盆地,以此为原料,冲击波叠加作为粉碎机,以所形成的空洞、断裂、圈闭作为合成反应器,历经沧桑,方才形成了近代的油气田。这些爆炸需要巨大的能量,参照地下核爆炸相似律计算:形成盆地级的断裂,需 20 万颗核弹的能量,断裂半径约 36km;形成海级断裂,需 2.52 亿颗核弹,断裂半径约 429km;形成大洋级的断裂,需能量 239 亿颗核弹,断裂半径约 1814 km;形成地球级断裂,断裂半径约 11 万 km,需能约为大洋级的 2.7 亿倍。上述计算结果,同上世纪地质勘探的结果相符。

按照爆炸地质动力学理论,在研究了全世界 312 个大中型油气田与它们的 958 个油气层(结合煤层超过千)的大量数据之后,找到了油气田和油气藏在盆地中的分布规律,基于冲击波叠加原理,建立了相应的理论方法:富油气区规律及其图形方法;油气层层位分布律及其 100n 规则;油气田田位分布律及其 5|6 规则,以及油气储量的微分和积分分布律。这些规律是大尺度物质波的展现,为发现大型油气矿藏,节省勘探费用,提高勘探效率和节省勘探时间,提供了新的工具。油气矿业将进入可控勘探的新时代。

这些就是新原子论的应用篇。该理论指出地球不存在能源危机:预测油气的地质储量超过 10 万亿吨,而煤超过 30 万亿吨;人类将发明新动力机和电机,磁动力机和磁电机是一个新方向;原子深层的能量超过核能亿倍以上;核能和聚变能也可以采用新技术方法利用,冲击波汇聚引发聚变更值得研究,更加现实,成本要低得多;煤聚变仿天技术可提高其能值 200 万倍;碳循环利用的路子也相当宽广。

中国有丰富的油气(煤炭)资源,它们深藏在三大盆地群中。

东部群包括:兴(安岭)长(白山)隆起—松辽盆地群;华北—泰山隆起中心渤海湾盆地群;井冈山—大别山隆起中心盆地群;东海—台湾隆起中心群;华南—五指山隆起粤琼盆地群;南海—礼乐西隆起中心盆地群。

中部群,包括:贺兰山隆起—鄂尔多斯中心盆地群;秦巴大山隆起—四川中心盆地群(统合秦巴大山隆起鄂尔多斯—华北—华中群);以及以横断山和云贵隆起为中心的盆地群。

西部群,天山隆起中心—准噶尔—塔里木盆地群;唐古拉山隆起(格拉丹东中心)、巴颜喀拉山和阿尼玛卿山隆起(雅拉达泽中心)、祁连山南隆起和冈底斯

山隆起(纳木错中心)以及查多岗和昂龙岗日隆起中心所形成的青藏高原盆地群。

中国处于全球(太平洋、南海、印度洋、大西洋和北冰洋)冲击波的中央汇聚区,为形成碳及碳源产品,油气等提供了独特的条件。拥有世界的最高峰。处于太平洋西岸,可接受太平洋粉尘、碎屑岩的沉积。这些优越的条件,造就了中国成为能源富集的大国。

全人类已经卷入 21 世纪的科技大潮。上世纪的两次世界大战,给人类和地球带来的破坏和苦难,引发了全球性的反思。人类应当处于和谐的世界,共享地球村民的康乐,共同保护好宇宙中这颗最为闪亮的明珠。中国先哲,两千年前就发出了震撼世界的“天下为公”的呼号;百年前,中国处于列强分割、积弱饥寒的双重包袱下,中国先圣,仍发出了“中国应当对人类有较大贡献”的轰鸣,数千万中国人付出了最可宝贵的生命代价;在今天中华民族是担承地球赋予的历史责任的时候了。21 世纪是人类历史上最伟大的世纪,年青的朋友们,共和国正期待着你们!

曾雄飞

2010.7

Preface

This study is product of the author's tracing atomic world for more than half a century. For almost a hundred years, mankind has attained unparalleled achievements in physics, chemistry, explosion mechanics, nuclear science and nuclear explosions, biomedicine, astronomy, geology and petroleum science. History of science reveals that a century is a measure of significant scientific and technological progress, when the big ship of history entered the 21 century, the Chinese nation has ushered in the best opportunity of innovation.

Based on "New Theory on Atom and its Application—Theory of Explosion Geodynamics of forming Oil and Gas", a monograph written by Zeng Xiongfei, combined with three treatises resulted from follow-up studies "Shock-wave Theory of Main Oil-gas layers", "Prospecting Direction of Big Oil-gas Fields and Shock-wave Theory", "Explosion Wave Theory of Earth and Biological Evolution", this version has been revised of three parts, in Chinese and English:

Part I New Theory on Atom—Principle of Atomic and Electronic Structure

Part II Formation and Evolution of the Earth

Part III Theory of Explosion Geodynamics Forming Oil and Gas

Part III is co-written by Zeng Xiongfei and Zengyan. The latter is in charge of geologic map. The book is translated into English by Wu Yisheng.

According to the data accumulated for 500 years since Copernicus suggested heliocentric theory, the data built up for 200 years since Dalton put forward modern atomism, especially the data accumulated for 100 years since Rutheford put forward atomic nucleus theory, and data piled up since Li Siguang brought forth theory of geomechanics, the author had comprehensively examined, analyzed, sorted out such a wealth of scientific information, finally found: there is nucleus inside atomic nucleus, atom is composed of electrons with three shell layer structure, the universe and the whole material world are constituted by electrons and their fields. The Earth and other planets of solar system were produced 4,560 million years ago from chains of big explosions triggered by a stony protoplanet impacting protosun; Life had already existed on the protoplanet; Basins and oil-gas fields are result of interference of large scale material waves (shock-waves), afterwards finding the laws of distribution for rich oil-gas are-

as, oil-gas fields, hydrocarbon reservoirs, differential and integral distribution of oil-gas reserves, main oil gas layer and large oil-gas fields as well. The energy crisis do not exist for humankind, carbonic fusion is new orientation of power source, new energy conversion machine and new engine will be invented. The humanity will create a civilized new era of unprecedented development of productivity.

Relying on scientific and technologic accumulation of past century, scanning widely the big vision of universe, focusing on the long history of more than 4 billion years and grasping the sharp weapon of dialectics, the author re-examined the above mentioned scientific and technologic data, finally discovered that: atom is composed of three shell layer electrons. Triple electron nuclide unit consisted of proton and neutron forms the complicated nuclide world, and electrons, groups of electrons and fields created by them constitute the entire universe. The author wrote “explosive wave theory of formation of planets in the solar system” as the opening part, “universal philosophy and philosophic universe” as closing part, totaling 10 treatises, first published on *Guangdong Science and Technology* in 2006, reported on relevant physical annual meetings in Changchun, Shangqiu etc in July 2006, communicated after meeting in China-USA moderate-energy physics seminar, Beijing (August) and Huzhou Meeting (October). *Science and Technology Daily* made a documentary report on May 20, 2007, and “Beijing Relativity Theory Research” compiled and published these articles, which aroused concern of academic circles. The above mentioned 10 treatises constitute basic part of new published “New Theory on Atom”. This study has obtained comprehensive experiment support; Planets are mainly divided into two types (stony terrestrial planet and gaseous Jovian planet), scientifically explained the most unintelligible issues of reversal rotation, the 243 day periodic phenomenon of Venus and the $10^{15} - 10^{21}$ eV super-energy γ radiation; Final product of high energy particle must be electron, while the end products of electron colliding must be particle, including proton etc; action energy of more than 2000 nuclides and 700 elementary particles, and nuclear spin, etc.

“Minerals of the Earth were created by the explosions triggered by the impact of the protoplanet” is the natural deduction of new atomic theory. In the history of science, many new theories have been proved and established or been abandoned through verification of their deductions. New atomic theory also follows such a path to move ahead. The theory of forming oil and gas has been included as first choice of projects for exploratory study.

Energy crisis was hanging over the world, when mankind entered 21 century

ry in a shock that oil and gas will dry up soon. Is it true that the Earth is short of energy resources? Will China lack oil? Where is the way out of new energy? The theory of forming oil-gas becomes the most significant and most urgent issue of basic theory as well as the most urgent practical problem of the new century. "What the country urgently needs is what I will do, combining the distant needs with near ones, using the researches in hand to raise subjects in distance." Has been topic selecting principle of the author for national significant (task, people's livelihood and basis) research, and succeeded repeatedly. The heat-resistant explosive used in perforation in well Nvjijing—the first ultra-deep well of our country was developed by a scientific technologic team led by Liang Guolin and ZengXiongfei, therefore, there might be historical affectional reason, as he aimed theoretic edge at petroleum geological theory. The super prosperity of petroleum industry resulted in abundant data, and geologic circle especially value historical facts, different schools are easy to develop, there presents a good atmosphere for various schools of thought to strive. Fervent and calm, threw himself into this big family, studying, researching, analyzing, deducing, summarizing, restudying and researching every day and night. Why are cracks of oil fields distributed in radial pattern? A nuclear bomb equivalent to 1 million tons of TNT can only break cracks of several hundred of meters underground and at most rouse a small uplift, while fractures in basins are of dozens km, uplifts of several km or dozens km, and the circum-Pacific big fractures are of several thousand km. Why do all oil-gas fields, without exception, stay with carbonate rock (sandstone containing carbonate)? On geologic maps, we can see igneous rock spread out all sides in basin, just like exploded firework with paper shell layers spreading in all directions, also like explosion of cannon shot on the ground, creating a pit with debris spreading all sides. What more incredible is that profile of petroleum fields or strata of hydrocarbon reservoirs in separated pattern just like spectrum, also like ocean wave in fluctuation. The author had studied Squash Head Projectile (SHP) for years, what a striking likeness between oil layers and spallings of SHP! Thereupon, theory of explosion geodynamics arose spontaneously, it turned out that all these are masterpieces of shock-waves of big explosions, their marks left on ground in basins.

Theory of explosion geodynamics combines principles of chemical-physics, physical-mechanics, shock-wave theory, with nuclear explosion phenomenology, theories of geo-mechanics, petroleum geology, and basin theory, sedimentology and fracture tectonics. It reveals that shock-waves of planet impact triggered chains of big explosions and created the Earth's plates, oceans, plateaus,

planes, basins and mountains, huge traps, fractures, cavities and innumerable cracks. The protoplanet provided the former earth with carbonate rock as carbon source, while protosun provided abundant hydrogen source. The shock-wave effect of big explosions synthesized 1,400 quadrillion tons of water and minerals such as carbon, which were used by basins as raw materials, interference of shock-waves as crushers, cavities, fractures, traps as synthesis reactors, long through history, finally formed modern petroleum fields. These explosions need tremendous energy, referring to underground nuclear explosion, as per similarity law, we work out: It needs 200,000 pieces of nuclear bombs to create a basin class fracture, with radius of rupture about 36km; It needs 252 million pieces of nuclear bombs to produce a sea class fracture, with radius of rupture about 429km; It needs 23.9 billion pieces of nuclear bombs to create a ocean class fracture, with radius of rupture about 1814 km; The energy needed is 270 million times of that needed for a ocean class fracture to create a global class fracture, with radius of rupture about 110,000km. The results of above calculations conform to exploration results of last century.

According to explosion geodynamics, after looking into a great number of data about 312 large petroleum fields of the world and 958 hydrocarbon layers (over a thousand if coal seams included), the author found the law of distribution of petroleum fields and oil-gas layers, and based on principle of interference of shock-waves, the author set up corresponding theoretic methods: Law of rich oil-gas zones and their graphic methods; Distribution law of hydrocarbon reservoir layers and the 100n rules; Distribution law of oil-gas fields and the 5|6 rules, and differential and integral distribution law of hydrocarbon reserves. These laws are presentation of material wave of large scale, which, for the discovery of large oil-gas reserves, provided a new means to save exploration expense and time, and raise exploration efficiency. Petroleum industry will enter a new era of controllable exploration.

These are application part of new atomic theory. The theory pointed out there is no energy crisis on the earth: The predicted geological reserve of oil-gas is above 10 trillion tons, and that of coal is over 30 trillion tons; mankind will invent new power machine and electric motor, with magnetic engine and magnetic motor being the new orientation; Deep-seated energy of atom is 100 million times of nuclear energy; New technologies can be adopted in using nuclear energy and fusion energy, and fusion resulted from convergence of shock-waves is worthier to research, more practical, and much cheaper in cost; Technique of carbon fusion can raise coal energy 2 million times; Methods of cyclic utilization

of carbon are also broad.

China has abundant oil-gas (coal) resources, which are deeply buried in three big basin groups:

East group includes Xing (anling) Chang (baishan) uplift—Songliao basin group, North China—Taishan uplift centered Bohai bay basin group, Jinggangshan—Dabieshan uplift centered basin group, East China Sea—Taiwan uplift centered basin group, South China—Wuzhishan uplift Yueqiong basin group, South China Sea—West Reed Bank uplift centered basin group.

Middle group includes Helanshan uplift—Ordos centered basin group, Qingbadashan uplift—Sichuan centered basin group (integrating Qingbadashan uplift—Ordos—North China—Central China group), Hengduanshan—Yungui uplift centered basin group.

West group includes Tianshan uplift centered—Junggar—Tarim basin group, Bayankela—Animaqing uplift (Yaladaze center), south uplift of Qilianshan—Gangdise uplift (Namco center) and Chaduogang, anglongganre uplift centered Qinghai—Tibet plateau basin group.

Located at central convergent area of global (Pacific Ocean, South China Sea, Indian Ocean, Atlantic Ocean and the Arctic Ocean) shock waves, China provided unique conditions for the formation of carbon, carbon source products, oil and gas etc. Having the highest mountain on earth, at west bank of Pacific Ocean, receiving sedimentation of dust and clastic rock from the ocean, with these superior conditions, China has become a big country rich in energy resources.

The whole humankind have involved in the scientific and technologic big tide of 21 century. The two world wars of last century brought damages and sufferings to mankind and the earth, triggered global reflection. Human beings should live in a harmonious world, share peace and happiness of the earth villagers, and jointly well protect this most beautiful pear of the universe. Two thousand years ago, a great thinker of China appealed for “The whole world is one community” A hundred years ago, when China was under double burden of being partitioned by big powers and being poor and weak, a Chinese sage said loudly “China ought to make greater contribution to humanity”, and tens of millions of Chinese paid the cost of their precious lives. Now, it is the time for Chinese nation to bear the historical duty endued by the earth. As 21 century is the greatest century throughout the history of mankind, young friends, the Public is expecting you!

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