Decreto Rettore Università di Roma “La Sapienza” n. 2755/2018 del 19.11.2018

SILVANO MIGNARDI
Curriculum Vitae
ai fini della pubblicazione

Place Rome
Date 12.12.2018

Part I – General Information

Full Name	Silvano Mignardi
Citizenship	Italian
Spoken Languages	Italian, English

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,…)
University graduation	1987	Sapienza University of Rome	MS Geological Sciences
PhD	1992	Sapienza University of Rome	Earth Sciences
Licensure 01	1989	Sapienza University of Rome	Professional Geologist

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
1994	1996	Sapienza University of Rome	Postdoctoral Researcher
2000	-	Sapienza University of Rome	Researcher
2014	2020	MIUR	National Scientific Qualification as Associate Professor, SC 04/A1

IIIB – Other Appointments

Start	End	Institution	Position
1999/06	1999/10	CNR - National Research Council	Researcher
2005	-	ISI scientific journals (e.g., J. of Hazardous Materials, Chemical Engineering Journal, Science of the Total Environment, J. of Colloid and Interface Science, Environmental Science & Technology, Environment International, Ecotoxicology and Environmental Safety, Chemosphere, RSC Advances, J. of Integrative	Peer Reviewer (83 papers)

		Agriculture, J. of Environmental Management, Land Degradation & Development, J. of Environmental Chemical Engineering, Environmental Pollution)	
2006	2006	Sapienza University of Rome	Member of the final examination committee for the Ph.D. degree in Earth Sciences
2006	-	CNR - National Research Council	Associate Researcher to IGG-IGAG
2009	2010	Lehman College, City University of New York (CUNY), USA	Member of the 'Earth and Environmental Science' panel
2011	2011	Sapienza University of Rome	Member of the committee for the access to Ph.D. in Applied Sciences for the Protection of the Environment and Cultural Heritage
2013	2014	Sapienza University of Rome	Member of the committee for the access to Scuola Superiore di Studi Avanzati Sapienza
2015	2016	Sapienza University of Rome	Scientific Supervisor Post-doc Project "Aspetti tecnologici di produzione e provenienza delle materie prime di ceramiche del Levante mediante l'applicazione di tecniche analitiche non- e micro-invasive" (Dr. L. Medeghini)
2015	-	Journal of Integrative Agriculture	Member of the Editorial Board of the ISI scientific journal "Journal of Integrative Agriculture", Elsevier B.V. (official publication of the Chinese Academy of Agriculture)
2015	-	Sapienza University of Rome	Member of the board of directors of the Sapienza University Research Center CIABC
2016	-	Periodico di Mineralogia	Section Editor of the ISI scientific journal "Periodico di Mineralogia"
2016	2016	University of Pisa	Member of the final examination committee for the Ph.D. degree in Earth Sciences
2009	2012	Sapienza University of Rome	Member of the Executive Board of the Ph.D. in Earth Sciences
2014	-	Sapienza University of Rome	Member of the executive board of the Ph.D. in Earth Sciences
2017	2017	2nd International Caparica Conference on Pollutant Toxic Ions & Molecules, Caparica (Portugal), November 2017	Invited speaker
2018	2018	Canada Research Chairs Program	External evaluator of the nominee Prof. S. Wilson, University of Alberta, Canada

2018	2018	Sapienza University of Rome	Member of the committee for the access to Ph.D. in Earth Sciences
2010	2016	Sapienza University of Rome	Member of the Council of the Department of Earth Sciences
2013	2016	Sapienza University of Rome	Member of the Council of the Faculty of Sciences
2013	-	Sapienza University of Rome	Member of the Teaching Committee for BS and McS in Applied Sciences to Cultural Heritage
2010	-	Sapienza University of Rome	Bibliometric database representative of the Department of Earth Sciences

Part IV – Teaching experience

Year	Institution	Lecture/Course
2005-2010	Sapienza University of Rome	Ore microscopy (3 CFU), MS in Georesources
2005-2010	Sapienza University of Rome	Industrial rocks (3 CFU), MS in Georesources
2005-2010	Sapienza University of Rome	Methods of mineral exploration (3 CFU), MS in Georesources
2005-present	Sapienza University of Rome	Degradation of metals (3CFU), MS in Applied Sciences to Cultural Heritage
2005-2010	Sapienza University of Rome	Quality and control of industrial rocks (3CFU), BS in Geological Sciences
2010-2012	Sapienza University of Rome	Quality and control of industrial rocks (6CFU), BS in Geological Sciences
2010-2014	Sapienza University of Rome	Ore deposits (6 CFU), MS in Exploration Geology
2010-2014	Sapienza University of Rome	Extraction and processing of industrial minerals and rocks (6 CFU), MS in Applied Geology
2012-2015	Sapienza University of Rome	Metallogenetic processes and geodynamic environments (6 CFU), BS in Geological Sciences
2015-present	Sapienza University of Rome	Ore deposits and processing of industrial minerals and rocks (6 CFU), MS in Exploration Geology and Applied Geology
2015-present	Sapienza University of Rome	Metallogenetic processes and industrial minerals and rocks (6 CFU), BS in Geological Sciences
2005-present	Sapienza University of Rome	Supervisor of 16 BS thesis and 8 MS thesis
2010-2013	Sapienza University of Rome	Supervisor of 2 Ph.D. thesis in Applied Sciences for the Protection of the Environment and Cultural Heritage

Part V - Society memberberships, Awards and Honors

Year	Title
2001-present	Society of Economic Geologists, membership
1996-2007	Society for Geology Applied to Mineral Deposits, membership

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2004	Indagine multidisciplinare su natura, origine ed età di materiali archeologici	Sapienza University of Rome, research grants	€ 40000 (I)
2006	Contributo alla riduzione della CO_2 nell'atmosfera con intervento alla sorgente di emissione	PRIN 2006, Rome Research Unit	€ 35000 (I)
2006	Studio sugli effetti degli ammendanti fosfatici sull'immobilizzazione e sulla fitodisponibilità di metalli pesanti in suoli inquinati	Sapienza University of Rome, research grants	€ 18000 (PI)
2008	Studio sull'immobilizzazione di metalli pesanti mediante fosfati in acque e suoli inquinati: prove sperimentali in colonne ed in batch	Sapienza University of Rome, AST grants	€ 15000 (PI)
2010	Interazione fra minerali e biosfera: conseguenze per l'ambiente e la salute umana	PRIN 2010-2011, Rome Research Unit	€ 57300 (I)
2011	Efficienza del processo di carbonatazione della CO_2 in "waste" saline multielementari	Sapienza University of Rome, research grants	€ 10000 (PI)
2013	È possibile definire gli aspetti tecnologici di produzione e la provenienza delle materie prime delle ceramiche archeologiche con l'applicazione di tecniche analitiche non e micro-invasive?	Sapienza University of Rome, research grants	€ 7000 + 22946 (research grant) (PI)
2014	Sintesi di carbonati "heavy metal-bearing" cristallini e amorfi mediante reazione tra CO_2 e soluzioni acquose multi-elementari: efficienza del processo di smaltimento di metalli tossici e sequestro della CO_2	Sapienza University of Rome, research grants	€ 7000 (I)
2015	Il contributo degli isotopi di Pb, Cu e Sn nello studio di ceramiche	Sapienza University of Rome, research grants	€ 11100 (PI)

	archeologiche: tecnologie di produzione e provenienza delle materie prime		
2016	Sintesi di carbonati heavy metal-bearing mediante reazione tra carbonati di Mg e soluzioni acquose multi-elementari di metalli tossici: efficienza del processo di smaltimento di metalli tossici	Sapienza University of Rome, research grants	€ 12460 (I)
2016	Motya and the interaction of Mediterranean cultures in the second and first millennium B.C. – Interdisciplinary approaches	Sapienza University of Rome, research grants	€ 60000 (I)
2017	La ceramica di Gerico (Palestina): tecnologie di produzione	Sapienza University of Rome, research grants	€ 9000 + 23750 (research grant) (PI)

Part VII – Research Activities

Keywords
Toxic metals
Phosphate treatment
CO_2 sequestration
Mineral carbonation
Archaeological ceramic
Mortar dating

Brief Description

My research is mainly focused on the mechanisms of the immobilization of toxic metals in contaminated water and soil through phosphate treatment by the application of both synthetic and natural phosphate amendments.

My studies also concern CO_2 sequestration through mineral carbonation in aqueous solution. Recently my research activity focused in particular on the synthesis of amorphous hydrated Mg-carbonates for both CO_2 sequestration and toxic metals removal from industrial wastewater.

The mineralogical, petrographic and geochemical characterization of materials used in Cultural Heritage is another main topic of my research activity. In this view, I have been addressed to the study of Levantine archaeological ceramics to answer questions about the chemical composition of the ceramics, as well as firing temperature and redox state of the firing atmosphere, and to define the nature and the provenance of raw materials.

Moreover, my studies are also focused on the dating by radiocarbon of mortars as they represent potential tools to assess the chronology of the different construction phases of historical buildings.

Several experimental techniques are used for these purposes, including optical microscopy, X-ray powder diffraction, micro-Raman spectroscopy, electron microscopy, Fourier transform infrared spectroscopy and inductively coupled plasma atomic emission spectrometry.

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	35	Scopus	1991	2018
Papers [national]				

Books [scientific]				
Books [teaching]				

Total Impact factor	71.977
Total Citations	842
Average Citations per Product	24.057
Hirsch (H) index	13
Normalized H index*	0.464

*****H index divided by the academic seniority.

Part IX– Selected Publications

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

1) **Mignardi S**, Corami A, Ferrini V (2013) Immobilization of Co and Ni in mining-impacted soils using phosphate amendments. *Water, Air, and Soil Pollution* 224, 1447. IF = 1.685, cited by 15.

2) Ballirano P, De Vito C, **Mignardi S**, Ferrini V (2013) Phase transitions in the Mg-CO_2-H_2O system and the thermal decomposition of dypingite, $Mg_5(CO_3)_4(OH)_2 \cdot 5H_2O$: Implications for geosequestration of carbon dioxide. *Chemical Geology* 340, 59-67. IF = 3.482, cited by 23.

3) Nonni S, Marzaioli F, Secco M, Passariello I, Capano M, Lubritto C, **Mignardi S**, Tonghini C, Terrasi F (2013) ^{14}C Mortar Dating: The Case of the Medieval Shayzar Citadel, Syria. *Radiocarbon* 55, 514-525. IF = 1.037, cited by 9.

4) Medeghini L, **Mignardi S**, De Vito C, Bersani D, Lottici PP, Turetta M, Costantini J, Bacchini E, Nigro L, Sala M (2013) The key role of micro-Raman spectroscopy in the study of ancient ceramics: the case of Jordan potteries from the archaeological site of Khirbet al-Batrawy. *European Journal of Mineralogy* 25, 881-893. IF = 1.506, cited by 15.

5) Medeghini L, **Mignardi S**, De Vito C, Bersani D, Lottici PP, Turetta M, Sala M, Nigro L (2013) Is Khirbet Kerak Ware from Khirbet al-Batrawy (Jordan) local or imported pottery? *Analytical Methods* 5, 6622-6630. IF = 1.938, cited by 9.

6) Ballirano P, De Vito C, Medeghini L, **Mignardi S**, Ferrini V, Matthiae P, Bersani D, Lottici PP (2014) A combined use of optical microscopy, X-ray powder diffraction and micro-Raman spectroscopy for the characterization of ancient ceramic from Ebla (Syria). *Ceramics International* 40, 16409-16419. IF = 2.605, cited by 20.

7) Medeghini L, Lottici PP, De Vito C, **Mignardi S**, Bersani D (2014) Micro-Raman spectroscopy and ancient ceramics: applications and problems. *Journal of Raman Spectroscopy* 45, 1244-1250. IF = 2.671, cited by 19.

8) De Vito C, Medeghini L, **Mignardi S**, Orlandi D, Nigro L, Spagnoli F, Lottici PP, Bersani D (2014) Technological fingerprints of Black-Gloss Ware from Motya (Western Sicily, Italy). *Applied Clay Science* 88-89, 202-213. IF = 2.467, cited by 11.

9) De Vito C, Medeghini L, **Mignardi S**, Ballirano P, Peyronel L (2015) Technological fingerprints of the Early Bronze Age clay figurines from Tell Mardikh-Ebla (Syria). *Journal of the European Ceramic Society* 35, 3743-3754. IF = 2.933, cited by 5.

10) Medeghini L, **Mignardi S**, De Vito C, Conte AM (2016) Evaluation of a FTIR data pretreatment method for Principal Component Analysis applied to archaeological ceramics. *Microchemical Journal* 125, 224-229. IF = 3.034, cited by 12.

11) De Angelis G, Medeghini L, Conte AM, **Mignardi S** (2017) Recycling of eggshell waste into low-cost adsorbent for Ni removal from wastewater. *Journal of Cleaner Production* 164, 1497-1506. IF = 5.651, cited by 8.

12) De Vito C, Medeghini L, Garruto S, Coletti F, De Luca I, **Mignardi S** (2018) Medieval glazed ceramic from Caesar's Forum (Rome, Italy): Production technology. *Ceramics International* 44, 5055-5062. IF = 3.057 (2017), cited by 1.

Other Main Publications

- Corami A, **Mignardi S**, Ferrini V (2007) Copper and zinc decontamination from single- and binary-metal solutions using hydroxyapatite. *Journal of Hazardous Materials* 146, 164-170. IF = 2.337, cited by 140.

- Corami A, **Mignardi S**, Ferrini V (2008) Cadmium removal from single- and multi-metal (Cd + Pb + Zn + Cu) solutions by sorption on hydroxyapatite. *Journal of Colloid and Interface Science* 317, 402-408. IF = 2.443, cited by 198.

- Corami A, D'Acapito F, **Mignardi S**, Ferrini V (2008) Removal of Cu from aqueous solutions by synthetic hydroxyapatite: EXAFS examination. *Materials Science and Engineering B – Solid State Materials for Advanced Technology* 149, 209-213. IF = 1.577, cited by 34.

- Ferrini V, De Vito C, **Mignardi S** (2009) Synthesis of nesquehonite by reaction of gaseous CO_2 with Mg chloride solution: Its potential role in the sequestration of carbon dioxide. *Journal of Hazardous Materials* 168, 832-837. IF = 4.144, cited by 97.

- Ballirano P, De Vito C, Ferrini V, **Mignardi S** (2010) The thermal behaviour and structural stability of nesquehonite, $MgCO_3 \cdot 3H_2O$, evaluated by in situ laboratory parallel-beam X-ray powder diffraction: New constraints on CO_2 sequestration within minerals. *Journal of Hazardous Materials* 178, 522-528. IF = 3.723, cited by 51.

- Ferrini V, Fayek M, De Vito C, **Mignardi S**, Pignatti J (2010) Extreme sulphur isotope fractionation in the deep Cretaceous biosphere. *Journal of the Geological Society* 167, 1009-1018. IF = 3.312, cited by 13.

- **Mignardi S**, De Vito C, Ferrini V, Martin RF (2011) The efficiency of CO_2 sequestration via carbonate mineralization with simulated wastewaters of high salinity. *Journal of Hazardous Materials* 191, 49-55. IF = 4.173, cited by 31.

- **Mignardi S**, Corami A, Ferrini V (2012) Evaluation of the effectiveness of phosphate treatment for the remediation of mine waste soils contaminated with Cd, Cu, Pb, and Zn. *Chemosphere* 86, 354-360. IF = 3.137, cited by 88.

- Medeghini L, Fabrizi L, De Vito C, **Mignardi S**, Nigro L, Gallo E, Fiaccavento C (2016) The ceramic of the "Palace of the Copper Axes" (Khirbet al-Batrawy, Jordan): A palatial special production. Ceramics International 42, 5952-5962. IF = 2.986, cited by 4.

Roma, 12 Dicembre 2018