1. Record Nr. UNINA9910919647403321

Autore Newman William R

Titolo Traditions of Analysis and Synthesis / / edited by William R. Newman,

Jutta Schickore

Pubbl/distr/stampa Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2025

ISBN 9783031763984

303176398X

Edizione [1st ed. 2025.]

Descrizione fisica 1 online resource (404 pages)

Collana Archimedes, New Studies in the History and Philosophy of Science and

Technology, , 2215-0064; ; 73

Altri autori (Persone) SchickoreJutta

Disciplina 509

Soggetti Science - History

Philosophy - History Analytical chemistry

Mathematics

History

History of Science History of Philosophy Analytical Chemistry

History of Mathematical Sciences

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Nota di contenuto Chapter 1. Introduction: Traditions of Analysis and Synthesis (William

Newman) -- Chapter 2. The dark side of sunthesis? Fraud and substitutions in Graeco-Roman pharmacology (Laurence Totelin) -- Chapter 3. Spagyria, Scheidung, and Spagürlein: The Meanings of Analysis for Paracelsus (Didier Kahn and William R. Newman) -- Chapter 4. Chymistry goes Further: Sensible Principiata and Things Themselves over the Longue Durée (Joel Klein) -- Chapter 5. Philosophical Methods of Analysis and Synthesis from Medieval Scholasticism to Descartes and Hobbes (Helen Hattab) -- Chapter 6. A Fresh Look at Newton's "Method of Analysis and Synthesis" (Alan Shapiro) -- Chapter 7. Descartes, Leibniz, and Newton on analysis and synthesis (Niccolò Guicciardini) -- Chapter 8. Knowing Diseases and Medicines Forwards and Backwards: Analysis and Synthesis in Early

Modern Academic Medicine (Evan Ragland) -- Chapter 9. Cutting Through the Epistemic Circle: Analysis, Synthesis, and Method in Late Sixteenth- and Early Seventeenth-Century Anatomy (Tawrin Baker) -- Chapter 10. Taxis and Texture: Johann Daniel Major (1634-1693) on Spirits, Salts, and the Limits of Analysis (Vera Keller) -- Chapter 11. Phenomena and principles: Analysis-synthesis and reduction-deduction in 18th-century experimental physics (Friedrich Steinle) -- Chapter 12. Analysis and induction as methods of empirical inquiry (Jutta Schickore) -- Chapter 13. From Chemical Analysis to Analytical Chemistry in Germany, 1790–1862 (Peter Ramberg) -- Chapter 14. Questioning the symmetry between analysis and synthesis in chemical practices (Bernadette Bensaude-Vincent) -- Chapter 15. Contesting the Musical Ear: Hermann von Helmholtz, Gottfried Weber and Carl Stumpf Analyzing Mozart (Julia Kursell).

Sommario/riassunto

This open access book provides a fresh perspective on analysis and synthesis across several areas of inquiry. The two operations form a primary basis of modern laboratory science, ranging from the spectrographic analysis used in practically every scientific discipline today, to the naming of entire disciplines, such as synthetic organic chemistry. Despite their acknowledged significance, however, the history of analysis, synthesis, and their relations over the longue durée is poorly understood. Several volumes have been devoted to the history of analysis and synthesis in the sense that premodern mathematicians and philosophers used the terms, but very little work has been done on the tradition of material decomposition and recomposition and its relationship to mathematics and philosophy. The present volume brings together scholars in the history of medicine, mathematics, philosophy, chemistry, and alchemy to explore the ways in which these multiple disciplines understood and used analysis and synthesis as experimental, justificatory, and conceptual tools.