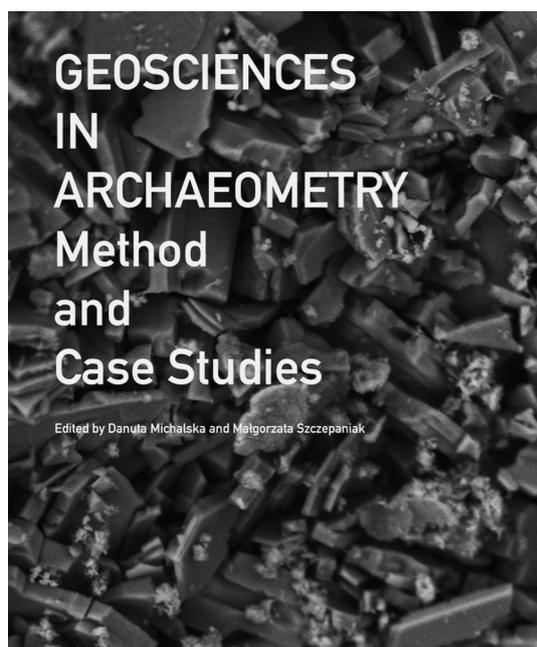


## Book reviews

**Geoscience in Archaeometry. Methods and case studies.** D. Michalska and M. Szczepaniak (eds.), 2014. Bogucki Wydawnictwo Naukowe, Poznań. 195 pages. Hardcover: price EUR 50.00. ISBN 978-83-7986-046-3.



Ever since the day Imhotep introduced rock material into architecture (i.e., in Djoser's step pyramid at Saqqara), thus lending stone a special transcendental meaning, stone has been in continuous use to the present day. To Imhotep, this material was eternal and symbolised a bridge to eternity open to human beings whose dead bodies were hidden away in tombs. His ideas contrasted with the fragility of the body itself and its eternal mental 'counterpart' – the soul. *Non omnis moriar*. Each of us is part of a continuous chain. Stone pyramids guaranteed eternal life to that part of the human being that is as eternal as those rocks. Consequently, stone also symbolised the continuity of time. Since Imhotep, people have used stones to express features such as eternity, beauty and power. However, only non-geologists equate stone with eternity or see it as an unchangeable, or hardly changeable, material. Geologists know that with time and process every rock will eventually change its composition. Some factors will add to its resistance, while others will

do exactly the opposite. Human activity, heavy industrialisation and increased air pollution are just a few of the factors that contribute to weathering and deterioration processes. To slow down these processes, we must be able to recognise study and counteract the mechanisms of change.

The present book is an excellent guide for combining all of the above-mentioned 'needs'. It is dedicated to Professor Janusz Skoczylas, an eminent specialist in rock deterioration research whose extremely important research was, and still is, in the vanguard of the field. The preservation and conservation of monuments and other cultural heritage is critical to understanding our civilisation; current projects include new methodologies and data. The University of Adam Mickiewicz at Poznań ranks amongst the most important research centres in this field of research; it is headed by Professor Skoczylas. This tome also comprises two invited papers by him that offer clear and long-term overviews of the most important issues (i.e., interdisciplinary collaboration and achievements of archaeometry). I am of the opinion that these two chapters should have been placed at the beginning.

Six female authors, all specialists of stony material research, present the centre's achievements in nine chapters. Research presented illustrates a broad spectrum of methodologies used in geosciences. Geosciences employ physical, chemical, geochemical, mineralogical, petrological and mathematical modelling, to name but a few. The book is not a regular handbook, which is more of an advantage than a disadvantage. To present a single method, or one method after another, is useless in the field of archaeometry, which requires a multi-method approach to problem solving. Carefully selected case studies help explain how to combine methods to achieve a suitable data set for analysis of previous processes and resulting changes. The tome takes a closer look at the problem of sedimentary rock deterioration, with the emphasis on those most frequently used, i.e., sandstone, limestone and

marble. It offers insights into the question of provenance, which arises when some structural sections must be replaced, suggesting to look for original materials or stones similar to those originally used. Although the primary emphasis is on stony materials, two other important issues are addressed as well. The research into mortars and pigments is relevant to broader issues relating to the protection of cultural heritage. Interesting cases, including investigations of organics, are specified. Another interesting contribution is that on mortar dating. The last chapter is devoted to pigments. Again a subject for which there is no single-method solution.

It is good that this book has now appeared on the market. It fills a gap and provides an opportunity to become acquainted with research issues, for professionals and beginners alike. It is written in an extremely communicative way, despite the use of professional jargon. I recommend it to anyone who is affiliated to the problems of protection of our cultural heritage, but also to geologists, geochemists, petrologists and many, many others.

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