

EDITORIAL

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PREFACE

The present issue of *History of Science and Technology* brings together a diverse collection of studies devoted to the historical development of scientific knowledge, technological systems, research institutions, and socio-technical transformations across different regions of the world. The contributions included in this volume cover a broad chronological range, extending from pre-modern documentary cultures and early administrative systems to contemporary discussions concerning energy technologies, industrial innovation, and technological heritage. Together, they demonstrate the vitality of the history of science and technology as an interdisciplinary field and highlight the value of approaches that connect technical developments with political, social, economic, and cultural contexts.

A common feature shared by many of the studies presented in this issue is their attention to the institutions, communities, and environments within which scientific knowledge is produced and technological practices evolve. Rather than treating science and technology as autonomous domains, the authors examine the interaction between innovation and governance, expertise and power, material culture and social change. The issue therefore contributes to broader historiographical discussions concerning the circulation of knowledge, the construction of technological systems, and the role of science and technology in shaping historical processes.

The issue opens with Gennadiy V. Bulavko's article "*Sunlight harvested: A historical evolution of materials for photovoltaics, solar fuels, photocatalysis, and emerging light-charged devices*". The author examines the historical evolution of materials used for the conversion, storage, and utilization of solar energy. By



integrating the histories of photovoltaics, photocatalysis, solar fuels, and photo-assisted energy storage within a single analytical framework, the study identifies common technological trajectories and material-design principles that have shaped modern sustainable-energy research. Particularly valuable is the article's long-term perspective, which reveals how recurring questions of efficiency, durability, resource availability, and environmental sustainability have influenced successive generations of energy technologies. In doing so, the contribution demonstrates that many challenges currently associated with the green-energy transition have deep historical roots extending well beyond contemporary climate debates.

Questions of administration, information management, and state governance are addressed in the contribution by Sherzodjon Choriyev and his co-authors devoted to the archival system of the Bukhara Khanate. Their study demonstrates how documentary practices, chancery procedures, and recordkeeping systems functioned as essential instruments of political authority and administrative control in Central Asia. By reconstructing the organization of archival documentation and its practical functions, the authors contribute to a deeper understanding of information management in pre-modern states and expand the documentary history of the region.

The role of individuals whose scientific contributions remained largely invisible for decades is explored in Yolanda Muñoz Rey's article on women employed as calculators at *the Royal Observatory of the Navy in San Fernando*. The study contributes to the growing historiography of gender and science by restoring the place of women within the institutional history of astronomy and scientific labour.

The circulation of agricultural knowledge and the formation of professional scientific communities constitute the focus of Svitlana Nyzhnyk's contribution. Through the history of scientific meetings and congresses, the article reveals how mechanisms of communication and exchange shaped the development of agricultural science and facilitated the dissemination of expertise across institutional and regional boundaries. The study highlights the importance of scientific networks in transforming local knowledge into broader professional practices.

A different perspective on science and technology is offered next article in examination of the Chernobyl disaster. Rather than treating the accident solely as a technological failure, the author situates it within broader discussions of safety culture, organizational decision-making, and the governance of complex technological systems. The article demonstrates that the consequences of Chernobyl extended far beyond the immediate events of April 1986 and profoundly influenced international approaches to nuclear safety, risk management, and regulatory oversight. By linking the disaster to wider questions of institutional responsibility and technological governance, the author emphasizes its enduring significance for both the history of nuclear energy and contemporary debates concerning high-risk technologies.

The complex relationship between scientific knowledge and political repression is explored in the article by Marat Ybyraikhan and his co-authors devoted to *the Scientific Agricultural Experimental Station of Karlag*. Drawing upon archival sources, the authors reconstruct the activities of imprisoned scientists and reveal how research

continued to be conducted within one of the most restrictive environments of the Soviet era. Their findings contribute to a growing body of scholarship on repressed science and demonstrate the paradoxical coexistence of scientific productivity and political coercion within the Soviet camp system. The article also provides valuable biographical and institutional insights into the lives and work of researchers whose contributions remained largely absent from mainstream historical narratives.

The history of encyclopedic knowledge receives attention in the contribution by Mykola Zhelezniak and Oleksandr Ishchenko, who analyze the development of *the Istituto della Enciclopedia Italiana (Treccani)*. Their research demonstrates how encyclopedias function not only as repositories of knowledge but also as instruments that shape national and international representations of history, culture, and identity. Particularly noteworthy is the discussion of Ukraine-related entries within the *Treccani corpus*, which provides a useful perspective on the ways in which Ukrainian history and culture have been represented within European intellectual traditions. More broadly, the article illustrates how encyclopedic projects adapt to changing technological environments while preserving their role as authoritative sources of knowledge.

Agrarian modernization, state policy, and food security emerge as central themes in Pantelis Zoiopoulos's study of interwar Greece. By examining debates surrounding agricultural development and national self-sufficiency, the article highlights the important role played by scientific expertise in economic planning and rural transformation. The study further illustrates how agricultural policy became intertwined with broader questions of modernization, national development, and social stability.

Material culture and technological heritage are represented by the article of Zoya Chegusova, Mykhailo Bokotei and, Volodymyr Khyzhynskyi devoted to *Ukrainian huta glass*. Combining the history of technology with art-historical approaches, the authors reconstruct the development of glassmaking traditions and emphasize their significance within the broader history of Ukrainian craftsmanship and industrial culture. The study demonstrates that huta glass should be understood not only as an artistic phenomenon but also as a technological achievement shaped by local resources, production techniques, and professional knowledge. By integrating material, technological, and cultural perspectives, the article contributes to ongoing discussions concerning the preservation and interpretation of industrial and artistic heritage.

The interaction between technology and everyday life is examined in Rostyslav Konta's study of Mayak tape recorders in late Soviet Ukraine. Through the analysis of production practices, technological constraints, and patterns of consumption, the article demonstrates how sound-recording technologies became integrated into the social and cultural experience of late socialism. In doing so, it offers valuable insights into the relationship between industrial production and everyday technological practices.

Urban modernization and technological change form the central theme of Mohamad Khairul Anuar Mohd Rosli's contribution on the history of lighting in Kuala Lumpur. The transition from traditional forms of illumination to electrified urban

environments is presented as a process that transformed not only infrastructure but also daily routines and perceptions of urban space. The article thus connects the history of technology with broader questions of urban development and modernization.

The history of medicine is represented by the article of Vivi Sandra Sari and her co-authors, who examine the development of ophthalmological services in Indonesia. Their study highlights the institutional, professional, and social dimensions of healthcare modernization and demonstrates how medical knowledge became embedded within broader processes of societal transformation. The contribution also illustrates the importance of regional perspectives in understanding the global history of medicine.

The issue concludes with Andrii Tarasenko's contribution on compartmentalization and system ranking in armored vehicle design. By comparing engineering approaches developed in different countries, the author demonstrates how technological solutions emerged in response to common military challenges and how their legacy continues to influence contemporary armored-vehicle development. The article provides an important reminder that many current engineering concepts originate in earlier periods of technological experimentation and strategic competition.

Taken together, the articles published in this issue confirm that the history of science and technology remains one of the most dynamic and intellectually diverse areas of historical scholarship. The studies presented here examine not only inventions, discoveries, and technological artefacts, but also the institutions, communities, and social processes that enabled their emergence and dissemination. They demonstrate that scientific knowledge is always produced within specific historical circumstances and that technological systems are shaped as much by human choices and social conditions as by technical considerations alone.

The volume also illustrates the increasingly international character of research in the history of science and technology. Contributions from scholars representing different academic traditions and geographical regions provide opportunities for comparative perspectives and methodological exchange. Although the subjects examined range from pre-modern archival systems to contemporary energy technologies, many of the articles share a common concern with the ways in which knowledge is organized, transmitted, preserved, and applied in changing historical environments.

The Editorial Board hopes that the studies assembled in this issue will stimulate further scholarly discussion, encourage international cooperation, and inspire new research into the historical dimensions of science, technology, and innovation. By bringing together contributions that cross disciplinary, chronological, and geographical boundaries, this volume seeks to promote a deeper understanding of the complex processes through which scientific knowledge and technological systems have shaped human societies in the past and continue to influence them in the present.

The Editorial Board expresses its sincere gratitude to the authors, reviewers, and members of the editorial team whose efforts made the publication of this issue possible.