

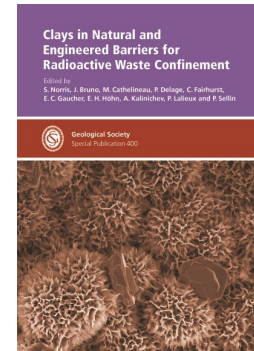
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Clays in Natural and Engineered Barriers for Radioactive Waste Confinement

Edited by S. Norris, J. Bruno, M. Cathelineau, P. Delage, C. Fairhurst, E.C. Gaucher, E.H. Höhn, A. Kalinichev, P. Lalieux and P. Sellin

This Special Publication contains 43 scientific studies presented at the 5th conference on 'Clays in natural and engineered barriers for radioactive waste confinement' held in Montpellier, France in 2012. The conference and this resulting volume cover all the aspects of clay characterization and behaviour considered at various temporal and spatial scales relevant to the confinement of radionuclides in clay, from basic phenomenological process descriptions to the global understanding of performance and safety at repository and geological scales. Special emphasis has been given to the modelling of processes occurring at the mineralogical level within the clay barriers.



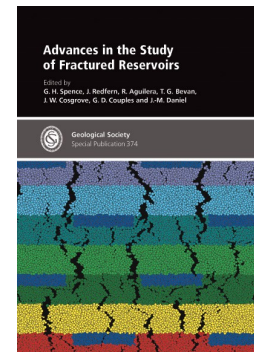
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Advances in the Study of Fractured Reservoirs

Edited by G.H. Spence, J. Redfern, R. Aguilera, T.G. Bevan, J.W. Cosgrove, G.D. Couples and J.-M. Daniel

Naturally fractured reservoirs constitute a substantial percentage of remaining hydrocarbon resources; they create exploration targets in otherwise impermeable rocks, including under-explored crystalline basement; and they can be used as geological stores for anthropogenic carbon dioxide. Their complex behaviour during production has traditionally proved difficult to predict, causing a large degree of uncertainty in reservoir development. The applied study of naturally fractured reservoirs seeks to constrain this uncertainty by developing new understanding, and is necessarily a broad, integrated, interdisciplinary topic. This book addresses some of the challenges and advances in knowledge, approaches, concepts, and methods used to characterize the interplay of rock matrix and fracture networks, relevant to fluid flow and hydrocarbon recovery. Topics include: describing, characterizing and identifying controls on fracture networks from outcrops, cores, geophysical data, digital and numerical models; geomechanical influences on reservoir behaviour; numerical modelling and simulation of fluid flow; and case studies of the exploration and development of carbonate, siliciclastic and metamorphic naturally fractured reservoirs.



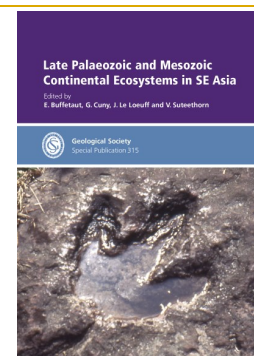
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Late Palaeozoic and Mesozoic Continental Ecosystems in SE Asia

Edited by E Buffetaut, G Cuny, J Le Loeuff, & V Suteethorn

Non-marine Late Palaeozoic and Mesozoic formations are widespread in mainland SE Asia. Although the first reports on fossils from some of these formations were published as early as the 1890s, it is only since 1980 that floras and faunas from the Permian, Triassic, Jurassic and Cretaceous of SE Asia have received the attention they deserve. Fieldwork in various parts of Thailand and Laos has revealed a succession of fossil assemblages that now allows a reconstruction of the evolution of continental ecosystems in that part of the world during the Late Palaeozoic and the Mesozoic. The first papers in this book present the geological background of these floral and faunal successions, as well as historical aspects of their discovery. Descriptions of new taxa and review papers deal with plants, sharks, bony fishes, turtles, crocodylians, dinosaurs and mammal-like reptiles. Papers about the Mesozoic palaeobiogeography, environments and climates of Asia conclude the volume.



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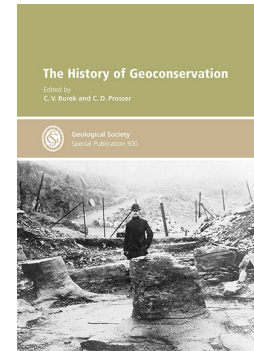


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The History of Geoconservation

Edited by C V Burek and C D Prosser

This book is the first to describe the history of geoconservation. It draws on experience from the UK, Europe and further afield, to explore topics including: what is geoconservation; where, when and how did it start; who was responsible; and how has it differed across the world? Geological and geomorphological features, processes, sites and specimens, provide a resource of immense scientific and educational importance. They also form the foundation for the varied and spectacular landscapes that help define national and local identity as well as many of the great tourism destinations. Mankind's activities, including contributing to enhanced climate change, pose many threats to this resource: the importance of safeguarding and managing it for future generations is now widely accepted as part of sustainable development. Geoconservation is an established and growing activity across the world, with more participants and a greater profile than ever before. This volume highlights a history of challenges, set-backs, successes and visionary individuals and provides a sound basis for taking geoconservation into the future.



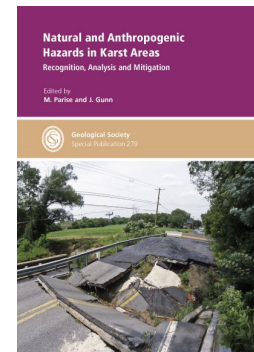
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Natural and Anthropogenic Hazards in Karst Areas: Recognition, Analysis and Mitigation

Edited by M Parise and J Gunn

The book presents an overview of the main hazards affecting karst, including collapse and subsidence phenomena, hydrological hazards and human-induced geohazards. Consideration is also given to the problems of geohazard management in karst. The geological and hydrological properties of karst terrains make them among the most fragile in the world and pose serious problems for land managers. Sustainable development in these terrains requires efforts to limit geohazards of anthropogenic origin and to recognize and mitigate against those of natural origin. Aimed at providing the reader with worldwide case studies, the contributions cover a range of geological and morphological settings. Geographically, the fourteen papers discuss very different karst areas, from North America, the Caribbean and Asia to several karst areas in Europe, including the British Isles, Spain, France and Italy.



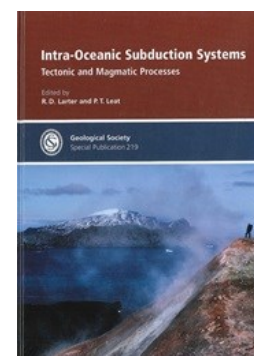
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Intra-Oceanic Subduction Systems: Tectonic and Magmatic Processes

Edited by R. Larter and P. T. Leat

Recycling of oceanic plate back into the Earth's interior at subduction zones is one of the key processes in Earth evolution. Volcanic arcs, which form above subduction zones, are the most visible manifestations of plate tectonics, the convection mechanism by which the Earth loses excess heat. They are probably also the main location where new continental crust is formed, the so-called 'subduction factory'. About 40% of modern subduction zones on Earth are intra-oceanic. These subduction systems are generally simpler than those at continental margins as they commonly have a shorter history of subduction and their magmas are not contaminated by ancient sialic crust. They are therefore the optimum locations for studies of mantle processes and magmatic addition to the crust in subduction zones.



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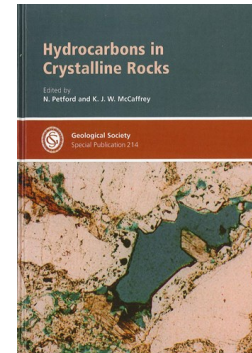
Hydrocarbons in Crystalline Rocks Edited by T.J. Wright, A. Ayele, D.J. Ferguson, T. Kidane and C. Vye-Brown

Edited by N Petford and K J W McCaffrey

'Commercial oil deposits in basement rocks are not geological "accidents" but are oil accumulations which obey all the rules of oil sourcing, migration and entrapment; therefore in areas of not too deep basement, oil deposits within basement rocks should be explored with the same professional skill and zeal as accumulations in the overlying sediments', Landes et al. (1960), AAPG Bulletin.

Given that most OPEC countries are currently at or within 5% of production capacity, there is a growing need to look for 'new oil' and other hydrocarbons in non-traditional sources.

While oil and gas fields in crystalline basement are still discovered mostly by accident, as shown in this book, such reservoirs can be very prolific, especially if the basement rock is highly faulted or fractured. The chapters in this volume cover a diverse range of topics related broadly to the theme of hydrocarbons in crystalline rocks, and challenge explorationists' definition of basement rock, which needs to be less narrow and more responsive to new geological ideas.



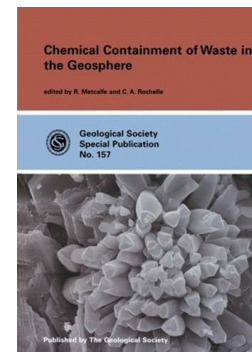
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Chemical Containment of Waste in the Geosphere

Edited by R. Metcalfe and C. A. Rochelle

Chemical Containment within the Geosphere deals with chemical processes within the geosphere that may be harnessed to contain a wide range of wastes, a topic of major importance for sound environmental management. Both technical and philosophical issues concerning waste containment are considered. The book contains contributions from experts in waste containment technologies and covers a number of issues, ranging from the regulation of radioactive waste management to the design of liners for landfills and the management of mine wastes. An introductory contribution highlights the underlying principles that are common to all forms of waste management by geological means, and that rely to some extent upon chemical containment. The remainder of the book is divided into six sections: 1. The place of chemical containment in regulatory frameworks. 2. Chemical containment properties of the deep geosphere. 3. The role of chemical containment in clay barriers. 4. Chemical containment properties of cementitious engineering barriers. 5. Containment of metalliferous wastes. 6. Investigative methods. The book will appeal to all those who are concerned with technical aspects of waste management. Established researchers will benefit from the multi-disciplinary character of the volume. Regulators and planners concerned with waste management will be able to gain an overview of major technical issues relevant to waste containment. The volume will also be a useful source for post-graduate level students of environmental science, waste management and geochemistry.



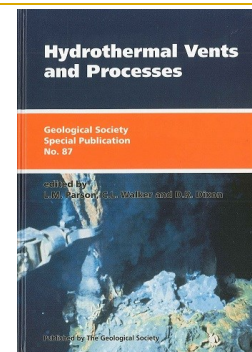
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Hydrothermal Vents and Processes

Edited by L.M. Parson, C.L. Walker and D.R. Dixon

Hydrothermal venting at mid-ocean ridges has become one of the fastest-growing areas of interest in the marine geosciences since their discovery at the beginning of the 1980s. Marine geologists, geochemists and biologists are beginning to unravel the processes that generate and focus these high-temperature, chemically charged fluid exhalations, and those that control the colonization and ecology of the bizarre gamut of fauna and flora resident at these sites. Researchers, on the edge of understanding how volcanic and tectonic processes interact to control fluid flow, can show how they can predict the likely occurrence of hydrothermal systems throughout the world ridge system, and how the biomass has flourished in such inhospitable settings. Indeed, the very isolation of the communities has led workers to suggest that their restricted evolutionary path has direct significance for studies of the early origins of life itself.



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