

Yotam Asscher

Email: yotama@israntique.org.il

Research Interests:

Studying pyro-technological materials, degradation processes in complex materials, and developing non-invasive material characterization on-site methodologies. His research is mainly in the fields of archaeology and conservation sciences. <https://orcid.org/0000-0003-4031-8972>

Education and Research:

2023 – current: **Senior lecturer, Department of Material Culture Heritage, School of Archaeology & Maritime Cultures, University of Haifa**

2022 – current: **Director, Artifacts Treatment and Laboratories Department** | Israel Antiquity Authority
https://www.antiquities.org.il/article_eng.aspx?sec_id=46&subj_id=257

2017 – current: **Director, Analytical Laboratories & Mobile Laboratories** | Israel Antiquity Authority
<https://www.iaa-analytical-lab.org/>

2021– 2022: **External Consultant of Archaeology** | Weizmann Institute of Science 2020:

Aquiring the **certificate of an excavator** (תעודת חופר) | Tel-Aviv University 2018 – 2019:

External Consultant of Archaeology | Weizmann Institute of Science 2015 – 2017: **Post**

Doctorate in Geosciences | University of Padua

Supervisor: Prof. Gilberto Artioli

Major: Conservation Science: The Analysis of Wall Paintings at Pompeii 2010

– 2015: **PhD in Chemistry** | Weizmann Institute of Science

Supervisors: Prof. Steve Weiner and Dr. Elisabetta Boaretto

Major: Absolute Dating of the Bronze to Iron Transition in the Southern Levant 2011 –

2013: **M.A. in Archaeology and Materials** | Tel-Aviv University

Supervisor: Prof. Yuval Goren

Major: Geo-Archaeology and Developing a Method to Prepare Thin Sections On-Site.

2009 – 2011: **M.Sc. in Chemistry** | Weizmann Institute of Science

Supervisors: Prof. Steve Weiner and Dr. Elisabetta Boaretto

Major: Post Burial Chemical Alterations Bones and Teeth: Assessing Preservation State.

2003 – 2006: **B.Sc. in Chemistry** | Tel-Aviv University

List of Publications:

Articles in Refereed Journals

1. A. Oikonomou, **Y. Asscher**, H. May, Y. Gorin-Rosen, T. Rehren. 2023. Metal prills in primary glass: a puzzling aspect of the production process. **Journal of Archaeological Science: Reports** 49. <https://doi.org/10.1016/j.jasrep.2023.103977>
2. I. Choen Ofri, **Y. Asscher**, Y. Maor, R. Porat, B. Riestra, P. Shor. 2023. Analyzing the Composition of Organic Inkwell Residues as Preparation for Characterizing Dead Sea Scroll Ink. **Atiqot** 110. <https://www.istor.org/stable/27204903>
3. Y. Maor, M.B. Toffolo, Y. Feldman, J. Vardi, H. Khalaily, **Y. Asscher**. 2023. Dolomite in archaeological plaster: An FTIR study of the plaster floors at Neolithic Motza. **Journal of Archaeological Science: Reports** 48. <https://doi.org/10.1016/j.jasrep.2023.103862>
4. A. Golani, **Y. Asscher**. 2023. A Ceramic Kiln of the Early Bronze Age from Tel Lod in the Southern Levant: Microarchaeological Analyses and Technological Significance. **Journal of Archaeological Science: Reports** 49. <https://doi.org/10.1016/j.jasrep.2023.103853>
5. J. Gosker, J. Sharvit, I. Hersko, D. Braitman **Y. Asscher**. 2023. The Old Sword and the Sea: A Medieval European Sword Off the Coast of New-Yam. **Atiqot** 111.
6. O. Ackermann, E. Jakoel, E. C.M. van den Brink, Y. Anker, **Y. Asscher**, J. Roskin. 2023. The secret of the shafts from the Chalcolithic period: insights from the portable luminescence method (pOSL): Nissim Aloni Site, 2 Tel Aviv. **Archaeological Excavations and Research Studies in Central Israel: Collected Papers III** (in Hebrew).
7. J. Roskin, L. Rauchberger, G. Tal, **Y. Asscher**. 2023. Geological character and relative age analysis by portable luminescence (OSL) and analytics of calcic quartz sand enable the interpretation of a Hellenistic burial site in Sha'ari Nikanor street (Jaffa). **Archaeological Excavations and Research Studies in Central Israel: Collected Papers III** (in Hebrew).
8. **Yotam Asscher** and Yonah Maor. 2023. Azor: Elemental Composition of the Metal Bowl from Grave T11. **HA-ESI** 135. [https://www.hadashot-esi.org.il/images/Azor-Metal-
Hangasha.pdf](https://www.hadashot-esi.org.il/images/Azor-Metal-Hangasha.pdf)
9. E. Maayan-Fanar, Y. Tepper, **Y. Asscher**. 2022. A unique lead ornament from Shivta: identification considerations. **Levant**. <https://doi.org/10.1080/00758914.2023.2171933>
10. **Y. Asscher**, S. Halevi. 2022. Characterizing the Pigments in Wall Paintings: Comparing Portable and Stationary Multiband Remote Sensing Imaging Systems. **Advanced Non Destructive and**

- Structural Techniques for Diagnosis, Redesign and Health Monitoring for the Preservation of Cultural Heritage.** Chapter pg 71-82. Springer, Cham. [10.1007/978-3-031-03795-5_14](https://doi.org/10.1007/978-3-031-03795-5_14)
11. M. Secco, Y. Asscher, G. Ricci, S. Tamburini, N. Preto, J. Sharvit, G. Artioli. 2022. Cementation processes of Roman pozzolanic binders from Caesarea Maritima (Israel). **Construction and Building Materials** 355: 129128. <https://doi.org/10.1016/j.conbuildmat.2022.129128>
 12. A. Bar, E. Haddad, Y. Asscher, C. Elimelech, A. Van-Zuiden, R. Bookman, Dov Zviely. 2022. Beachrock finds at Yavne East excavations-preliminary results (**Yavne and Its Secrets: Collected Papers** https://www.researchgate.net/profile/Ion-Seligman/publication/364711504_Yavne_and_Its_Secrets_Collected_Papers_-_ybnh_wzpwnwtyh_qwbz_mmrym/links/6357e0546e0d367d91c663ac/Yavne-and-Its-Secrets-Collected-Papers-ybnh-wzpwnwtyh-qwbz-mmrym.pdf)
 13. I. Ktalav, A. Shatil, N. Solodenko, Y. Asscher and L. Perry-Gal. 2022. Put Your Shoulder to the Wheel: Bone Tools Made from Animal Shoulder Blades from Tel Yavne – Uses and Reconstruction. **Yavne and Its Secrets: Collected Papers** https://www.researchgate.net/profile/Ion-Seligman/publication/364711504_Yavne_and_Its_Secrets_Collected_Papers_-_ybnh_wzpwnwtyh_qwbz_mmrym/links/6357e0546e0d367d91c663ac/Yavne-and-Its-Secrets-Collected-Papers-ybnh-wzpwnwtyh-qwbz-mmrym.pdf
 14. J. Roskin, O. Ackerman, J. Marcus, Y. Asscher, N. Wieler. 2022. The geomorphology and sedimentology of the Tel Yavneh environs, southern coastal plain of Israel, and its connection to ancient human settlement. **Yavne and Its Secrets: Collected Papers** https://www.researchgate.net/profile/Ion-Seligman/publication/364711504_Yavne_and_Its_Secrets_Collected_Papers_-_ybnh_wzpwnwtyh_qwbz_mmrym/links/6357e0546e0d367d91c663ac/Yavne-and-Its-Secrets-Collected-Papers-ybnh-wzpwnwtyh-qwbz-mmrym.pdf
 15. J. Roskin, Y. Asscher, H. Khalaily, O. Ackermann, J. Vardi. 2022. The Paleoenvironment and the Environmental Impact of the Pre-Pottery Neolithic Motza Megasite in the Central Judean Highlands (Israel) and its Surrounding Landscape. **Mediterranean Geoscience Reviews** 4.2: 215-245. <https://doi.org/10.1007/s42990-022-00076-x>
 16. B. Storch, Y. Asscher. Provenance of green stone tesserae from Byzantine mosaics in the Judean Shephelah, Israel: Preliminary Results. **Archaeological Excavations and Research Studies in Southern Israel: Collected Papers Volume 5: 18th Annual Southern Conference**
 17. R. Lupo, I. Hadad, Y. Asscher, A. Ayalon, M. Bar-Matthews, O. Barzilai. 2022. The Neolithic stone mask of Peni-Hevar in the south of Mount Hebron. **Archaeological Excavations and Research Studies in Southern Israel: Collected Papers Volume 5: 18th Annual Southern Conference** (in Hebrew)
- Yotam Asscher**, Ivana Angelini, Michele Secco, Matteo Parisatto, Antonina Chaban, Rita Deiana, Gilberto Artioli. 2021. Mineralogical interpretation of multispectral images: the case study of the pigments in the frigidarium of the Sarno Baths, Pompeii. **Journal of Archaeological Science: reports** 35: 102774. (Q1; IF=1.67) <https://doi.org/10.1016/j.jasrep.2020.102774>
18. Aliza van Zuiden and Yotam Asscher. 2021. Lime-based Plasters from Iron Age II till the Roman Period in Jerusalem and its region: Aggregate identification and proposal for a typological classification. **New Studies in the Archaeology of Jerusalem and its Region** 14. <https://doi.org/10.2307/j.ctv2175gkc.14>
 19. E. Maayan-Fanar, Y. Tepper, Y. Asscher. 2021. An Angel from Shivta. **Strata** 39. <https://aias.org.uk/strata/strata-current-issue/>
 20. G. Artioli, G. Baldissin, M. Andrianakis, I. Angelini, Y. Asscher, F. Becherini, A. Bernardi, B. Blumich, A. Chaban, R. Deiana, S. Duchene, D. Giovannacci, F. Marzaioli, M. Parisatto, I. Passariello, C. Rehorn, G. Ricci, M. Secco, V. Tornari, A. Zoleo. 2021. Indagini diagnostiche innovative e non invasive alla scoperta di un affresco di Giotto a lungo Dimenticato. **Il Santo** 393-406.
 21. J. Roskin, Y. Asscher, N. Benenstein. 2021, **Judea and Samaria Research Studies**. 30(2) pp.189-220 (in Hebrew). DOI: [10.26351/JSRS/30-2/2](https://doi.org/10.26351/JSRS/30-2/2)
 22. Ifat Shapira and Yotam Asscher. 2021. Analysis of Plaster from the Winepress Complex at Tel Yavne, Area A. **HA-ESI** 133. http://www.hadashot-esi.org.il/images/Yavne-8520-_hangasha.pdf
 23. A. Fadida, I. Milevski, L. Nadav-Ziv, L. Brailovsky-Rokser, Y. Weingarten, I. Peters, Y. Asscher, S. Shalev, I. Ktalav, L. Perry-Gal and E. Haddad. 2021. A Ghassulian Chalcolithic Occupation at the Southern Margins of Tel Yavne. **The Journal of the Israel Prehistoric Society** (51) 225-260.
 24. E. C.M. van den Brink, E. Jakoeel, A. Yaroshevich, K. Hruby, D. Rosenberg, R. Chasan, O. Ackermann, Y. Anker, J. Roskin, V. Eshed, I. Peters, R. Kapul, Y. Asscher, L. Perry Gal, E. Boaretto. Additional Late Chalcolithic Shafts and Pits East of Namir Road, Tel Aviv. **The Journal of the Israel Prehistoric Society** (51) 136-224.
 25. Yotam Asscher. The Development of Archaeological Sciences: Perspective from the Israel Antiquities Authority. 2021. **City of David: Studies of Ancient Jerusalem** 16. https://www.researchgate.net/publication/355978306_The_Development_of_Archaeological_Sciences_Perspective_from_the_Israel_Antiquities_Authority/stats
 26. S. Amorai-Stark, M. Hershkovitz, Y. Asscher, Y. Tepper. A Magical Ring from the Environs of Legio and Kefar-'Othnay, Isreal. 2021. **Liber Annuus**, 70, 385-403. <https://doi.org/10.1484/J.LA.5.125232>
 27. Y. Asscher, M.A.S Martin, D. Master, E. Boaretto. 2021. A Radiocarbon Sequence for the Late Bronze to Iron Age transition at Ashkelon: Timing Early Philistine Pottery. **Bulletin of the**

- American Schools of Oriental Research** 386(1). (Q1) <https://doi.org/10.1086/714738>
28. **Y. Asscher**. 2020. Multispectral imaging as a tool to identify pigments in wall paintings: Pompeii as a case study (Hebrew). Birkenfeld, M. & Garfinkel, Y. **Digital Archaeology: New research and advanced technologies**. Jerusalem: Hebrew University of Jerusalem
 29. S. Weiner, A. Nagorsky, I. Texel, **Y. Asscher**, R.M. Albert, L. Regev, X. Yan, F. Natalio, E. Boaretto. 2020. High Temperature Pyrotechnology: A Macro- and Microarchaeology Study of a Late Byzantine-beginning of Early Islamic period (7th century AD) Pottery Kiln from Tel Qatra/Gedera, Israel. **Journal of Archaeological Science: Reports** 31:102263. (Q1; IF=1.67) <https://doi.org/10.1016/j.jasrep.2020.102263>
 30. **Y. Asscher**, A. van Zuiden, C. Elimelech, P. Gendelman, U. 'Ad, J. Sharvit, M. Secco, G. Ricci, G. Artioli. 2020. Pre-screening Hydraulic Lime-Binders for Disordered Calcite in Caesarea Maritima: characterizing the chemical environment using FTIR. **Radiocarbon** 62(3) 527-543. (Q1; IF=2.1) <https://doi.org/10.1017/RDC.2020.20>
 31. I. Choen Ofri, **Y. Asscher**, Y. Maor, B. Riestra, P. Shor. 2020. The search for ink, chemical analysis of ink in Roman-era ink-wells. **Shimor** (3) (in Hebrew)
 32. **Y. Asscher**, A. Vun Zaiden, C. Elimelech. 2019. The chemical relationship between modern and ancient materials in the conservation of the port warehouses at Caesarea. **Shimor** (2) (in Hebrew)
 33. **Y. Asscher**, E. Boaretto. 2019. Charred micro-particles characterization in archaeological contexts: identifying mixing between sediments with implications for stratigraphy. **Journal of Archaeological Science** (107) 32-39. (Q1; IF=1.67) <https://doi.org/10.1016/j.jas.2019.04.007>
 34. **Y. Asscher**, I. Angelini, M. Secco, M. Parisatto, A. Chaban, R. Deiana, G. Artioli. 2019. Combining multispectral images with X-ray fluorescence to quantify the distribution of pigments in the frigidarium of the Sarno Baths, Pompeii. **Journal of Cultural Heritage** 40: 317-323. (Q1; IF=3.1) <https://doi.org/10.1016/j.culher.2019.04.014>
 35. I. Angelini, **Y. Asscher**, M. Secco, M. Parisatto, G. Artioli. 2019. The pigments of the frigidarium in the Sarno Baths, Pompeii: Identification, stratigraphy and weathering. **Journal of Cultural Heritage** 40: 309-316. (Q1; IF=3.1) <https://doi.org/10.1016/j.culher.2019.04.021>
 36. E. Boaretto, **Y. Asscher**, Louise A Hitchcock, Gunnar Lehmann, Aren M Maeir, Steve Weiner. 2018. The chronology of the Late Bronze (LB)-Iron Age (IA) Transition in the Southern Levant: a response to Finkelstein's critique. **Radiocarbon** 61(1) 1-11. (Q1; IF=2.1) <https://doi.org/10.1017/RDC.2018.57>
 37. **Y. Asscher**, E. Boaretto. 2018. Absolute Time Ranges in the Plateau of the Late Bronze to Iron Age Transition and the Appearance of Bichrome Pottery in Canaan, Southern Levant. **Radiocarbon** 61(1) 13-37. (Q1; IF=2.1) <https://doi.org/10.1017/RDC.2018.58>
 38. Dal Sasso G, **Asscher Y**, Angelini I, Nodari L, Artioli G. 2018. A universal curve of apatite crystallinity for the assessment of bone integrity and preservation. **Scientific reports** 8(1):12025. (Q1; IF=5.1) <https://doi.org/10.1038/s41598-018-30642-z>
 39. A. Chaban, R. Deiana, M. Parisatto, **Y. Asscher**. 2017. Analysis of on-site multispectral images: a case study of degraded wall paintings in Sarno Baths, Pompeii. **Actis Arta Academia** ([Link](#))
 40. **Y. Asscher**, G. Dal Sasso, L. Nodari, I. Angelini, T. Boffa Ballaran, G. Artioli. 2017. Differentiating between long and short range disorder in infra-red spectra: on the meaning of "crystallinity" in silica. **Physical Chemistry Chemical Physics** 19(32) 21783-21790. (Q1 in chemistry; IF=3.5) <https://doi.org/10.1039/C7CP03446F>
 41. **Y. Asscher**, S. Weiner, E. Boaretto. 2017. A New Method for Extracting the Insoluble Occluded Carbon in Archaeological and Modern Phytoliths: Detection of ¹⁴C Depleted Carbon Fraction and Implication for Radiocarbon Dating. **Journal of Archaeological Science** 78 57-65. (Q1; IF=1.67) <https://doi.org/10.1016/j.jas.2016.11.005>
 42. M. Kerschmitzki, A. Akiva, A.B. Shoham, **Y. Asscher**, W. Wagermaier, P. Fratzl, L. Addadi, and S. Weiner. 2016. Bone Mineralization Pathways During the Rapid Growth of Embryonic Chicken Long Bones. **Journal of structural biology** 195(1) 82-92. (Q1 in biology; IF=2.76) <https://doi.org/10.1016/j.jsb.2016.04.011>
 43. **Y. Asscher**, Y. Goren. 2016. A Rapid On-site Method for Micromorphological Block Impregnation and Thin Section Preparation. **Geoarchaeology** 31(4) 324-331. (Q1; IF=1.81) <https://doi.org/10.1002/geo.21561>
 44. **Y. Asscher**, D. Cabanes, L.A. Hitchcock, A.M. Maeir, S. Weiner and E. Boaretto. 2015. Radiocarbon Dating Shows an Early Appearance of Philistine Cultural Material in Tell es-Safi/Gath, Philistia. **Radiocarbon** 57(5) 825-850. (Q1; IF=2.1) https://doi.org/10.2458/azu_rc.57.18391
 45. A.M. Maeir, B. Davis, L.K. Horwitz, **Y. Asscher** and L.A. Hitchcock. (2015). An Ivory Bowl from Early Iron Age Tell es-Safi/Gath (Israel) – Manufacture, Meaning and Memory. **World Archaeology** 47(3) 414-438. (Q1; IF=1.1) <https://doi.org/10.1080/00438243.2015.1009154>
 46. **Y. Asscher**, G. Lehmann, S. A. Rosen, S. Weiner and E. Boaretto. 2015. Absolute Dating of the Late Bronze to Iron Age Transition and the Appearance of Philistine Culture in Qubur el-Walaydah, Southern Levant. **Radiocarbon** 57(1) 77-97. (Q1; IF=2.1) https://doi.org/10.2458/azu_rc.57.16961
 47. **Y. Asscher**, L. Regev, S. Weiner and E. Boaretto. 2011. Atomic Disorder in Fossil Tooth and Bone Mineral: An FTIR Study Using the Grinding Curve Method. **ArcheoSciences**, (35) 135-141 <https://doi.org/10.4000/archeosciences.3062>
 48. **Y. Asscher**, S. Weiner, E. Boaretto. 2011. Variations in Atomic Disorder in Biogenic Carbonate Hydroxyapatite Using the Infrared Spectrum Grinding Curve Method. **Advanced Functional**

- Materials** 21(7) 3308–3313. (Q1 in chemistry; IF=18.8) <https://doi.org/10.1002/adfm.201100266>
49. D. Fleishman, **Y. Asscher**, and M. Urbakh. (2007). Directed Transport Induced by Asymmetric Surface Vibrations: Making use of Friction. **Journal of Physics Condensed Matter**, 19(9) 096004. (Q1 in material science; IF=2.3) <https://iopscience.iop.org/article/10.1088/0953-8984/19/9/096004/meta>

Articles Submitted/under review

50. **Y. Asscher**, A. van Zuiden, M. Shor. 2021. Degradation of the stones in the Western Wall: Salts Distribution Over Three Decades. **Ancient Jerusalem Publication** (in press)
51. **Y. Asscher**, I. Peters, M. Cavangh, W. Ondricek, E. Ben-Yosef. Microarchaeological Analysis of the Renewed Excavations at the Hathor Temple. **Chapter in Timna's Monograph** (in press)
52. M. Shor, A. van Zuiden, N. Wieler, **Y. Asscher**. Stone Deterioration of the Western Wall: Chemical and Mineralogical Characterization of Salts. **Advanced Nondestructive and Structural Techniques for Diagnosis, Redesign and Health Monitoring for the Preservation of Cultural Heritage: Selected work from the TMM-CH 2023**. Springer Proceedings in Materials (submitted).
53. S. Weiner, J. Spiegelman, L. Nadav-Ziv, **Y. Asscher**, E. Adi, L. Regev, E. Mintz and E. Boaretto. Chemically Transformed Chalk Tesserae from Mosaics in an Industrial Byzantine Wine Press, Yavne, Israel. **Journal of Archaeological Science: Reports** (in prep)
54. A. van Zuiden, Y. Maor, E. Boaretto, J. Regev, D. Shachar, N. Amitai-Preiss, J. Marcus, G. Itach, **Y. Asscher**. Technological Reconstruction of Engraved Wall Plaster: the Inscriptions and Graffiti of the Khallat es-Sihrij Reservoir, Israel. **Open Access Journal of Archaeology & Anthropology**. (submitted)
55. I. Peters, I. Shezaf, S. Rozenberg, A. Najjar, B. Tzin, **Y. Asscher**. Painted Plaster Fragments in the 'Public Building' at Migdal. **Open Access Journal of Archaeology & Anthropology**. (submitted)
56. S. Rozenberg, **Y. Asscher**. Wall Painting Remains from the New Excavations at Omrit. Report (submitted)
57. V. Shotten-Hallel, **Y. Asscher**, A. Brook, E. Sklar, D. Ashkenzi. Archaeometallurgical Characterization of Ferrous Spacers, Retrieved from the Walls of Atlit Castle. Collected papers in **Construction History Society 2023**
58. A. Erlich, **Y. Asscher**, Y. Tepper. A Roman Bronze Figurine of a Boy from Shivta in the Negev. **Oxford Journal of Archaeology** (submitted).
59. G. Haklay, R. Lupu, A. Eirikh-Rose, L. Brailovsky-Rokser, H. May, A. Frmkin, **Y. Asscher**, M. Shor and I. Milevski. Nahal Rephaim Cave: A Neolithic site within a karstic cave in Jerusalem, Israel. **Antiquity** (submitted).
60. Y. Abadi Reiss, J. Marcus, C. Elimelech, L. Perry-Gal, I. Ktalav, O. Akerman, **Y. Asscher**, P. Betzer, D. Varga. 2022. Life On the Soreq Riverbank: A Chalcolithic Ghassulian Site at East Yavne. **The Journal of the Israel Prehistoric Society** (submitted).
61. N. Wieler, N.D. Michael, O. Shmueli, E. Kogan-Zehavi, Y. Tepper, **Y. Asscher**. Geological constraints elucidate ancient runoff agricultural patterns along a climatic gradient, Negev Desert, Israel. **Archaeological Excavations and Research Studies in Southern Israel: Collected Papers Volume 6: 19th Annual Southern Conference** (submitted).
62. S. Rozenberg, S. Weksler-Bdolah, **Y. Asscher**. The synagogue from the time of the Second Temple in the ruins of Umm al-Omdan and its decorations. **Israel Exploration Society** (submitted in Hebrew).
63. S. Rozenberg and Y. Asscher. Wall Painting Remains from the New Excavations at Omrit.

Open Access Journal of Archaeology & Anthropology. (in prep)

Honors, Awards, Excavations & Grants:

2022 **Ministry of Science and Technology Grant** - The UH-IAA Infrastructure Center for Archaeological and Conservation Sciences, and Digital Archaeology (PI and co-directing with Ruth Shahack-Gross and Guy Bar-Oz) (total of 2,995,863 nis for 4 years) https://www.gov.il/he/departments/general/most_knowledge_centers

2022 **Visiting Professor Grant** for 2023 in La Sapienza University of Rome, Italy <https://www.uniroma1.it/node/24507>

2021 Awarded for Best Performance by the IAA

2021 **Israel Science Foundation grant 457/21** (ISF) – An Integrative Study of the Chalcolithic Copper Production in the Southern Levant (PI and co-directing with Sarel Shalev and Yuval Goren) (total of 1,440,000 nis for 4 years) <https://www.isf.org.il/Files/Announcement/%D7%A8%D7%A9%D7%99%D7%9E%D7%AA%20%D7%96%D7%95%D7%99%D7%9D%20%D7%9C%D7%90%D7%AA%D7%A8%202021.pdf>

2020 Awarded for Best Performance by the IAA

2020 **Excavation license G.14-2020** – The Iron Age Yotvata fortress (co-directing with Erez Ben-Yosef)

2019 **Beamtime for Neutron Tomography (IMAT) and Diffraction (GEM)** at ISIS facility of the STFC - Unravelling the mysteries of ancient metal scrolls with high-resolution neutron tomography visualisation (500,000nis)

2018 Morningsstar Foundation grant –Inkwells organic composition as a prescreening tool for Dead Sea Scrolls ink characterization (50,000nis)

2012 ADAR Foundation Scholarship

2012 Salim and Rachel Benin Foundation Scholarship

research group:

Postdoc: Yonah Maor. The topic is Neolithic lime-plaster technology.

Postdoc: Nimrod Wieler. The topic is Byzantine agricultural fields.

Ph.D candidate: Meidad Shor at HUJI (co-supervising with Orit Peleg-Barkat). Title: Bonding Material and Construction Techniques in the Building Projects of King Herod (37-4 BCE): Caesarea Maritima as a Case Study

Ph.D candidate: Ilana Peters at HUJI (co-supervising with Naama Yahalom-Mack). Pre-proposal phase, the topic is Early Bronze Metallurgy.

Ph.D candidate: Magda Batiashvili at BGU (co-supervising with Yuval Goren). Pre-proposal phase, the topic is Chalcolithic Metallurgy.

M.A candidate: Chen Elimelech at Bar-Ilan University (co-supervising with Avner Ecker). Pre-proposal phase, the topic is the construction techniques in Yavneh's Byzantine Wine complex.

Reviewer and editorial work:

Reviewer in journals: Radiocarbon, Journal of Archaeological Sciences: Reports, Archaeological and Anthropological Sciences, Archaeometry, Heritage Science

Guest Editor in Journal: Minerals. Special Issue on Mineralogy, Geochemistry and Technological Research of Portable Clay Products in Archeology and Art (co-editor with Yuval Goren)

Field Work:

2017- **current:** Designed and implemented a mobile archaeological science laboratory for the IAA that includes an FTIR, petrographic microscope, XRF. This enables interactive on-site analyses, which is the hallmark of my mode of operation in the field.

2016: Excavating and operating an on-site laboratory at the site Pompeii, Italy with University of Padova
2015: Excavating at the site Tiryns, Greece with Heidelberg University (paid contract)
2014: Excavating and operating an on-site laboratory at the site Ashkelon, Israel with Harvard University

2013-2014: Excavating and operating an on-site laboratory at the site Boker Tachtit, Israel with Weizmann Institute and IAA

2008 – 2013: Excavating and operating an on-site laboratory at the site Tell es-Safi/Gath, Israel with Bar-Ilan University

2011: Excavating and operating an on-site laboratory at the site Qubur El-Walaydah, Israel with Ben Gurion University

2007 - 2009: Underwater excavations at the site Liman Tepe, Turkey with Haifa University
2007: Excavating at Vadum Jacob, Israel

2003: Excavating at Motza, Israel

Teaching:

2021-22 - Scientific Methods in Cultural Heritage – course #: 20227021) at WIS 2021-22

– Field Laboratories in Archaeology – course #: 135-2-0046 at BGU 2020-21 - Scientific

Methods in Archaeology – course #: 135-1-3181 at BGU 2018-19 - Scientific Methods

in Archaeology – course #: 135-1-3181 at BGU

2018-19 - Scientific Methods in Cultural Heritage: Museum and Field Archaeology – course #: 135- 2-0099 at BGU

2019 – Archaeological Sciences – course at the Da-Vinci program at HUJI 2018 –

Microarchaeology field school – summer course at WIS

Conferences:

Oral Contributions:

2023 – The 3rd International Conference on Transdisciplinary Multispectral Modelling and Cooperation for the Preservation of Cultural Heritage: Recapturing the World in Conflict through Culture, promoting mutual understanding and Peace (TMM-CH) | Athens, Greece

“Stone Deterioration of the Western Wall: Chemical and Mineralogical Characterization of Salts”

2022 – The 43rd International Symposium on Archaeometry (ISA) | Lisbon, Portugal “Pre-screening Hydraulic Lime-Binders for Disordered Calcite in Caesarea Maritima: characterizing the chemical environment using FTIR ”

2021 – Caesarea Maritima International Conference | Caesarea, Israel

“The Nature of the Pumiceous Ash and Tuff used for the Construction of the Sebastos Harbor”

- 2021 - The 2nd International Conference on Transdisciplinary Multispectral Modelling and Cooperation for the Preservation of Cultural Heritage: Rebranding the World in Crisis through Culture (TMM) | Athens, Greece
 “Mineralogical Interpretation of Multispectral Images: Using Spectral Indicators in Portable and Stationary Cameras for Characterizing Pigments of Wall Paintings”
- 2021 – European Geosciences Union | On-line symposium
 “Lateral and vertical pulsed-photon portable luminescence (PPSL) profiling of anthropogenically-altered sediments in rescue excavations of different landscapes”
- 2019 – 2nd International Congress on Archaeological Sciences in the Eastern Mediterranean and the Middle East (ICAS-EMME 2) | Nicosia, Cyprus
 “Mineralogical interpretation of multispectral images: identification and 2D distribution of pigments from MS data”
- 2019 – Historic Mortars Conference | Pamplona, Spain
 “Pozzolanicity beyond Vitruvius: insights into the exploitation of reactive silicates throughout the Roman world”
- 2018 – Workshop on Marine Technologies: From Marine Archeology to Internet of Underwater Things | Haifa, Israel
 “Analytical Methods for understanding pozzolanic reactions underwater” 2018
- Art&Archaeology International Conference | Jerusalem, Israel
 “The Potential of On-site Measurements for Provenance Applications of Mosaic Tesserae: Preliminary results from Ramat Beit Shemesh, Israel”
- 2018 – Art&Archaeology International Conference | Jerusalem, Israel “Mineralogical interpretation of multispectral images: identification and 2D distribution of pigments from MS data”
- 2018 – The Bi-national Israeli-Italian workshop MoDIM – Mortar Dating International Meeting | Bordeaux, France
 “Characterization of ancient mortars by combined XRD, NMR and FTIR techniques”
- 2018 – The Bi-national Israeli-Italian workshop ‘Ecology and Science applied to the study of ancient societies’ | Rehovot, Israel
 “Frontiers in ancient mortars pozzolanic reactions”
- 2017 – Meeting of the UISPP Commission for Archaeometry | Pavia, Italy
 “Identifying and mapping inorganic pigments in ancient wall paintings based on non-invasive XRF and multispectral imaging”
- 2016 – The 41th International Symposium on Archaeometry (ISA) | Kalamata, Greece “Timing the Migration of the “Sea Peoples” in the 2nd Millennium BC in the Southern Levant: A Radiocarbon Based Chronology”
- 2015 - BANE 2015 conference | London, UK
 “A slow social integration of the Philistines in the southern Levant is supported by a new radiocarbon based chronology”
- 2014 - The 9th International Congress on the Archaeology of the Ancient Near East | Basel, Switzerland.
 “The Early Iron Age Chronology of the Negev in the Light of Radiocarbon Dates”
- 2013 - Radiocarbon and Archaeology 7th International Symposium | Ghent, Belgium “Integrating Analytical Methods in Radiocarbon Sampling Strategy: Determining the Bronze to Iron Age transition in Qubur El-Walaydah, Israel”

Invited Oral Contributions:

- 2022 – Modeco2000 Workshop | Serbia
 “Evaluation of ancient mortars hydraulicity through characterization of long and short-range crystallinity”
- 2019 – The Getty Conservation Institute | Los Angeles, USA
 “Archaeological sciences in rescue excavations at the Israel Antiquities Authority: On-site field laboratories”
- 2019 – Rutgers University | New Jersey, USA
 “Archaeological sciences in rescue excavations at the Israel Antiquities Authority: On-site field laboratories”
- 2017 – The Bi-national Israeli-Italian workshop EMHILE - Environment and Migrations: the Homo sapiens in the Levantine corridor between 60.00 and 40.00 years ago | Lecce, Italy
 “Pigments in the Upper Paleolithic: contexts, method of characterization, and developments in mapping techniques on-site”
- 2016 – The Czech-Israel workshop on “Advances in Conservation Science” | Telč, Czech Republic
 “Evaluating Archaeological Bones Preservation using Infrared Spectroscopy”
 “Conservation of Frescoes in Pompeii: Mapping Minerals and Efflorescence using

Multi-spectral Imaging"

Poster Contributions:

2022 – The 43rd International Symposium on Archaeometry (ISA) | Lisbon, Portugal

"A Method of Distinguishing Types of Ash: Case Study at Qumran" 2021 – Israel Geological Society | On-line symposium

"Distinguishing between anthropogenic and natural deposition processes and sediments by pulsed-photon luminescence (PPSL) profiling"

2019 – Historic Mortars Conference | Pamplona, Spain

"Hydraulic mortars at Caesarea: underwater and on-land pozzolanic reactions through chemical and mineralogical examinations of Herodian, Roman, and Byzantine constructions"

2018 – Art&Archaeology International Conference | Jerusalem, Israel "Characterization of ancient and modern hydraulic mortars at Caesarea by combined XRD, SEM, XRF and FTIR techniques"

2018 – The 42th International Symposium on Archaeometry (ISA) | Merida, Mexico

"Combining X-Ray Fluorescence and Fiber Optic Reflectance Spectroscopy with Multispectral Images to Map Pigments on-site in Wall Paintings in the Sarno Baths of Pompeii"

2016 – The 41th International Symposium on Archaeometry (ISA) | Kalamata, Greece "Recrystallization Pathways of Fossil Bones in Sudan: An FTIR Study Using the Grinding Curve Method"

2011 - Radiocarbon and Archaeology 6th International Symposium | Pafos, Cyprus

"Tooth Enamel Preservation Using FTIR and Grinding Curves"

2011 - MicroArchaeology Workshop (**member of organizing committee**) | Rehovot, Israel "The potential of reflectance IR as a new tool for the characterization of archaeological materials: A comparison study to Transmission IR"

2010 - Gordon Research Conferences – Biomineralization | New London, NH, USA

"New Approach for Differentiating Carbonate Hydroxyapatite Crystal Disorder Using FTIR"

Technical Skills:

- Operating on-site laboratory; microscopy, transmission and reflectance infrared spectroscopy, multi-spectral imaging, portable x-ray fluorescence, 3D photogrammetry
- Computer software: Agisoft, Omnic, CloudCompare, Envi, HighScore Plus

Languages:

Hebrew: Native | English: Excellent writing and speaking | Italian: Conversational