

**Associated Professor Dr. rer. nat.  
Seyed Mohammad Amin Emami**



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## **Education**

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| 1998 – 2002 | B. Sc. & M.Sc. in Mineralogy, Johannes Gutenberg University of Mainz, Faculty of Petrology & Mineralogy   |
| 2004 – 2008 | Dissertation (Dr.rer.nat), in Mineralogy, Crystallography and Crystal Chemistry in University Siegen, faculty of Building Material Chemistry by |
| 2009 - 2015 | Assistant professor in Mineralogy and Crystallography at the Art University of Isfahan  |
| 2015 –      | Associated professor in Mineralogy and Crystallography at the Art University of Isfahan   |

## **Research Interests**

- 1) Crystallographical & phase characterization through Rietveld Refining Method.
- 2) Multi crystal texture and single crystal texture analysis
- 3) Synchrotron Radiation (QPXRD-Beamline)
- 4) Thin section chemical petrography, petrography and phase determination.
- 5) Ore petrology as well as mineralogical chemical investigation on slag.
- 6) Clay mineralogy
- 7) Surface modification technology
- 8) Archaeometallurgy & Archaeometry
- 9) Characterization of ceramic's structure and their procedure.
- 10) Mineralogical chemical investigation on building material chemistry.

## **Fellowships**

- 1 2010, AAA (Akademisches Auslands Amt) fellowship for three months at the University of Siegen, department of Building material chemistry
- 2 2017, DAAD scholarship for three months at the University of Siegen, department of Building material chemistry
- 3 2020, IdEx, International excellence fellowship for 6 months at the IRAMAT institute for archaeometrical research, University of Bordeaux Montaigne, France

## **Position Held**

- 1996 – 1998 Responsible in Metallographic Labor at Research Center of Conservation and Restoration, Teheran.
- 1998 – 2002 Assistant by Prof. Dr. Ingo Keesmann in applied mineralogy & ore petrology, University Mainz, Germany.
- 2002 – 2003 Geochemist at Max-Planck-Institute for Chemistry in Mainz by PD. Dr. J. Snow. Scientific assistant in AMORE international project (Arctic Middle Ocean Ridge Expedition).
- 2003 – 2006 Head of Geology and Archaeometry Department of Parsa Pasargadae Research Foundation (World Cultural Heritage Site of Takht-e Djamshid), Shiraz, Iran.
- 2005 – 2008 AAA Scholarship as scientific assistant, and doctoral candidate at Institut of Building Material Chemistry, University Siegen under supervising of Prof. Dr. habil. R. Trettin
- 2006 – 2008 Teaching experiences for the Economic Geology and Ore Petrology and Mineralogy as well as Polarization-, Confocal-, Atomic Force Microscopy and XRF, XRD facilities.
- 2009 – 2015 Assistant Prof. at Art University of Isfahan, faculty of Conservation
- 2010 – 2015 Director of Education and Graduate Studies
- 2015 – till now Head of International & Scientific Cooperation Office
- From 2010 Gast Scientist at Department of Building Material Chemistry, University Siegen

## **Language**

German (fluent), English (fluent), French (intermediate), Spain (intermediate), Persian (native)

## **Journal Editorial Board**

- 1) Journal of Geologia Columbia (Member of Editorial)
- 2) Journal of Geological Resource and Engineering (Member of Editorial)
- 3) Journal of Archaeological Science (Referee)
- 4) Material Science and Engineering (Referee)
- 5) American Association for Science and Technology (Referee)
- 6) International Journal of Geophysics and Geochemistry (Member of Reviewing Board)
- 7) National Journal of Science of Conservation and Restoration (Member of Editorial)
- 8) Journal of Research on Archaeometry (Member of Editorial)

## Memberships

- 1) Member of Iranian Mineralogy and Crystallography Society
- 2) Member of Iranian National Project of High Energy Beamline (Synchrotron)
- 3) Member of Iranian Mining Engineering Organization
- 4) Member of DGAA, German Association for Analytical Archaeology and Archaeometry
- 5) Member of Material Chemistry Association of Germany
- 6) Member of Union Internationale des Sciences Préhistoriques et Protohistoriques  
International Union of the Prehistoric and Protohistoric Sciences União Internacional Das Ciências Pré-Históricas e Proto-Históricas (UISPP).

## Awards and Grants

- 1) Students award from AAA Germany (2008)
- 2) Outstanding Scientist in Isfahan Provinze (1390)
- 3) Outstanding Scientist in Isfahan Provinze (1393)
- 4) Outstanding Scientist in Isfahan Provinze (1395)
- 5) Outstanding Scientist in Cultural Heritage Science (1397), Dep. Conservation & Restoration of Cultural Relics
- 6) DAAD grant for scientific collaboration Juni-Juli-August 2018.
- 7) IdEx Fellowship, Professeur invite', Institut de recherche sur les Archéomatériaux. Centre de recherche en physique appliquée à l'archéologie. France, 2020.

## International & National Courses and Seminars

14. (2020), Dr. rer. nat. S. Mohammadamin Emami, Historic-Smart, Temple of “Tepti Ahar”, an impressive remembrance of bricks and mortar technology in 3 th Millennium BC, Khousestan, Iran, Institute for Baugeschichte und Bauforschung, Technical Universitaet, Wien.
13. (2020), Dr. rer. nat. S. Mohammadamin Emami, Rietveld Refining Methods for Postgraduate, IRAMAT, 1), Institut de recherche sur les Archéomatériaux. Centre de recherche en physique appliquée à l'archéologie
12. (2018), Dr. rer. nat. S. Mohammadamin Emami, Application of Synchrotron radiation in Cultural Heritage, Investigation on the characterization of ancient glasses from Chogha-Zanbil, RCCCR, Tehran, Iran.
11. (2018), Dr. rer. nat. S. Mohammadamin Emami, Rietveld Refining Methods for Postgraduate, Department of Building Material Chemistry, University Siegen, Germany.
10. (2017), Dr. rer. nat. S. Mohammadamin Emami, Applied Mineralogy in Science and Technology, Department of Geology, 2/9/95, University Isfahan, Iran
9. (2017), Dr. rer. nat. S. Mohammadamin Emami, Archaeometry and characterization and manufacturing process of ancient ceramics, Department of Archaeology, University Tehran, Iran

8. (2017), Dr. rer. nat. S. Mohammadamin Emami, Characterization of Glass damaging process in mineralogical point of view, Research Centre for Conservation and Restoration of Cultural Relics, Tehran, Iran 7/6/96
7. (2016), Dr. rer. nat. S. Mohammadamin Emami, Instruction for writing a Scientific Paper (ISI), Art University of Isfahan, 14-17/11/94
6. (2016), Dr. rer. nat. S. Mohammadamin Emami, Lecture, Archaeometallurgy (from Macro to Micro) from 18<sup>th</sup>-23<sup>th</sup> June, department of Chemistry, Uni-Urbino, Italy.
5. (2014), Dr. rer. nat. S. Mohammadamin Emami, Kompakt Kurs, Angewandte Petrologie im Intitut fuer Bau- und Werkstoffchemie, Universitaet Siegen, FB Chemie und Biologie
4. (2012), Dr. rer. nat. S. Mohammadamin Emami, Director of Education and Graduate Studies at the Art University of Esfahan, Iran, Faculty of Conservation, *Multi analytical approach on bricks material from the Iranian-Italian excavations at Tol-e Ajori*, Martedì 25 giugno, ore 12, Dipartimento Di Beni Culturali, Via Degli Ariani 1, 48121 Ravenna, Informazioni 0544.936711 - [www.Beniculturali.Unibo.it](http://www.Beniculturali.Unibo.it)
3. (2012), Dr. rer. nat. S. Mohammadamin Emami, Kompakt Kurs, Advance Material Chemistry and Ceramography im Intitut fuer Bau- und Werkstoffchemie, Universitaet Siegen, FB Chemie und Biologie
2. (2011), Dr. rer. nat. S. Mohammadamin Emami, Kompakt Kurs, Polarizationsmikroskopie im Intitut fuer Bau- und Werkstoffchemie, Universitaet Siegen, FB Chemie und Biologie
1. (2012), Dr. rer. nat. S. Mohammadamin Emami, Kompakt Kurs, Advance Microscopy in Material Science im Intitut fuer Bau- und Werkstoffchemie, Universitaet Siegen, FB Chemie und Biologie

## Research Projects

- 1) (2004), M. Emami, Mineralogical- chemical investigation on the archaeometallurgy of Meymand, Kerman.
- 2) (2009), M. Emami, Mineralogical- chemical investigation on the pottery production technology in Haft-Tappeh, Art University of Isfahan
- 3) (2010), M. Emami, Archaeometry Study Graduate Program, Art University of Isfahan
- 4) (2010), M. Emami, O. Oudbashi, Bronze in the Archaeology, Art University of Isfahan
- 5) (2012), M. Emami, Comparative studies on the characterization of marbel stones from Jiroft and Shahr-e Sokhte, Iran, Art University of Isfahan
- 6) (2017), M. Emami, Minning and slag petrology from the mineralogenic zone of Nakhlak-Anarak for characterizing the rare earth elements enrichments. Research Center for Conservation of Cultural Relics, Tehran, Iran
- 7) (2017), M. Emami & F. Bayat, Multi-Analytical research on the characterization of glass workshops from ancient Gorgan Wall. Cultural Heritage Organization of Golestan, Iran.
- 8) (2017), M. Emami, A. Rozatian, M. Hadian Dehkordi, Ch. Pritzel, R. Trettin. Material characterization of the primary prehistoric glass samples (3rd Millennium BC) from Iran;

An archaeometrical approach to glass manufacturing process, ALBA Synchrotron Cell center, Barcelona, Spain.

- 9) (2018), M. Emami & Rouzatian, A. S. H., Characterization of glass textures under the light of Synchrotron, Horizon 2020, Institut for Research in Fundamental Sciences, Tehran, Iran.
- 10) (2019), M. Emami and M. Shalikarian, Characterization and Provenance of the stone used in Khaled-Nabi cemetery, Gorgan, Cultural Heritage Organization of Golestan province.
- 11) (2020), M. Emami. Silver characterization and composition from Shahr-e Firouzeh, Neishabour, Khorasan, Art University of Isfahan.
- 12) (2021), M. Emami. Emergence of arsenic-copper metallurgy in south eastern Iran and eastern Anatolia: interpreting ancient metal technology and metal routes through a multi-analytical approach. International Cooperation with University Istanbul, department of Archaeology, partnerin, Associate Prof. Dr. Gonca Dardeniz Arıkan

### **Publication (of the last 5 years)**

M. Emami, R. Chapoulie, K. Abdi (2021). Cathodoluminescence microscopy for interpreting the fabric and heating process of ancient pottery ; preliminary study on the technological features of pottery from the Kur River Basin. Journal : Archaeometry, 1–20. DOI : 10.1111/arc.12718

47. Tayyari, J., Emami, M. & Agha-Aligol, D. 2021. Identification of Microstructure and Chemical Composition of a Silver Object from Shahrak-e Firouzeh, Nishapur, Iran (~ 2nd millennium BC). Surfaces and Interfaces, 101168.

46. Emami, M., Vallcorba, O., Rozatian, A. S. H., Hadian Dehkordi, M., Talaei, H. & Chapoulie, R. 2021. Synchrotron micro-XRD applied for the characterization of pottery from the Neolithic to Chalcolithic transitional period: a case study from Tappeh Zaghe, Iran. The European Physical Journal Plus, 136(63), pp.

45. Heydarian, M., F. Hajinorouzi, A. Khosrowzadeh, S. I. Beheshti, and M. Emami, 2020, Insight into the provenance and clustering of Middle Chalcolithic Ceramics from Chaharmahal-Bakhtiari, Iran: Using petrographic and ICP-OES analysis, Journal of Archaeological Science: Reports, 34.

44. Emami, M., Rozatian, A.S.H., Vallcorba, O., Anghelone, M., Dehkordi, M.H., Pritzel, C., Trettin, R., 2020. Synchrotron micro-XRD study, the way toward a deeper characterizing the early prehistoric Iranian glass cylinders from Late Bronze Age (1280 BC), The European Physical Journal Plus 135, 1-14.

43. Heydarian, M., Abdorrahimian, F., Emami, M., Beheshti, S. I., (2020), The provenance and distribution of Early Bronze ceramics in the Kolyaei Plain, central Zagros, Iran Archaeometry., Early View First published: 03 March 2020

42. Emami, M., (2020), Production of Pottery from Esfandaghe and Jiroft, Iran, late 7th - early 3rd Millennium BC, Material and Manufacturing Process, Vol 35, Issue 3, pp 1446-1454.

41. Emami, M., Török, B., Barkóczy, P., Eslami, M., (2020), New insight on Late Bronze Age adjustment of high-Tin bronze metallurgy in Haft Tappeh (2<sup>nd</sup> millennium BC), southern Iran, Metallography and microstructure (in Publishing).
40. Kassiri, M., Shahrabadi, Sh., Emami, M., Razani, M., (2020), Provenance of the stones used in plinths of the Achaemenid palaces of Borazjan, South-Western of Iran, *Journal of Archaeological Science: Reports* 29 (2020) 102064.
39. Emami, M. and Emami, S. N., (2020), A time-dependent statistical evaluation of the ceramic manufacturing process based on the mineralogical chemical analysis, *ArchaeoScience*, 44(2), 7-17
38. Emami, M., (2019), Achaemenid bronze! Quid est? Archaeometallurgical investigations on some bronze artefacts from Persepolis, *L'Orient est son jardin, Hommage à Rémy Bouchardat, Serie Acta Iranica*, 58, Editors: Gondet S., Haerinck E., Pp 157-167.
37. Emami, M., Khanjari, R. and Naghavi, S., (2019), Identification of microstructure and chemical composition of Celadon wares from the Harireh ancient city of Kish Island, Iran, *Periodico di Mineralogia*, vol. 88, 105-115
36. Emami, M. and Jafari, J., (2019), Archaeometallurgical Studies on Corrosion behaviour of Cu-As Alloys from "Lama" (2<sup>nd</sup> Millennium Bc), Iran, in *new Results and Analytical Methods to Characterize Pre- and Protohistoric Metals and other Inorganic Materials*, guest editors Béla Török, Alessandra Giunliia-Mair, Maria Pia Riccardi Péter Barkóczy, *UISPP Journal, the Journal of the International Union of Prehistoric and Protohistoric Sciences Revue de l'Union internationale des sciences préhistoriques et protohistoriques*, ISSN 261-2782, Vol. 2 Special Issue 1- 2019, Pp. 24-32
35. Pedram, B., Emami, M., Khakban, M., (2019), Role of the Open-Air Museum in the Conservation of the Rural Architectural Heritage, *Conservation Science in Cultural Heritage*, 101-120.
34. Daghmehchi, M., C. Rathossi, H. Omrani, M. Emami, and M. Rahbar, (2018), Mineralogical and thermal analyses of the Hellenistic ceramics from Laodicea Temple, Iran, *Applied Clay Science*, 162, 146-154.
33. Naeimi Taraei, P., Dolati, A. and Emami, M., (2018), An investigation of the corrosion behavior of some iron artifacts belonging to the early Iron Age, *International Journal of Conservation Science*, volume 9, issue 2, 277-290.
32. Emami, M., Eslami, M., Fadaei, H., Karami, H., Ahmadi, K., (2018), Mineralogical–Geochemical Characterization and Provenance of the Stones Used at the Pasargadae Complex in Iran: A New Perspective, *Archaeometry*, 60 (6), 1184-1201.
31. Noghani, S., Amiri, M.C., Emami, M., (2018), A New Approach to the Desalination Process of Archaeological Potteries, *Mediterranean Archaeology and Archaeometry* 18(1), 255-267.
30. Amadori, M.L., Pallante, P., Fermo, P., Emami, M.A., Chaverdi, A.A., Callieri, P., Matin, E., (2018), Advances in Achaemenid brick manufacturing technology: Evidence from the monumental gate at Tol-e Ajori (Fars, Iran), *Applied Clay Science* 152, 131-142.

29. Bayat Nejad, F. and Emami, M., (2017), Applying optical and electron microscopy in ancient glasses destruction process. *Iranian Conservation Science Journal*, vol. 1, issue 1, 35-46.

28. Emami, Mohammadamin, Mehdi Razani, Nader Alidadi Soleimani, and Youssef Madjidzadeh. (2017). "New insights into the characterization and provenance of chlorite objects from the Jiroft civilization in Iran." *Journal of Archaeological Science: Reports* 16:194-204. doi: 10.1016/j.jasrep.2017.10.004.

27. Mohammadamin Emami, 2016, Achaemenid Bronze! Quid Est? Archaeometallurgical Investigations on Some bronze Artefacts From Persepolis, (under Publishing)

26. Daghmehchi, M., Omrani, H., Emami, M. & Nokandeh, J., (2016), Mineralogical and thermo-chemical characteristics of the Hellenistic ceramics and raw clay from Qizlar Qal'eh (northeastern Iran), *Materials Characterization*, 120, 143–151

25. Amiri, M. C., Noghani, S. & Emami, M., (2016), Investigation on the role of agitation in the desalination process of ceramics, *Conservation Science in Cultural Heritage*, 15, 111-121

24. Emami, M., Kowald, T. & Trettin, R., (2016), Preliminary archaeometallurgical studies on copper extraction from polymetallic ore sources in Meymand, south central Iranian desert, *Journal of Archaeological & Anthropological Science*, 9, 1515-1528, DOI: 10.1007/s12520-016-0319-y

23. Emami, M., Nekouei, S., Ahmadi, H., Pritzel, Ch. & Trettin, R., (2016), Iridescence in Ancient Glass: A Morphological and Chemical Investigation, *International Journal of Applied Glass Science*, 7, 59–68, DOI:10.1111/ijag.12182

## Conference Proceedings

74. Mohammadamin Emami, Amir Sayid Hassan Rozatian, Reinhard Trettin, Synchrotron Radiation via High Pressure Micro-diffraction Beamline for characterization of crystallinity and firing technology in ancient ceramic matrices, 16<sup>th</sup> SESAME users meeting 15-16 Dec. 2018, Amman, Jordan.

73. Emami, M., Rozatian, A., Hadian Dehkordi, M., Pritzel, Ch., Trettin, R., (2018), A message from the past; Material characterization of the primary glass workshops in 3rd Millennium BC in Iran. 10<sup>th</sup> ILSF synchrotron users meeting, May 13-14 2018, Qazvin, Iran.

72. M. Emami, Y. Sedghi, (2018), Set on the Fire over 4th millennium BC: Preliminary Multi-Analytical Approach to the Ceramic Production Technology in Tal-i Eblis, The 11th International Congress on the Archaeology of the Ancient Near East, Munich, Germany

71. Mohammadamin Emami, Asieh Salehi, Nader Soleimani, (2018), Multi-analytical studies on the manufacturing process of Neolithic ceramics from Jiroft (late 7th - early 6th Millennium BC), Iran, sciencesconf.org:uispp 2018:182755, Paris, France

70. Emami, M., Khanjari, R., Naghavi, S., (2017), Celadons: multianalytical approach for characterizing of celadon ceramics., UISPP Archaeometry of ancient artifacts, materials and their technologies, Pavia, Italy

69. Emami, M., Zakavi, S., Modaberi, S., (2107), Mineralogical- chemical investigations on the copper ingots from Haft Tappeh (2th millennium BC), Iran, Oeztunali 2017 International Symposium on Geoarchaeology, Ancient Mining and Metallurgy, 1-2 Nov., Istanbul, Turkey
68. Bayat Nejad, F. & Emami, M., (2017), An Investigation on some Ancient Glass Fragments from the City Istakhr by Using non-Destructive Methods, 14<sup>th</sup> European Meeting on Ancient Ceramic, 6-9 Sep. Bordeaux, France.
67. Yazdani, M. Ahmadi, H., Emami, M., Lamehi Rachti, M., Agha-Aligol, D., Khosravi Bizhaem, F., (2017), Relief and Shiny: Technological study of applied relief and gilding technique on mina'i ware from Rayy and Alamut of Islamic medieval in Iran. 14<sup>th</sup> European Meeting on Ancient Ceramic, 6-9 Sep. Bordeaux, France.
66. Emami, M. & Emami, S. N., (2017), Statistical modelling of earthen ware ceramic manufacturing process based on longitudinal dataset and mineralogical analysis, 14<sup>th</sup> European Meeting on Ancient Ceramic, 6-9 Sep. Bordeaux, France.
65. Emami, M. (2017), Metallurgy in 5th millennium BC; The importance of metal working in Dalma tradition in west of. The Ninth International Conference on the Beginings of the Use of Metals and Alloys (BUMA-IX), edited by Jea-Young Choi and Jank-Sik Park. Busan, South Korea.
64. Emami, M. and Hozhabralsadati, M., (2017), New Insights into the archaeometallurgy of copper from Jiroft Civilization (3rd millennium BC) in IranNew Insights into the archaeometallurgy of copper from Jiroft Civilization (3<sup>rd</sup> millennium BC) in Iran. The Ninth International Conference on the Beginings of the Use of Metals and Alloys (BUMA-IX), edited by Jea-Young Choi and Jank-Sik Park. Busan, South Korea.
63. Karamad, Z. and Emami, M., (2016), Historical Research Studies on Persian Crucible Steel from Chahak, Iran. ICOM-CC-METAL 2016, New Delhi, India.
62. Emami, M., (2016), Crystallographic interpretation of mineral decompositions via Rietveld refinement strategy for clustering ancient ceramics. 30th European Crystallographic Meeting, 28th August - 1st September 2016, Congress Center, Basel, Switzerland.
61. Ghobadi, A., Emami, M. and Asslani, H., (2016), Microorganisms influence the mechanisms of the rocks erosion at Tang-e Chgan, Joint 44th Annual AIC Meeting (CAC-ACCR's 42nd Annual Conference) in Montreal. American Institut for Conservation of Historic and Artistic Works, Montreal, Canada.
60. Ghobadi, A., Emami, M. and Asslani, H., (2016), Analysis of rock deterioration in Nagsh-e Rostam relief by geospatial technology, Joint 44th Annual AIC Meeting (CAC-ACCR's 42nd Annual Conference) in Montreal. American Institut for Conservation of Historic and Artistic Works, Montreal, Canada.
59. Emami, M., Jafari, J., (2016), Archaeometallurgical studies on Arsenic Bronze from Lama (2<sup>nd</sup> Millennium BC), The Irano-German International Symposium on Archaeometry, 1-3 Nov., Iran, Tabriz

58. Yazdani, M., Emami, M., (2016), Research on Mina'i Bowl based on inscribed sample, ISF Conference, Transfer of Knowledge among Iran, France and Germany, Isfahan, Iran
57. Elikai, S., Emami, M., Garavand, M., (2016), Study of Ancient metalworking based on metal smelting slags discovered in Botkhaneh Cave region of Southern Kuhdasht County, 2th congress on Material Science in Conservation, Tehran, Iran
56. Melika Yazdani, Seyed Mohammad Amin Emami, Hossein Ahmadi, Mohammad Lamei Rashti, Davood Aligol, Mahnaz Abdollah Khan Gorji, (2016), 2th congress on Material Science in Conservation, Tehran, Iran
55. Emami, M., (2016), Preliminary archaeometallurgical studies on Bronze objects from "Lama" (2th Millennium BC), Iran, Archaeometry of ancient artifacts, materials and their technologies', Miskolc, Hungary
54. Karamad, Z., Emami, M., (2016), Research Studies on Persian Crucible Steel from Chahak, Iran, Metall 2016, Dehli, India
53. Emami, M., Parvaresh, A., (2016), Mineralogisch-petrochemische Untersuchungen an Kupfer Schlacken aus Sheikh-Ali ophiolite Kupfer Lagerstaetten. Kerman. Iran, Archaeometrie und Denkmalpflege, Goettingen, Germany
52. Emami, M., (2016), Crystallographic interpretation of mineral decompositions via Rietveld refinement strategy for clustering ancient ceramics, 30th European Crystallographic Meeting, 28 August – 1 September 2016, Basel, Switzerland
51. Maria Letizia Amadori, Gianluca Poldi, Alireza Askari Chaverdi, Pierfrancesco Callieri Mohammadamin Emami, (2016), Colour and materials of the new monumental gate excavated in the area of Persepolis (Fars, Iran), 41st International Symposium on Archaeometry (Kalamata 15-21 May), ISA2016, Athens, Greece
50. Emami, M., (2016), Cuprum, Quo Vadis: New Insight Considering the Migration of Copper Metallurgy along "Halil" River Basin in Kerman, south central Iranian desert, 41st International Symposium on Archaeometry (Kalamata 15-21 May), ISA2016, Athens, Greece