

1. Record Nr.	UNINA9911021145703321
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Titolo	Gold Deposits in Egypt : Geology, Settings, Types, Genesis and Spatiotemporal Distribution / / edited by Zakaria Hamimi, Richard J. Goldfarb, Biswajeet Pradhan, Yasser Abd El-Rahman, Abdel-Rahman Fowler, Amr Abdelnasser, Mohamed Abd El Monsef
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	3-031-75972-9
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (964 pages)
Collana	Sustainable Landscape Planning and Natural Resources Management, IEREK Interdisciplinary Series for Sustainable Development, , 2948-1929
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Disciplina	553.410962
Soggetti	Geology Mineralogy Geotechnical engineering Geotechnical Engineering and Applied Earth Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Tectonics and regional geology of the Egyptian Nubian Shield -- 2. Gold deposit types and settings: models and exploration methods -- 3. Gold exploration and mining in Egypt since Pharaohs era: a historical overview -- 4. An overview for gold mineralization in the Egyptian segment of the northern continuation of the East African Orogen -- 5. Gold in volcanogenic massive sulfide deposits in Egypt -- 6. Orogenic gold in Egypt -- 7. Exploring for gold in altered ultramafic rocks in Egypt: a case study from Abu Marawat area -- 8. Placer gold deposits in Egypt -- 9. Structural controls on gold ores in the Egyptian Nubian Shield -- 10. Detecting gold-bearing alteration zones using remote sensing techniques -- 11. Application of magnetic geophysical

methods for detecting and mapping gold-bearing zones in Egypt -- 12. Application of artificial intelligence in gold exploration in Egypt -- 13. Role of microorganisms in rehabilitation of ancient gold mines in Egypt -- 14. Development of the Sukari deposit: The first large-scale mine in the mid-East region -- 15. Exploring the dream of wealth in the Egyptian Eastern Desert: the impact of illegal gold prospecting.

Sommario/riassunto

This book aims at young generations of geoscientists, researches, and other professional specialists. The book is composed of a number of chapters addressing gold deposits in terms of their types, genesis, settings, and spatiotemporal distribution. Chapter 1 examines the tectonics and regional geology of the Egyptian Nubian Shield within the frame of the Arabian-Nubian Shield and the East African Orogen. Chapter 2 highlights gold deposit types and settings. Chapter 3 addresses the African Gold that is connecting north and south. Chapters 4 and 5 are dealing with ancient gold mining in Egypt and geographical analysis of the ancient Egyptian Turin Papyrus Map (1150 B.C). Chapter 6 reviews gold mineralization in the Egyptian segment of the northern continuation of the East African Orogen. Gold in volcanogenic massive sulfide deposits and orogenic gold deposits are presented in Chapters 7 and 8. The geologic setting and genesis of gold mineralization at the extreme SW- and S-Egyptian Eastern Desert are treated in Chapters 9 and 10. Chapters 11, 12, 16, and 17 demonstrate how to detect gold-bearing alteration zones in Egypt using remote sensing techniques, as well as how to recognize and map gold-bearing zones. Multi-stage hydrothermal processes at gold deposits, placer gold deposits, and gold deposits in Nasser High Dam Reservoir are given in Chapters 13, 14, and 15. Chapter 18 discusses the application of artificial intelligence in gold exploration. The Sukari Gold Deposit is dealt with in Chapter 19. Chapters 20 and 21 examine geochemical exploration and mineralogical characteristics of gold deposits and some gold mine tailings and their potential hazards. Chapter 22 is exploring the dream of wealth in the Egyptian Eastern Desert. The last chapters explore the role of microorganisms in the rehabilitation of ancient gold mines, Egyptian gold ore processing and extraction, and opportunities and challenges for gold investment in Egypt.
