



国家地质实验测试中心
地质分析文献索引
(1978 ~ 2010 年)

Literature Index on Geoanalysis of
National Research Center for Geoanalysis
(1978—2010)

潘静 王毅民 徐书荣 编
江蓝 陈幼平 王祎亚

Editors: PAN Jing WANG Yimin XU Shurong
JIANG Lan CHEN Youping WANG Yiya

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内 容 简 介

本书是根据国家地质实验测试中心科技人员 1978~2010 年发表和合作发表的 1505 篇地质分析文献,按年代、技术方法和应用领域、作者编制成年代索引、专题索引和作者索引。

本书可供从事地质分析科研及有关人员参考阅读。

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序 1

地质分析是人们探索地球、从事地学研究，深刻了解、合理开发和有效保护地球资源必不可少的技术手段。原地质矿产部岩矿测试技术研究所的组建、国家地质实验测试中心的命名，使半个世纪前李四光先生关于“地质、钻探、化验，三足鼎立，三分天下有其一”的著名论述得到了充分体现和成功的实践。

国家地质实验测试中心（下面简为“中心”）及原地质矿产部岩矿测试技术研究所在过去 30 多年间经历了国际地学研究领域和学科方向的深刻变化和我国地质工作从地质找矿拓展为资源和环境并重的重大转变，也接受了国际分析化学技术脱胎换骨式的洗礼。2006 年成功承办“GEOANALYSIS 2006”国际会议表明，“中心”的发展获得了我国地学界和分析化学界的认可和国际上的关注。

在此时间，在此情况下，全面收集、整理、汇编“中心”33 年发展中几代地质分析人发表的公开文献无疑是必要的，这不仅有助于从“中心”成立和发展中研究、总结中国地质实验测试工作发展模式、技术方向，也为“中心”梳理、总结不同阶段、领域的技术发展和成果提供了基本的文献资料，同时对于了解“中心”对我国地球科学及国际地质分析事业的贡献和我国地质分析研究领域的变化很有帮助。该书的出版是一项很有意义的工作，我感到很欣慰，表示祝贺！

借此机会感谢几代地质分析人为“中心”的发展和我国地质事业作出的贡献！也感谢来自不同地域、不同领域的国内外合作者与我“中心”科技人员的密切合作，祝贺他们共同为国际地质科学事业作出的贡献。

李家熙

（原地质矿产部岩矿测试技术研究所所长、原国家地质实验测试中心主任）

2011 年 10 月

Foreword 1

Geoanalysis is a necessary technique for people to deeply understand, rationally develop and effectively protect the earth's resources. The foundation of the Institute of Rock and Mineral Analysis and its successor of National Research Center for Geoanalysis (NRCGA), has fully practiced and proved the brilliant exposition that 'geology, drilling, analytical test, like the three legs of a tripod, play an indispensable role of their own in development of geosciences' presented by Mr. LI Siguang, a famous Chinese geologist, half a century ago.

In the past 30 years, based on the demands of social development and the great progress in analytical sciences and technologies' the international research directions and fields on geosciences have profoundly changed and China's geological work also has major innovation from the single geological prospecting expanding to the combination of resource development and environment protection. NRCGA has experienced this major development history and also received re-born-style baptism in international geoanalytical technique achievements. In 2006, NRCGA successfully hosted 'The 6th International Conference on the Analysis of Geological and Environmental Materials' (GEOANALYSIS 2006), and the development and academic achievements of NRCGA have been recognized by China's analytical and geological worlds, and also have been attracting extensive attentions from abroad.

In this case, it is undoubtedly necessary for comprehensive collection, collation, compilation of the geoanalysis literature written by NRCGA's geoanalysts in the past 33 years. The work does not only help to summarize the development mode and technical direction of China's geological test work through the history of NRCGA, but also provides the basic literature to summarize the achievements in the different development stages of NRCGA. It is helpful for understanding NRCGA's contribution to China's earth science and the continuously developed and deepened geological analysis research in China. The publication of the book is a significant work and I am very pleased and give my congratulations to the editor group.

I would like to take this opportunity to express my thanks to the scientists engaged in geoanalysis for their contribution to China's geosciences and also to the local and foreign partners for their close cooperation with NRCGA and their co-contribution to the Chinese and international geological sciences.

Prof. LI Jiayi

(The Former Director of the Institute of Rock and Mineral Analysis,
Ministry of Geology and Mineral Resources.
The Former Director of National Research Center for Geoanalysis)

October, 2011

序 2

人口、资源、环境越来越成为世界经济发展的主要制约因素。人类正面临矿产资源短缺、能源匮乏、环境污染、生态破坏和自然灾害的严重威胁，资源安全、生态安全和环境安全已成为世界各国政府和社会各界共同关注的目标。

新世纪伊始，地质工作向以国家需求为导向的转变，极大地拓宽了地质科学的服务功能，也使地质科学的思维方式发生了重大转变。作为地质工作“眼睛”的地质实验测试工作必须适应地质工作的根本转变，以地球科学发展的需求为导向，以现代分析科学的飞速发展为依托，成为现代地球科学研究和地质调查的重要技术支柱。

国家地质实验测试中心是科技部命名的 15 个国家级行业分析测试中心之一，一个专门从事地质物料测试及实验测试技术方法研究、具有法人资质的国家公益性科研事业单位。“中心”的基本业务定位是：以技术创新为灵魂和核心，充分发挥其在国家地质行业实验测试技术领域的领军作用和对地质实验测试技术发展的引领作用；以国家地质工作的需求为导向，服务于地球科学研究和国家公益性地质工作，以实验测试技术的不断进步为地球科学研究和地质调查提供坚实的技术支撑。

本书全面、系统地汇集了国家地质实验测试中心科技人员在 1978 ~ 2010 年发表和合作发表各类公开文献共计 1505 条。这些文献既承载了新老地质分析工作者持续创新的研究成果和丰富的实践经验，又客观、真实地记录了 33 年间我国地质分析研究与应用领域的极大拓展和研究工作的不断深化，特别是记录了国家地质工作的根本转变，使地质分析从传统的单纯资源分析向资源环境物料分析并重的发展历程和趋势。本书凸显了地质分析技术从传统的无机分析向有机分析、形态分析，从宏观的整体分析向微观的微区原位分析，从单纯元素分析向同位素分析，从单元素化学分析向以大型分析仪器为主的多元素同时分析，从实验室内分析向野外现场分析的拓展，以及适应现代分析测试仪器发展的绿色样品制备技术和方法、海量分析数据的自动化处理、质量控制、地质实验测试方法标准和相关技术规范的研究和制（修）订、标准物质的研制，功能强大、自动化程度高的专业化地质分析仪器及其辅助装置研发等研究工作的深化和取得的一系列成果。

本书采用中、英文对照形式出版，将促进国际地质分析技术的交流。她不仅对于地质分析工作者，而且对于地质人员和其他行业的实验分析工作者都是一部极具学术价值和应用价值的优秀专著。

尹 明

（原国家地质实验测试中心主任）

2011 年 10 月

Foreword 2

Overpopulation, shortage of resources and ecological environment degeneration have become the major factors to restrict the sustainable development of the global economy. Mankind is facing a serious threat from shortages of mineral resources and energy, environmental pollution, ecological destruction and frequent natural disasters. Therefore resource security, ecological security and environmental security have become the common concerns for the government of each nation and the international community as a whole.

From the beginning of the 21st century, the national geological work has been undertaking a significant adjustment and the new strategy emphasizes that the geosciences should more closely meet the demands of state social progress and economic construction, which leads to that the traditional way of thinking in geoscience research have changed dramatically and the service fields and functions of geosciences have been greatly broadened. Geological material analysis and test work, as the 'eye' of the geological work, should adapt to the fundamental changes and become one of main technologies in supporting geoscience research and geological survey with the benefit of modern analytical technology development.

National Research Center for Geoanalysis (NRCGA) is one of 15 state-level industrial analysis and testing centers under the Ministry of Science and Technology, and an institute specialized in geological material testing and related analytical technique and method studies. NRCGA insists on taking the technology innovation as the soul for its development and playing the leading role in geoanalysis field to promote the development of geological testing and experimental techniques in China, and providing a solid technical support for geoscience research and geological survey.

The book is a comprehensive and systematic collection of 1505 literature written by NRCGA's scientists from 1978 to 2010. These references demonstrate the innovative research achievements and abundant practical experiences in geoanalysis from NRCGA's new and old geoanalysts in the past 33 years. And the book also records the developing process and reveals the developing trends of geoanalysis in China.

The book highlights the historical change of geoanalytical technologies in the past 33 years: from traditional inorganic analysis to organic and speciation analysis, from macro-overall analysis to micro *on-situ* analysis, from simple elemental analysis to the isotope analysis, from single-element chemical analysis to simultaneous multi-element analysis based on the modern instruments with multi-element analysis capability, from laboratory analysis to on-site field analysis.

The book records a series of achievements in various fields including green sample preparation techniques, automated processing of massive analysis data, quality control, development

and improvement on standard methods and related technical specifications of testing and experimental technologies, development on standard materials, professional geoanalytical instrumentation, and auxiliary equipments.

The book is published in Chinese and English to promote the international academic exchange in geoanalysis. It is an outstanding monograph with great academic and application values for geological scientists and related workers engaged in experimental analysis.

YIN Ming

(The Former Director of National Research Center for Geoanalysis)

October, 2011

前 言

国家地质实验测试中心是科技部所属的 15 个国家级行业分析测试中心之一，其建制是 1978 年组建的地质矿产部岩矿测试技术研究所——一个专门从事地质材料测试及技术研究、具有法人资质的独立研究机构，其历史可追溯到 1952 年成立的地质部北京化验室。这是我国最早、最有代表性的地质材料分析测试研究单位，她的诞生和发展在中国地质实验测试领域具有重要意义。

地质分析是地质与环境材料分析的简称，是化验、岩矿分析的拓展，是地质工作的重要组成部分，被誉为地质工作的“眼睛”。著名地质学家、我国首任地质部部长李四光先生关于“地质、钻探、化验，三足鼎立，三分天下有其一”的著名论述，精辟地阐明了地质分析工作的地位和作用。20 世纪 80 年代以来，人类社会可持续发展的理念被广泛接受并日益渗透到各个领域，国际地学研究领域和发展方向发生了重大变化，我国地质工作重心也作了相应调整，这都深刻地影响着地质分析研究领域的调整与扩展，同时也为新技术发展提供了难得的机遇。1990 年我国科学家参加了在加拿大召开的首届地质分析国际会议（GEOANALYSIS 90）；1997 年在美国召开的“第三届地质与环境材料分析国际会议”（GEOANALYSIS 97）上，国际地质分析者协会（International Association of Geoanalysts，简称 IAG）成立；随之著名国际专业期刊《Geostandards Newsletter》更名为《Geostandards and Geoanalytical Research》。“地质分析”这一术语逐渐被广泛使用，它比岩矿分析具有更广泛、更深刻的内涵，更能反映地球系统科学的新理念和现代分析技术的发展。国家地质实验测试中心英文名称的使用与国际地质分析领域发生的上述事件是一致的。

在 33 年的历史发展中，国家地质实验测试中心经历了国家与行业需求、学科发展和技术进步的种种变化，在不同历史阶段、不同研究领域都取得了令人瞩目的成果，目前已成为一个实验设备精良、人员素质高、分析测试能力强、技术应用研究领域广，并具有根据国家地质工作需求和相关学科发展开展关键性、先导性技术研究能力的重要地质实验测试研究基地。她不仅在中国地学界和分析化学界具有广泛的影响，在国际地质分析领域也日益受到关注。在国土资源部中国地质调查局和国际地质分析者协会的组织与支持下，2006 年 9 月国家地质实验测试中心在北京成功承办了“第六届地质与环境材料分析国际会议”（GEOANALYSIS 2006）。这是“中心”首次承办国际会议，也是该专业会议第一次在亚洲召开，会议在来自 19 个国家的 80 多位国际同行面前展现了“中心”的风貌。为使国际同行更多地了解“中心”的研究工作，在筹备“GEOANALYSIS 2006”国际会议之初，编者曾收集了 1990 年以来“中心”科技人员发表的论文和专著

目录。2008年，正值国家地质实验测试中心成立30周年之际，这一工作得到了单位领导的关注与重视。2010年，在国家地质实验测试中心基本科研业务费项目的资助下，课题组对“中心”成立以来（1978~2010年）发表的所有文献开展了全面收集、梳理和综合分析工作。本书就是这一工作的阶段性总结。

本书全面汇集了国家地质实验测试中心科技人员在1978~2010年发表和合作发表的地质分析文献，包括国内外期刊、文集论文1470篇，国家标准文件4件，专（译）著31部，共计1505篇（其中英文文献185篇）。这些文献被编制成3个索引：按年代编排的文献索引、按技术方法及应用领域编排的专题索引（分为16个技术方法专题和18个应用及工具类专题）和作者索引，最后对这些文献的年度、专题、作者和专（译）著的出版社分布进行了初步统计。这些文献由1749位作者完成，其中本“中心”作者250位，“中心”合作者1377位，外籍合作者122位。刊载这些文献的有173种中文期刊、89种英文期刊（包括中国出版的11种英文版期刊），及14个出版文集和专著的出版单位。这些资料对了解“中心”乃至我国地质分析的历史发展、研究领域变化、重要成果和对我国地球科学及国际地质分析事业的贡献是有益的。本书采用了中、英文对照形式，便于国际交流。

鉴于21世纪以来，特别是近年来，“中心”研究领域迅速扩展，学科交叉和新技术得到应用，不少研究论文的专业类型不易准确划分，致使文献专题索引的编排难以把握。由于编者水平有限，不当之处，敬请指正。

在本书编制过程中，得到了国家地质实验测试中心领导的关照，一些专家也给予了大力支持，梁汉文、应志春研究员参与了专题索引的校核，在此一并表示感谢。

编者

2011年10月

Preface

National Research Center for Geoanalysis (NRCGA), the former Institute of Rock and Mineral Analysis (IRMA) established in 1978, is an independent institution specialized in testing and analytical technology research of geological materials. Its predecessor is Beijing Laboratory of Ministry of Geology started in 1952, an earliest and most representative analysis and testing institute of geological materials. The development and achievements of NRCGA have typical significance in the field of geoanalysis in China.

Geoanalysis is the short title of the geological and environmental materials analysis and an extension of rock and mineral analysis. It constitutes an important part of geological work and known as the 'eye' of geological work. In 1953, the world-renowned geologist, the first minister of Ministry of Geology of China, Mr. LI Siguang presented the famous comment 'geology, drilling, analytical test, like the three legs of a tripod, play an indispensable role of their own in development of geosciences', which brilliantly expound the importance and function of geoanalysis in geological work.

Since 1980s, the concept of sustainable development of human society is widely accepted and increasingly permeating all areas. The international geoscience research has undergone major changes. The focus of geological work in China has made corresponding adjustments, which profoundly and deeply influences the research and application fields of geoanalysis. In 1990, first international conference on the Analysis of Geological Materials (GEOANALYSIS 90) was held in Canada. In 1997, International Association of Geoanalysts (IAG) was established, and then the leading international professional journal 'Geostandards Newsletter' was renamed as 'Geostandards and Geoanalytical Research'. 'Geoanalysis' is increasingly used, which has broader and more profound meaning than 'rock and mineral analysis', and more scientifically, objectively, completely and accurately reflecting the new ideas of earth system and development of modern analysis technology. The change of NRCGA's name also reflects the change and adjustment in geological agencies and tasks of China in the different historical periods. This change is also consistent with the development and events in the international geoanalysis mentioned above.

In the past 33 years of development, NRCGA has experienced the development of geological sciences and the progress in analytical technologies. In different stages and research areas, NRCGA has achieved impressive achievements and grown as comprehensive and well-known research base for geoanalysis. Now NRCGA has the sophisticated laboratory equipments, high quality of personnel, strong testing capability, wider research fields, and has the capability of carrying out the critical and pilot technology research in accordance with the national needs and related discipline developments. NRCGA does not only gain the extensive influence in geology

and analytical chemistry fields in China, but also received great attention by the international geological scientists. In September 2006, NRCGA hosted the international conference ‘GEOANALYSIS 2006’ in Beijing with support of China Geological Survey and IAG. It was the first time for NRCGA to host the international conference in China and Asia.

In the beginning of the preparation for ‘GEOANALYSIS 2006’, the editors collected the directory of published papers and books written by NRCGA’s scientists since 1990. In 2008, the 30th anniversary of NRCGA, this work received attentions by NRCGA and in 2010 under the supported by general research foundation of NRCGA, the editors started the compilation of the book.

The book is a collection of 1505 articles published in both national and international journals and corpora written by NRCGA’s scientists from 1978 to 2010, including 1470 papers published in local and foreign journals and proceedings, 4 national standards documents, 31 books. These documents are compiled into three indexes, Chronology Index, Special Subject Index arranged by technological method and application field (including 16 technological method topics and 18 application topics), and Author Index. The papers are completed by 1749 authors (250 authors from NRCGA, 1377 domestic co-authors, and 122 foreign co-authors), published in 173 Chinese journals, 89 English journals and 14 publishers. It is helpful for the related professional staff from this book to understand the developing process of geoanalytical technology in both NRCGA and China, and important achievements in geoanalytical research, as well as the contribution of China to international geoanalytical science. The book has been designed as a Chinese-English bilingual form to facilitate the academic exchange with international collaborators.

In the 21st century, especially in the recent years, due to the appearance of massive new modern analytical technology and intersection between different disciplines, some of the professional subjects cannot be accurately classified and are difficult in arranging Special Subject Index. Owing to the limitation of our knowledge, there must be mistakes and errors in the book and kindly oblige us with your valuable comments. At last but very important, we would like to express our appreciation to the full funding support from NRCGA and also many thanks to all the experts for their generous help during the compilation and publication of the book.

Editors

(National Research Center for Geoanalysis)

October, 2011

编写说明

本书汇集了国家地质实验测试中心科研人员 1978 ~ 2010 年发表的以测试中心（含原岩矿测试技术研究所）为标注单位的期刊、文集论文、国家标准文件和专（译）著等文献共计 1505 条。这些文献被编制成 3 个索引：年代索引、专题索引、作者索引。

编制一个研究单位、时间跨度达 33 年的专业文献索引是一个尝试。文献收集、表述、索引格式、编排既要符合本专业的实际和习惯，又要遵循索引工作的一般准则。为了方便读者更好地阅读和使用本书，以下对文献的收集、索引的编排格式和文献统计内容作出说明。

1 文献收集的说明

1.1 文献范围

本书所收集的文献包括：1978 ~ 2010 年以国家地质实验测试中心为署名单位的期刊、文集、国家标准文献和由国家地质实验测试中心人员个人署名出版的专著。由于单位名称的变更，这个时期早期发表的文献也有使用岩矿测试技术研究所、地质矿产部岩矿测试技术研究所、中国地质科学院岩矿测试技术研究所、中国地质科学院等单位名称，均列入本书统计范围。

1.2 文献主要来源

- 1) 中国期刊全文数据库（CJFD）。
- 2) 国家地质实验测试中心科技处统计的各年度科技人员呈报的文献。
- 3) 其他方式检索的相关文献。

2 年代索引的编写说明

年代索引是按文献发表的年代顺序编排的索引方式，是本书索引的基础。

- 1) 年代索引按照文献发表年代 1978 ~ 2010 年的顺序，依次编排。
- 2) 同年文献按第一作者姓和名的汉语拼音顺序编排。如果作者为双姓作者（如欧阳）按首字拼音编排；第一作者姓的汉语拼音相同时，按中文姓氏笔画排序；第一作者姓名的汉语拼音相同时，按第二作者姓名的汉语拼音顺序排列，以此类推；英文文献第一作者与中文文献第一作者姓的汉语拼音相同时，英文文献排在中文文献之后。

3) 索引编号说明：索引编号由两部分组成：年份 - 顺序号。

索引编号格式：× × × ×（年份） - ×（顺序号）

【实例】2009 - 28

【说明】表示 2009 年发表的文献，该年度在本书依次编排的顺序号为 28。

- 4) 年代索引文献格式说明：采用中英文对照。没有英文摘要的中文文献也给出作者和期刊（或出版社）的英文信息。

期刊文献

索引号 全部作者姓名
文献题名
期刊名称, 年, 卷(期): 起止页码

全部作者英文名(姓在前, 大写; 名在后, 首字母大写)
文献英文题名
期刊英文名称, 年, 卷(期): 起止页码

文集文献

索引号 全部作者姓名
文献题名. 文集题名, 作者姓名或单位名称
出版地: 出版社, 出版年份: 起止页码

全部作者英文名(姓在前, 大写; 名在后, 首字母大写)
文献英文题名. 文集英文题名, 作者英文姓名或单位英文名称
出版地(英文): 出版社(英文), 出版年份: 起止页码

专著

索引号 全部著者姓名
专著书名
出版地: 出版社, 出版年份: 起止页码

全部著者英文名(姓在前, 大写; 名在后, 首字母大写)
专著英文书名
出版地(英文): 出版社(英文), 出版年份: 起止页码

3 专题索引的编写说明

“中心”近年来研究与服务领域迅速扩展, 反映其成果的文献内容已远超出分析技术方法及岩矿分析应用等传统领域。为方便读者从不同专业角度查阅, 本书编制了专题索引。将专题索引分为综合性评述、技术方法、应用和工具性文献 4 类, 共设置 34 个专题: 综合性评述、X 射线荧光光谱(XRF)、原子发射光谱(AES)、质谱(MS)、原子吸收光谱(AAS)、原子荧光光谱(AFS)、电化学方法、光度法、色谱及其联用技术、分子光谱、中子活化分析、环境放射性测量技术、同位素及地质年代学技术、微区分析技术、化学法及其他分析技术、分析前处理技术, 岩石、矿石和地质调查样品分析, 化学态与形态分析、单矿物分析、贵金属分析、能源矿产及环境样品分析、环境地球化学研究应用、同位素及年代学技术的地质研究应用、现场分析技术及应用、生物医药研究应用、材料科学应用、古环境古气候研究应用、生物矿化研究应用、其他研究应用、标准物质与标准方法、数据处理及质量管理、实验室设备改造与研发、专(译)著和其他。

1) 技术方法文献是地质分析的基础性文献。对专题索引中的技术方法划分说明如下。

① 同步辐射 X 射线荧光光谱、质子(核)探针文献, 直接列入微区分析技术专题, 不再收入 X 射线荧光光谱专题中。

② 激光光谱、激光剥蚀-电感耦合等离子体质谱(LA-ICP-MS)文献, 直接列入微区分析技术

专题,不再收入相应的原子光谱、质谱技术专题中。

③ 同位素及年代学测量文献,直接列入同位素及地质年代学技术专题,不再收入相应的质谱技术专题中。

④ 色谱-质谱联用文献,直接列入色谱及其联用技术专题,不再收入相应的质谱技术专题中。

⑤ 拉曼光谱文献,直接列入分子光谱及其应用专题,不再收入微区分析技术专题。

2) 应用研究和工具类专题是根据文献内容和“中心”的工作实际设置的,有些具有明显的时间性和阶段性。这些专题中的不少文献是各技术方法的具体应用。

① 岩石矿石和地质调查样品分析是地质分析技术方法中最主要的应用领域和地质分析基本的服务方向,设立此专题是为了方便读者集中查阅。该专题中的许多文献来自各技术方法专题。

② 单矿物分析和贵金属分析是地质分析中比较特殊的领域,将这两个领域的文献列为专题,是便于读者查找。技术方法专题中的相关文献也含在该专题中。

③ 数据处理及质量管理、实验室设备改造与研发两个专题,其中有些文献来自各技术方法专题中的相关文献。

3) 专题索引格式:沿用年代索引的格式(包括索引号)。

4) 专题索引文献的编排顺序:34个技术专题中各文献按照年代索引编号排序。

4 作者索引的编写说明

作者索引是按作者查找文献的索引方式。由三部分组成:作者姓名(拼音)、文献索引编号和作者的文献总数。

作者索引编排格式:作者(姓大写拼音,名首字母大写) 文献索引编号 作者文献总数。

1) 作者索引按第一作者姓和名的汉语拼音顺序编排,双姓按首字,名按全拼。

2) 第一作者姓名的汉语拼音相同时,按第二作者姓名的汉语拼音顺序排列。以此类推。

3) 作者索引编号说明:采用年代索引和专题索引的索引编号。

4) 格式及说明:文献索引编号黑体者为第一作者或通讯作者的文献,索引编号中的(E)表示英文文献,(C-E)表示中-英文对照文献。

5 文献统计的编写说明

对全书收集的1505篇文献按照文献的年代分布、专题分布,作者的文献统计,文献的期刊分布,专(译)著、文集的专(译)著、文集和国家标准文件的分类作了初步统计。

文献的年代分布:按照年度和年代(每5年进行累加)对“中心”科技人员发表的中英文文献总数进行统计。

文献的专题分布:按34个专题统计各专题的文献总数,给出了各专题的年代分布和各年代的专题分布。

作者的文献统计:统计“中心”作者文献量的总体分布,在此基础上统计1978~1990年、1991~2000年、2001~2010年三个阶段不同时期文献量较多的作者的年度分布和这些作者文献的专题分布。对测试中心合作者和外籍合作者的文献量也进行了统计(在附录中给出)。

文献的期刊分布:统计文献来源期刊的总体数量,统计文献较多期刊的文献年代分布,并对专(译)著、文集和国家标准文件的出版社分布进行了统计。

Compiling Description

The book is a collection of 1505 articles written by National Research Center for Geoanalysis' s (NRCGA' s) scientists between 1978 and 2010, including literature published in journals and proceedings, national standards documents, books. These literature are compiled into three indexes, the article index arranged by chronology, the special subject index arranged by technology method and application field, and an author index.

It is a try to compile a professional literature index of NRCGA for 33 years. It is necessary to have a professional arrangement for literature collection, presentation mode, index format, to follow the indexing of general guidelines. For the convenient of readers, the compiling description for literature collection, presentation format of index and statistics methods is made as follows.

1 The Description of Literature Collection

1.1 The Literature Sources

This book covers the literature published in journals and proceedings, national standards documents, monographs and translations written by NRCGA' s scientists as first author or participants. As the unit name of NRCGA has changed, the author' s units in literature include Institute of Rock and Mineral Analysis, Institute of Rock and Mineral Analysis, Ministry of Geology and Mineral Resources of PRC, and Chinese Academy of Geological Sciences was also used.

1.2 The Main Sources of Literature

- (1) The literature were collected from China Journal Full-text Database (CJFD).
- (2) The literature were collected by the Department of Science & Technology of NRCGA.
- (3) In other ways.

2 The Compiling Description of Chronology Index

Chronology Index is an index arranged as the chronological order of literature published. It is the basis of three indexes in this book.

- (1) Chronology Index is arranged as the published year in the order of 1978 – 2010.
- (2) The literature published in the same year, are arranged in the order of Chinese pinyin of the first author. If the first name of the author is dual-name (e. g. , Ouyang), the literature are arranged in the order of Chinese pinyin of first word of first name. If the Chinese pinyin of first name of the first author is the same, the literature are arranged in the order of Chinese

alphabetical of first name. If Chinese pinyin of the first author's name is the same, the literature is arranged in the order of Chinese pinyin of the second author's name, and so on. If the first author of the English literature is same as Chinese pinyin of first name of the first author of Chinese literature, the English literature is arranged after the Chinese literature.

(3) The description of index number: index number consists of two parts, the published year and the sequence number.

The format of index number: Published year-Sequence number

[Example] 2009 - 28

[Description] The literature was published in 2009, the sequence number in this index is 28.

(4) The description of literature format in Chronology Index: The information of literature is given in Chinese and English. For Chinese literature without English abstract, there will give the information of author, journal or publisher in English.

Periodical Literature

Index number

All authors' name in Chinese

Literature title in Chinese

Journal title in Chinese, published year, volume (issue): beginning and ending page

All authors' name in English

Literature title in English

Journal title in English, published year, volume (issue): beginning and ending page

Proceedings' Literature

Index number

All authors' name in Chinese

Literature title in Chinese, proceedings' title, all editors' or agency's name

Publication location: publisher, published year: beginning and ending page

All authors' name in English

Literature title in English, proceedings' title in English, all editors' name or agency name in English

Publication location (in English): publisher (in English), published year: beginning and ending page

Monographs

Index number

All authors' name in Chinese

Monograph title in Chinese