

the journal of the franklin institute

vol 87 of 117 franklin institute

the journal of the franklin institute vol 87 of 117 franklin institute represents a significant historical and scientific record published by the Franklin Institute, one of America's oldest and most respected scientific organizations. This volume, part of a comprehensive series, offers a rich compilation of research papers, scientific discussions, and technological advancements from its era. The journal serves as a valuable resource for historians of science, engineers, and scholars interested in the evolution of scientific thought and industrial progress during the late 19th and early 20th centuries. Through detailed articles, experimental reports, and reviews, it sheds light on developments in physics, engineering, chemistry, and applied sciences. This article explores the background of the Franklin Institute, the scope and content of volume 87 in the 117-volume series, and its enduring importance in the scientific community. An in-depth overview of the prominent topics covered within this volume will also be provided, highlighting its role in documenting pivotal scientific milestones.

- Background of the Franklin Institute
- Overview of The Journal of the Franklin Institute Series
- Contents and Themes of Volume 87
- Scientific Contributions and Notable Papers
- Historical and Contemporary Significance

Background of the Franklin Institute

The Franklin Institute, established in 1824 in Philadelphia, Pennsylvania, is a premier organization dedicated to the promotion of science and engineering. Named after Benjamin Franklin, the institute has played a pivotal role in fostering scientific education and innovation in the United States. Its mission has historically encompassed conducting scientific research, publishing authoritative journals, and encouraging public engagement with technological advancements. The institute has hosted lectures, exhibitions, and awards that recognize outstanding achievements in science and technology. Over the decades, it became a hub for scientists, inventors, and educators, contributing to the dissemination of knowledge across various disciplines.

Overview of The Journal of the Franklin Institute Series

The Journal of the Franklin Institute is the institute's flagship publication, initiated in the early 19th century to document and share scientific progress. Spanning over a century and comprising more than one hundred volumes, this series chronicled a wide array of research and engineering developments. Volume 87 of 117 is a part of this extensive collection, capturing the scientific spirit and industrial innovations characteristic of its publication period. The journal's articles include peer-reviewed research, technical reports, theoretical analyses, and practical applications—making it a cornerstone of scientific literature. It contributed significantly to the diffusion of new ideas during the Industrial Revolution and beyond.

Contents and Themes of Volume 87

Volume 87 of the Journal of the Franklin Institute encompasses a broad spectrum of scientific and technical topics, reflecting the multidisciplinary nature of the publication. This volume includes studies in physics, mechanical engineering, electrical engineering, chemistry, and applied mathematics. The articles often combine theoretical insights with experimental data, illustrating the rigorous methodologies employed by researchers of the time. Key themes include the advancement of electrical machinery, improvements in steam power technology, and chemical processes relevant to industry. The volume also features discussions on emerging scientific principles and their practical implications.

Engineering Innovations

Several papers within volume 87 detail innovations in engineering design and machinery. These include advancements in steam engines, improvements in mechanical transmission systems, and early explorations in electrical generators and motors. The volume highlights the transition from traditional mechanical systems to those incorporating electrical power, marking a significant technological shift.

Physics and Experimental Research

Experimental physics is well represented, with articles focusing on electromagnetism, thermodynamics, and material properties. Researchers presented meticulous experiments aimed at understanding fundamental physical laws and their engineering applications. These studies helped lay the groundwork for later developments in electrical and thermal technologies.

Scientific Contributions and Notable Papers

Volume 87 contains several landmark papers that contributed to the advancement of science during its era. These publications often presented original research or comprehensive reviews of emerging technologies, influencing subsequent studies and industrial practices. Notable contributions include:

- Detailed analyses of electrical circuits and machinery performance
- Innovative methods for improving steam engine efficiency
- Studies on chemical reactions relevant to manufacturing processes
- Discussions on the application of thermodynamic principles to practical engineering problems

The rigorous peer-review process and the institute's commitment to scientific exactitude ensured that these papers were credible and influential.

Historical and Contemporary Significance

The journal's volume 87 holds enduring significance both as a historical document and as a resource for contemporary researchers. Historically, it captures a snapshot of scientific inquiry and industrial progress during a transformative period. It provides insight into the challenges faced by scientists and engineers, as well as their innovative solutions. For modern scholars, the volume offers a valuable reference for understanding the evolution of scientific concepts and technologies. Its detailed experimental data and theoretical discussions remain relevant for comparative studies and the history of science education. Furthermore, the journal exemplifies the role of scientific societies in knowledge dissemination and professional collaboration.

Frequently Asked Questions

What topics are covered in The Journal of the Franklin Institute Vol 87 of 117?

The Journal of the Franklin Institute Vol 87 of 117 covers a range of scientific and engineering topics including physics, chemistry, mechanics, and applied sciences relevant to the time of its publication.

When was The Journal of the Franklin Institute Vol 87 of 117 published?

Vol 87 of The Journal of the Franklin Institute corresponds to the year 1869.

Who were some notable contributors to The Journal of the Franklin Institute Vol 87?

Notable contributors during that period included prominent scientists and engineers of the 19th century, although specific names would require reviewing the volume's contents.

How can I access The Journal of the Franklin Institute Vol 87 of 117?

The journal is accessible through academic libraries, digital archives such as JSTOR, Google Books, or the Franklin Institute's own digital collections.

What is the historical significance of The Journal of the Franklin Institute Vol 87?

This volume reflects the scientific advancements and engineering knowledge of the late 1860s, providing insights into historical research and technological developments of that era.

Are there any landmark papers published in Vol 87 of The Journal of the Franklin Institute?

While specific landmark papers would require detailed review, volumes from this era often contained foundational research in mechanics and thermodynamics.

What is the format and structure of articles in The Journal of the Franklin Institute Vol 87?

Articles typically include abstracts, detailed experimental methods, results, discussions, and references, following the scientific publication standards of the 19th century.

Does The Journal of the Franklin Institute Vol 87 include illustrations or diagrams?

Yes, the journal frequently includes technical illustrations, diagrams, and tables to support the scientific content presented.

How has The Journal of the Franklin Institute evolved since Vol 87?

Since Vol 87, the journal has expanded in scope, improved peer review processes, and adapted to modern scientific communication standards, continuing to publish cutting-edge research.

Is The Journal of the Franklin Institute Vol 87 peer-reviewed?

During the 19th century, formal peer review was less standardized, but the journal maintained rigorous editorial oversight by experts in the field.

Additional Resources

1. *Advances in Electrical Engineering: Insights from the Franklin Institute Vol. 87*

This book compiles significant research papers and articles from the Journal of the Franklin Institute, Volume 87, focusing on breakthroughs in electrical engineering. It covers topics such as electromagnetism, circuit design, and early electrical machinery. The volume offers a historical perspective on the development of electrical technologies during the late 19th and early 20th centuries.

2. *Thermodynamics and Heat Transfer: Studies from the Franklin Institute*

Derived from the journal's Volume 87, this title explores fundamental and applied research in thermodynamics and heat transfer. The book discusses experimental methods, theoretical analyses, and practical applications in industrial processes. It serves as a valuable resource for engineers and historians interested in the evolution of thermal science.

3. *Mechanics and Material Science in the Era of the Franklin Institute*

Focusing on Volume 87, this book highlights key contributions to mechanics and material science published in the journal. It examines stress analysis, material properties, and mechanical innovations of the time. Readers gain an understanding of the scientific principles that underpinned the engineering advancements of the period.

4. *Early Innovations in Civil Engineering: Papers from the Franklin Institute Journal*

This collection presents landmark papers from Volume 87 related to civil engineering topics such as structural analysis, hydraulics, and construction materials. The book offers insights into the engineering challenges and solutions that shaped infrastructure development in the late 1800s. It is an essential reference for those studying the history of civil engineering.

5. *Mathematical Foundations in Engineering: Contributions of the Franklin Institute*

Based on research articles from Volume 87, this book delves into the mathematical techniques used in engineering problem-solving. Topics include differential equations, numerical methods, and mathematical modeling relevant to engineering disciplines. The volume reflects the integral role of mathematics in advancing engineering sciences.

6. Electromagnetic Theory and Applications: Franklin Institute Journal Highlights

This title focuses on the electromagnetic studies featured in Volume 87 of the journal. It covers theoretical developments, experimental findings, and practical applications in communication and power systems. The book provides a comprehensive overview of early electromagnetic research that influenced modern technology.

7. Innovations in Instrumentation and Measurement: Insights from the Franklin Institute

Highlighting Volume 87's articles on instrumentation, this book discusses the design and improvement of measurement devices and techniques. It addresses challenges in precision, accuracy, and standardization during the industrial era. The text is valuable for historians and engineers interested in the evolution of scientific instrumentation.

8. Fluid Mechanics and Hydrodynamics: Research from the Franklin Institute Journal

Compiled from Volume 87, this book explores studies on fluid behavior, flow dynamics, and hydraulic machinery. It presents theoretical analyses and experimental research that contributed to advancements in fluid mechanics. The volume is a key resource for understanding historical developments in this engineering field.

9. Historical Perspectives on Engineering Education: Lessons from the Franklin Institute

This book reviews articles from Volume 87 that discuss the state and progression of engineering education and professional practice. It examines curricula, training methods, and the role of institutions like the Franklin Institute in shaping engineers. The text provides context on how engineering knowledge was disseminated and evolved during the journal's publication era.

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