

ARCLG347: Laboratory and instrumental skills in archaeological science

[View Online](#)

[1]

Abe, Y. et al. 2009. On-site analysis of archaeological artifacts excavated from the site on the outcrop at Northwest Saqqara, Egypt, by using a newly developed portable fluorescence spectrometer and diffractometer. *Analytical and Bioanalytical Chemistry*. 395, 7 (2009), 1987–1996. DOI:<https://doi.org/10.1007/s00216-009-3141-x>.

[2]

Adriaens, A. 2005. Non-destructive analysis and testing of museum objects: An overview of 5 years of research. *Spectrochimica Acta Part B: Atomic Spectroscopy*. 60, 12 (Dec. 2005), 1503–1516. DOI:<https://doi.org/10.1016/j.sab.2005.10.006>.

[3]

Alexander Bentley, R. 2006. Strontium Isotopes from the Earth to the Archaeological Skeleton: A Review. *Journal of Archaeological Method and Theory*. 13, 3 (Sep. 2006), 135–187. DOI:<https://doi.org/10.1007/s10816-006-9009-x>.

[4]

Arthur M. Sackler Colloquia of the National Academy of Sciences and National Academy of Sciences (U.S.) 2005. *Scientific examination of art: modern techniques in conservation and analysis* : National Academy of Sciences, Washington, D.C., March 19-21, 2003. National Academies Press.

[5]

Artioli, G. and Angelini, I. 2010. *Scientific methods and cultural heritage: an introduction to the application of materials science to archaeometry and conservation science*. Oxford

University Press.

[6]

Baxter, M.J. 1994. Exploratory multivariate analysis in archaeology. Edinburgh University Press.

[7]

Baxter, M.J. 2003. Statistics in archaeology. Arnold.

[8]

Baxter, M.J. and Buck, C.E. 2000. Data handling and statistical analysis. Modern analytical methods in art and archaeology. Wiley. 681–746.

[9]

BAXTER, M.J. and FREESTONE, I.C. 2006. LOG-RATIO COMPOSITIONAL DATA ANALYSIS IN ARCHAEOOMETRY*. Archaeometry. 48, 3 (2006), 511–531.
DOI:<https://doi.org/10.1111/j.1475-4754.2006.00270.x>.

[10]

Ben-David, M. and Flaherty, E.A. 2012. Stable isotopes in mammalian research: a beginner's guide. Journal of Mammalogy. 93, 2 (Apr. 2012), 312–328.
DOI:<https://doi.org/10.1644/11-MAMM-S-166.1>.

[11]

Bowman, S. 1991. Science and the past. British Museum Press.

[12]

Brothwell, D.R. and Pollard, A.M. 2001. Handbook of archaeological sciences. John Wiley.

[13]

Brothwell, D.R. and Pollard, A.M. 2001. Handbook of archaeological sciences. John Wiley.

[14]

Chaplin, T.D. et al. 2010. A combined Raman microscopy, XRF and SEM-EDX study of three valuable objects - A large painted leather screen and two illuminated title pages in 17th century books of ordinances of the Worshipful Company of Barbers, London. Journal of Molecular Structure. 976, 1-3 (Jul. 2010), 350-359.
DOI:<https://doi.org/10.1016/j.molstruc.2010.03.042>.

[15]

Charalambous, A. et al. 2014. A compositional study of Cypriot bronzes dating to the Early Iron Age using portable X-ray fluorescence spectrometry (pXRF). Journal of Archaeological Science. 46, (Jun. 2014), 205-216. DOI:<https://doi.org/10.1016/j.jas.2014.03.006>.

[16]

Charlton, M.F. et al. 2012. Investigating the production provenance of iron artifacts with multivariate methods. Journal of Archaeological Science. 39, 7 (2012), 2280-2293.

[17]

Chippindale, C. 2006. Colleagues, talking, writing, publishing. Handbook of archaeological methods. Altamira Press. 1339-1371.

[18]

Ciliberto, E. and Spoto, G. 2000. Modern analytical methods in art and archaeology. Wiley.

[19]

Colombo, C. et al. 2011. Non-invasive approach in the study of polychrome terracotta

sculptures: employment of the portable XRF to investigate complex stratigraphy. *X-Ray Spectrometry*. 40, 4 (Jul. 2011), 273–279. DOI:<https://doi.org/10.1002/xrs.1336>.

[20]

Contrey, R.M. et al. 2014. Calibration of a portable X-ray fluorescence spectrometer in the analysis of archaeological samples using influence coefficients. *Geochemistry: Exploration, Environment, Analysis*. 14, 3 (2014).

[21]

Cotte, M. et al. 2009. Recent applications and current trends in Cultural Heritage Science using synchrotron-based Fourier transform infrared micro-spectroscopy. *Comptes Rendus Physique*. 10, 7 (2009), 590–600. DOI:<https://doi.org/10.1016/j.crhy.2009.03.016>.

[22]

De Atley, S.P. and Bishop, R.L. 1991. Toward an integrated interface for archaeology and archaeometry. *The ceramic legacy of Anna O. Shepard*. University Press of Colorado. 358–381.

[23]

De Benedetto, G.E. et al. 2002. Infrared spectroscopy in the mineralogical characterization of ancient pottery. *Journal of Cultural Heritage*. 3, 3 (2002), 177–186. DOI:[https://doi.org/10.1016/S1296-2074\(02\)01178-0](https://doi.org/10.1016/S1296-2074(02)01178-0).

[24]

Degryse, P. 2013. Isotope-Ratio Techniques in Glass Studies. *Modern Methods for Analysing Archaeological and Historical Glass*. K. Janssens, ed. John Wiley & Sons Ltd. 235–245.

[25]

Degryse, P. et al. 2009. *Isotopes in vitreous materials*. Leuven University Press.

[26]

Demortier, G. et al. 2000. Ion beam study of art and archaeological objects. Office for Official Publications of the European Communities.

[27]

Derrick, M.R. et al. 1999. Infrared Spectroscopy in Conservation Science - infrared spectroscopy. Getty Conservation Institute.

[28]

Dran, J.-C. et al. 2004. Ion beam analysis of art works: 14 years of use in the Louvre. Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 219–220, (Jun. 2004), 7–15.
DOI:<https://doi.org/10.1016/j.nimb.2004.01.019>.

[29]

Drennan, R.D. 2009. Statistics for archaeologists: a commonsense approach. Springer.

[30]

Dungworth, D. and Girbal, B. 2011. Walmer Castle, Deal, Kent: Analysis of Window Glass. English Heritage Research Department Report Series. 2011, 2 (2011).

[31]

Dussubieux, L. and Walder, H. 2015. Identifying American native and European smelted coppers with pXRF: a case study of artifacts from the Upper Great Lakes region. Journal of Archaeological Science. 59, (Jul. 2015), 169–178.
DOI:<https://doi.org/10.1016/j.jas.2015.04.011>.

[32]

Edwards, H.G.M. et al. 2005. Raman spectroscopy in archaeology and art history. Royal Society of Chemistry.

[33]

Eiland, M.L. and Williams, Q. 2001. Investigation of Islamic ceramics from Tell Tuneinir using X-ray diffraction. *Geoarchaeology*. 16, 8 (2001), 875–903.
DOI:<https://doi.org/10.1002/gea.1025>.

[34]

Eliyahu-Behar, A. et al. 2008. An integrated approach to reconstructing primary activities from pit deposits: iron smithing and other activities at Tel Dor under Neo-Assyrian domination. *Journal of Archaeological Science*. 35, 11 (Nov. 2008), 2895–2908.
DOI:<https://doi.org/10.1016/j.jas.2008.06.004>.

[35]

Fletcher, M. and Lock, G.R. 1991. *Digging numbers: elementary statistics for archaeologists*. Oxford University Committee for Archaeology.

[36]

Forster, N. et al. 2011. Non-destructive analysis using PXRF: methodology and application to archaeological ceramics. *X-Ray Spectrometry*. 40, 5 (Sep. 2011), 389–398.
DOI:<https://doi.org/10.1002/xrs.1360>.

[37]

Frahm, E. 2013. Is obsidian sourcing about geochemistry or archaeology? A reply to Speakman and Shackley. *Journal of Archaeological Science*. 40, 2 (Feb. 2013), 1444–1448.
DOI:<https://doi.org/10.1016/j.jas.2012.10.001>.

[38]

Frahm, E. 2013. Silo science and portable XRF in archaeology: a response to Speakman and Shackley. *Journal of Archaeological Science*. 40, 2 (Feb. 2013), 1435–1443.
DOI:<https://doi.org/10.1016/j.jas.2012.09.033>.

[39]

Frahm, E. 2013. Validity of 'off-the-shelf' handheld portable XRF for sourcing Near Eastern

obsidian chip debris. *Journal of Archaeological Science*. 40, 2 (Feb. 2013), 1080–1092.
DOI:<https://doi.org/10.1016/j.jas.2012.06.038>.

[40]

Frahm, E. and Doonan, R.C.P. 2013. The technological versus methodological revolution of portable XRF in archaeology. *Journal of Archaeological Science*. 40, 2 (Feb. 2013), 1425–1434. DOI:<https://doi.org/10.1016/j.jas.2012.10.013>.

[41]

Freestone, I.C. et al. 2003. Strontium Isotopes in the Investigation of Early Glass Production: Byzantine and Early Islamic Glass from the Near East*. *Archaeometry*. 45, 1 (Feb. 2003), 19–32. DOI:<https://doi.org/10.1111/1475-4754.00094>.

[42]

Freestone, I.C. and Middleton, A.P. 1987. Mineralogical applications of the analytical SEM in archaeology. *Mineralogical Magazine*. 51, (1987), 21–31.

[43]

Gauss, R.K. et al. 2013. The Early Bronze Age settlement of Fidvár, Vráble (Slovakia): reconstructing prehistoric settlement patterns using portable XRF. *Journal of Archaeological Science*. 40, 7 (Jul. 2013), 2942–2960.
DOI:<https://doi.org/10.1016/j.jas.2013.01.029>.

[44]

Giumlia-Mair, A. et al. 2010. Surface characterisation techniques in the study and conservation of art and archaeological artefacts: a review. *Materials Technology*. 25, 5 (Nov. 2010), 245–261. DOI:<https://doi.org/10.1179/175355510X12850784228001>.

[45]

Goffer, Z. 2007. *Archaeological chemistry*. Wiley.

[46]

Goren, Y. et al. 2011. Non-destructive provenance study of cuneiform tablets using portable X-ray fluorescence (pXRF). *Journal of Archaeological Science*. 38, 3 (Mar. 2011), 684–696. DOI:<https://doi.org/10.1016/j.jas.2010.10.020>.

[47]

Grave, P. et al. 2012. Non-destructive pXRF of mafic stone tools. *Journal of Archaeological Science*. 39, 6 (Jun. 2012), 1674–1686. DOI:<https://doi.org/10.1016/j.jas.2011.11.011>.

[48]

Hamilton, E. 2004. The four scales of technical analysis; or 'how to make archaeometry more useful. Exploring the role of analytical scale in archaeological interpretation. *Archaeopress*. 45–48.

[49]

Hancock, R.G.V. 2000. Elemental analysis. *Modern analytical methods in art and archaeology*. Wiley. 11–20.

[50]

HAUSTEIN, M. et al. 2010. TIN ISOTOPY-A NEW METHOD FOR SOLVING OLD QUESTIONS. *Archaeometry*. 52, 5 (Oct. 2010), 816–832. DOI:<https://doi.org/10.1111/j.1475-4754.2010.00515.x>.

[51]

Heginbotham, A. et al. 2010. An Evaluation of inter-laboratory reproducibility for quantitative XRF of historic copper Alloys. In *Metal 2010. Proceedings of the International Conference on Metal Conservation*, Charleston, South Carolina, USA, October 11-15, 2010 (2010), 178–188.

[52]

Hein, A. et al. 2002. Standardisation of elemental analytical techniques applied to provenance studies of archaeological ceramics: an inter laboratory calibration study. *The*

Analyst. 127, 4 (Apr. 2002), 542–553. DOI:<https://doi.org/10.1039/b109603f>.

[53]

Henderson, J. 1989. Scientific analysis in archaeology and its interpretation. Oxford University Committee for Archaeology, Institute of Archaeology.

[54]

Henderson, J. 2000. The science and archaeology of materials: an investigation of inorganic materials. Routledge.

[55]

Hunt, A.M.W. and Speakman, R.J. 2015. Portable XRF analysis of archaeological sediments and ceramics. *Journal of Archaeological Science*. 53, (Jan. 2015), 626–638. DOI:<https://doi.org/10.1016/j.jas.2014.11.031>.

[56]

Ingo, G.M. et al. 2006. Combined use of SEM-EDS, OM and XRD for the characterization of corrosion products grown on silver roman coins. *Applied Physics A*. 83, 4 (2006), 493–497. DOI:<https://doi.org/10.1007/s00339-006-3533-0>.

[57]

Janssens, K.H.A. 2011. Modern methods for analysing archaeological and historical glass. John Wiley & Sons Inc.

[58]

Janssens, K.H.A. and Grieken, R. van 2004. Non-destructive microanalysis of cultural heritage materials. Elsevier.

[59]

Jones, A. 2001. Archaeological theory and scientific practice. Cambridge University Press.

[60]

Jones, A. 2004. Archaeometry and materiality: materials-based analysis in theory and practice*. *Archaeometry*. 46, 3 (2004), 327–338.
DOI:<https://doi.org/10.1111/j.1475-4754.2004.00161.x>.

[61]

Kearns, T. et al. 2010. Metal to mould: alloy identification in experimental casting moulds using XRF. *Historical metallurgy: journal of the Historical Metallurgy Society*. 44, 1 (2010), 48–58.

[62]

Killick, D. 1997. Archaeology and archaeometry: From casual dating to a meaningful relationship? *Antiquity*. 71, 273 (1997), 518–524.

[63]

Killick, D. 2015. The awkward adolescence of archaeological science. *Journal of Archaeological Science*. 56, (Apr. 2015), 242–247.
DOI:<https://doi.org/10.1016/j.jas.2015.01.010>.

[64]

Kovacs, R. et al. 2009. Characterization of calibration materials for trace element analysis and fingerprint studies of gold using LA-ICP-MS. *Journal of Analytical Atomic Spectrometry*. 24, 4 (2009). DOI:<https://doi.org/10.1039/b819685k>.

[65]

Lambert, J.B. 1997. *Traces of the past: unraveling the secrets of archaeology through chemistry*. Addison-Wesley.

[66]

LEE-THORP, J.A. 2008. ON ISOTOPES AND OLD BONES*. *Archaeometry*. 50, 6 (Dec. 2008), 925–950. DOI:<https://doi.org/10.1111/j.1475-4754.2008.00441.x>.

[67]

Liu, S. et al. 2012. Silk Road glass in Xinjiang, China: chemical compositional analysis and interpretation using a high-resolution portable XRF spectrometer. *Journal of Archaeological Science*. 39, 7 (Jul. 2012), 2128–2142. DOI:<https://doi.org/10.1016/j.jas.2012.02.035>.

[68]

Martini, M. et al. 2004. *Physics methods in archaeometry*. IOS Press.

[69]

Martinón-Torres, M. et al. 2014. Forty Thousand Arms for a Single Emperor: From Chemical Data to the Labor Organization Behind the Bronze Arrows of the Terracotta Army. *Journal of Archaeological Method and Theory*. 21, 3 (Sep. 2014), 534–562. DOI:<https://doi.org/10.1007/s10816-012-9158-z>.

[70]

Martinón-Torres, M. et al. 2012. Metallic encounters in Cuba: The technology, exchange and meaning of metals before and after Columbus. *Journal of Anthropological Archaeology*. 31, 4 (Dec. 2012), 439–454. DOI:<https://doi.org/10.1016/j.jaa.2012.03.006>.

[71]

Martinón-Torres, M. 2008. Why should archaeologists take history and science seriously? *Archaeology, history and science: integrating approaches to ancient materials*. Left Coast Press. 15–36.

[72]

Martinón-Torres, M. and Killic, D.C. 2015. *Archaeological Theories and Archaeological Sciences*. The Oxford Handbook of Archaeological Theory. A. Gardner et al., eds.

[73]

Martinón-Torres, M. and Rehren, T. 2008. Archaeology, history and science: integrating approaches to ancient materials. Left Coast Press.

[74]

Martinón-Torres, M. and Uribe-Villegas, M.A. 2015. The prehistoric individual, connoisseurship and archaeological science: The Muisca goldwork of Colombia. *Journal of Archaeological Science*. 63, (Nov. 2015), 136–155.
DOI:<https://doi.org/10.1016/j.jas.2015.08.014>.

[75]

Martinón-Torres, M. and Uribe-Villegas, M.A. 2015. The prehistoric individual, connoisseurship and archaeological science: The Muisca goldwork of Colombia. *Journal of Archaeological Science*. 63, (Nov. 2015), 136–155.
DOI:<https://doi.org/10.1016/j.jas.2015.08.014>.

[76]

Milić, M. 2014. PXRF characterisation of obsidian from central Anatolia, the Aegean and central Europe. *Journal of Archaeological Science*. 41, (Jan. 2014), 285–296.
DOI:<https://doi.org/10.1016/j.jas.2013.08.002>.

[77]

Moreau, J.-F. 2009. Proceedings: ISA 2006 : 36th International Symposium on Archaeometry : 2-6 May 2006, Quebec City, Canada. CELAT, Université Laval.

[78]

Nazaroff, A.J. et al. 2010. Assessing the applicability of portable X-ray fluorescence spectrometry for obsidian provenance research in the Maya lowlands. *Journal of Archaeological Science*. 37, 4 (Apr. 2010), 885–895.
DOI:<https://doi.org/10.1016/j.jas.2009.11.019>.

[79]

Nesse, W.D. 2004. Introduction to optical mineralogy. Oxford University Press.

[80]

Nicholas, M. and Manti, P. 15AD. Testing the applicability of handheld portable XRF to the characterisation of archaeological copper alloys. ICOM-CC 17th Triennial Conference Preprints, Melbourne (15AD).

[81]

Ogburn, D. et al. 2013. Evaluating effects of chemical weathering and surface contamination on the in situ provenance analysis of building stones in the Cuzco region of Peru with portable XRF. *Journal of Archaeological Science*. 40, 4 (Apr. 2013), 1823–1837. DOI:<https://doi.org/10.1016/j.jas.2012.09.023>.

[82]

Olsen, S.L. 1988. Scanning electron microscopy in archaeology. B.A.R.

[83]

Orfanou, V. and Rehren, Th. 2015. A (not so) dangerous method: pXRF vs. EPMA-WDS analyses of copper-based artefacts. *Archaeological and Anthropological Sciences*. 7, 3 (Sep. 2015), 387–397. DOI:<https://doi.org/10.1007/s12520-014-0198-z>.

[84]

Orton, C. 2000. Sampling in archaeology. Cambridge University Press.

[85]

Orton, Clive 1980. Mathematics in archaeology. Collins.

[86]

Parkes, P.A. 1986. Current scientific techniques in archaeology. Croom Helm.

[87]

Pollard, A.M. et al. 2007. Analytical chemistry in archaeology. Cambridge University Press.

[88]

Pollard, A.M. et al. 2017. Archaeological chemistry. Royal Society of Chemistry.

[89]

Potts, P.J. et al. 1997. The Bulk Analysis of Silicate Rocks by Portable X-Ray Fluorescence: Effect of Sample Mineralogy in Relation to the Size of the Excited Volume. *Geostandards and Geoanalytical Research*. 21, 1 (Jun. 1997), 29–41.
DOI:<https://doi.org/10.1111/j.1751-908X.1997.tb00529.x>.

[90]

Proceedings of the 34th International Symposium on Archaeometry: 2006.
<http://ifc.dpz.es/publicaciones/ebooks/id/2610>.

[91]

Rehren, T. 2001. Qantir-Piramesses and the organisation of the Egyptian glass industry. The social context of technological change: Egypt and the Near East, 1650-1550 B.C. : proceedings of a conference held at St Edmund Hall, Oxford, 12-14 September 2000. Oxbow. 223–138.

[92]

Ricciardi, P. et al. 2009. A non-invasive study of Roman Age mosaic glass tesserae by means of Raman spectroscopy. *Journal of Archaeological Science*. 36, 11 (2009), 2551–2559. DOI:<https://doi.org/10.1016/j.jas.2009.07.008>.

[93]

Sand-Jensen, K. 2007. How to write consistently boring scientific literature. *Oikos*. 116, 5

(2007), 723–727. DOI:<https://doi.org/10.1111/j.0030-1299.2007.15674.x>.

[94]

Sax, M. et al. 2008. The origins of two purportedly pre-Columbian Mexican crystal skulls. *Journal of Archaeological Science*. 35, 10 (Oct. 2008), 2751–2760. DOI:<https://doi.org/10.1016/j.jas.2008.05.007>.

[95]

Scott, R.B. et al. 2015. A methodology for qualitative archaeometallurgical fieldwork using a handheld X-ray fluorescence spectrometer. *STAR: Science & Technology of Archaeological Research*. 1, 2 (Dec. 2015), 70–80. DOI:<https://doi.org/10.1080/20548923.2016.1183941>.

[96]

Scott, R.B. et al. 2016. Quantitative Chemical Analysis of Archaeological Slag Material Using Handheld X-ray Fluorescence Spectrometry. *Applied Spectroscopy*. 70, 1 (Jan. 2016), 94–109. DOI:<https://doi.org/10.1177/0003702815616741>.

[97]

Shackley, M. 2011. An introduction to X-Ray Fluorescence (XRF) analysis in archaeology. *X-ray fluorescence spectrometry (XRF) in geoarchaeology*. Springer. 7–44.

[98]

Shackley, M. 2011. An introduction to X-Ray Fluorescence (XRF) analysis in archaeology. *X-ray fluorescence spectrometry (XRF) in geoarchaeology*. Springer. 7–44.

[99]

Shackley, M. 2010. Is there reliability and validity in portable X-ray fluorescence spectrometry (XRF)? *SAA archaeological record*. (2010), 17–20.

[100]

Shackley, M.S. 2011. An Introduction to X-Ray Fluorescence (XRF) Analysis in Archaeology. X-Ray Fluorescence Spectrometry (XRF) in Geoarchaeology. M.S. Shackley, ed. Springer New York. 7–44.

[101]

Shackley, M.S. 2012. Portable X-ray Fluorescence Spectrometry (pXRF): The Good, the Bad, and the Ugly. *Archaeology Southwest Magazine*. 26, 2 (2012).

[102]

Shennan, S. 1997. *Quantifying archaeology*. University of Iowa Press.

[103]

Shugar, A.N. 2013. Portable X-ray Fluorescence and Archaeology: Limitations of the Instrument and Suggested Methods To Achieve Desired Results. *Archaeological chemistry VIII*. R.A. Armitage and J.H. Burton, eds. American Chemical Society. 173–189.

[104]

Shugar, A.N. and Mass, J.L. 2012. *Handheld XRF for art and archaeology*. Leuven University Press.

[105]

Sillar, B. and Tite, M.S. 2000. The challenge of 'Technological choices' for materials science approaches in archaeology. *Archaeometry*. 42, 1 (2000), 2–20.
DOI:<https://doi.org/10.1111/j.1475-4754.2000.tb00863.x>.

[106]

Speakman, R.J. et al. 2011. Sourcing ceramics with portable XRF spectrometers? A comparison with INAA using Mimbres pottery from the American Southwest. *Journal of Archaeological Science*. 38, 12 (2011), 3483–3496.
DOI:<https://doi.org/10.1016/j.jas.2011.08.011>.

[107]

Tite, M.S. 2002. Archaeological Collections: Invasive Sampling versus Object Integrity. *Papers from the Institute of Archaeology*. 13, (Nov. 2002).
DOI:<https://doi.org/10.5334/pia.189>.

[108]

Tite, M.S. 2001. Overview - materials study in archaeology. *Handbook of archaeological sciences*. John Wiley. 443–448.

[109]

Torrence, R. et al. 2015. Scoping the Future of Archaeological Science: Papers in Honour of Richard Klein. *Journal of Archaeological Science*. 56, (2015).

[110]

Tubb, K.W. 2007. Irreconcilable Differences? Problems with Unprovenanced Antiquities. *Papers from the Institute of Archaeology*. 18, (Nov. 2007).
DOI:<https://doi.org/10.5334/pia.294>.

[111]

Tykot, R.H. 2016. Using Nondestructive Portable X-ray Fluorescence Spectrometers on Stone, Ceramics, Metals, and Other Materials in Museums: Advantages and Limitations. *Applied Spectroscopy*. 70, 1 (Jan. 2016), 42–56.
DOI:<https://doi.org/10.1177/0003702815616745>.

[112]

Uda, M. et al. 2005. *X-rays for archaeology*. Springer.

[113]

White, P. 2006. Producing the record. *Archaeology in practice: a student guide to archaeological analyses*. Blackwell. 410–425.

[114]

Young, M.L. et al. 2010. Non-invasive characterization of manufacturing techniques and corrosion of ancient Chinese bronzes and a later replica using synchrotron X-ray diffraction. *Applied Physics A*. 100, 3 (2010), 635–646.
DOI:<https://doi.org/10.1007/s00339-010-5646-8>.

[115]

Archaeological and Anthropological Sciences. 1, 3.

[116]

Archaeometry. 49, 2.

[117]

Archaeometry. 50, 2.

[118]

Archaeometry. 50, 6.