Decreto Rettore Università di Roma "La Sapienza" D.R. n. **810/2020 del 03/03/2020**

CATERINA MARIA PIA SANDRA DE VITO

Curriculum Vitae

ALL. B

Place: **Rome, Italy**
Date 16.03.2020

Part I – General Information

Full Name	Caterina Maria Pia Sandra De Vito
Citizenship	Italian
Spoken Languages	Italian, English

Part II – Education

Type	Year	Institution	Notes (Degree, Experience)
University Graduation	1998	Sapienza University of Rome	MS Geological Sciences
Research fellowship (Borsa di Studio CNR)	1999	Consiglio Nazionale delle Ricerche (CNR) of Rome	C.S. PER GLI EQUILIBRI SPERIMENTALI IN MINERALI E ROCCE, c/o Dept. Earth Sciences, Sapienza University
PhD	2002	Sapienza University of Rome	Earth Sciences
Research fellowship (CNR)	2004/04-06	CNR - National Research Council	Institute of Geoscienze e Georisorse, c/o Dept. Earth Sciences, Sapienza University

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
2002/02	2004/01	Sapienza University of Rome	Research fellowship (Assegno di Ricerca biennale), Department of Earth Sciences
2005/01	2006/12	Sapienza University of Rome	Research fellowship (Assegno di Ricerca biennale), Department of Earth Sciences
2007/08	2009/07	Sapienza University of Rome	Research fellowship (Assegno di Ricerca biennale), Department of Earth Sciences
2010	-	Sapienza University of Rome	**Researcher**
2016/11	-	Sapienza University of Rome	Member of the Academic Senate, Sapienza University
2016	-	Sapienza University of Rome	"Commissione Mista per le riviste di

			Ateneo”
2016	2019/11	Sapienza University of Rome	Commissione Master
2018/11	2019	Sapienza University of Rome	Commissione Statuto
2018	-	Sapienza University of Rome	Delegate of the Rector
2018	-	Sapienza University of Rome	Delegate TICHE and DTBC for the Dept. of Earth Sciences
2010	2019	Sapienza University of Rome	Member of the Council of the Department of Earth Sciences
2010	2019	Sapienza University of Rome	Member of the Council of the Faculty of Sciences
2019	**2028**	**MIUR**	**National Scientific Qualification as Associate Professor, SC 04/A1**

IIIB – Other Appointments

Start	End	Institution	Position
2009	-	CNR - National Research Council	Associate Researcher to IGG-IGAG
2016	2016	CNR- National Research Council	Member of the committee of the “BANDO N. 366.8 DTA RIC CONCORSO PER TITOLI ED ESAMI AI SENSI DELL’ART. 4, COMMA 6, DELLA LEGGE 30 OTTOBRE 2013 N. 125 RISERVATO
2016	2016	Sapienza University of Rome	Member of the committee for the access to Ph.D. Earth Sciences
2016/11	-	Sapienza University of Rome	Member of the Academic Senate, Sapienza University
2018	-	Sapienza University of Rome	Delegate of the Rector of the Sapienza University
2019	-	Scientific Reports-Nature Group Journal	Member of the Editorial Board of the ISI journal “Scientific Reports”, Nature-group Journal
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”
2017	2017	University of Valencia	Member of the final examination committee for the Ph.D. degree in *Experimental Techniques* in Chemistry
2017	2017	Nano-Innovation 2017, Rome (Italy), September 2017	Invited speaker
2010	-	Sapienza University of Rome	Member of the Teaching Committee for BS and McS in Applied Sciences to Cultural Heritage
2018	-	Sapienza University of Rome	Member of the Teaching Committee for BS in Environmental Sciences
2012	2012	Sapienza University of Rome	Member of the final examination committee for the Ph.D. degree in Earth Sciences

2019	2019	Sapienza University of Rome	Member of the final examination committee for the Ph.D. degree in Earth Sciences
2012	-	ISI scientific journals (Applied Clay Science, American Mineralogist, Canadian Mineralogist, Energies, Microchemical Journal, Ore Geology Reviews, Scientific Reports, Nature Communications	Peer Reviewer (53 papers)

Part IV – Teaching experience

Year	Institution	Lecture/Course
2010-present	Sapienza University of Rome	Ore Minerals and Gemstones: Use and Provenance (6CFU), **MS** in Sciences and Technologies for the Conservation of Cultural Heritage
2012-2017	Sapienza University of Rome	Petrography (6CFU), **BS** in Technologies for the Conservation and Restoration of Cultural Heritage
2017-present	Sapienza University of Rome	Stone Materials Laboratory (6CFU) **BS** in Technologies for the Conservation and Restoration of Cultural Heritage
2018-present	Sapienza University of Rome	Petrography (3CFU), **BS** in Environmental Sciences
2012-present	Sapienza University of Rome	Supervisor of 9 BS theses
2012-present	Sapienza University of Rome	Supervisor of 16 MS theses
2010-present	Sapienza University of Rome	Supervisor of 3 Ph.D. theses in Applied Sciences for the Protection of the Environment and Cultural Heritage
2015-2019	Sapienza University of Rome	Co-Supervisor of 2 Ph.D. theses in Applied Sciences for the Protection of the Environment and Cultural Heritage
2017-present	Sapienza University of Rome	Tutor QuID

Part V - Society memberberships, Awards and Honors

Year	Title
2014.11.19	Prize for the Excellent Teaching in the Faculty of SMFN-2012-2013 Academic Year
2017.03.29-	Prize for the Excellent Teaching in the Faculty of SMFN-2016-2017 Academic Year

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 (I)
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 (I)
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 (I)
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) (I)
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 (PI)
2015	Il contributo degli isotopi di Pb, Cu e Sn nello studio di ceramiche archeologiche: tecnologie di produzione e provenienza delle materie prime	Sapienza University of Rome, research grants	€ 11100 (I)
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 (PI)
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	Motya: investigating ancient Mediterranean cultures. Excavation, interdisciplinary study and analyses, interpretation and outreach (Scavi Archeologici)	Sapienza University of Rome, research grants (Scavi Archelogici)	€78.000 (I)
2017	Bando Visiting Professor: Docente Proponente: De Vito C	Sapienza University of Rome, research grants (Bando Professori Visitatori per attività di ricerca congiunta 2017 Elenco visite proposte per il finanziamento Categoria A (durata 30 giorni)	€ 4500 +€ 500 cofin. (PI)
2017(bando)	FIBRES: a multidisciplinary mineralogical, crystal-chemical and biological project to amend the paradigm of toxicity and cancerogenicity of mineral fibres" 2019-2021 (cofinanziato con 449000 euro)	**PRIN 2019-2021** Universitiy of Modena e Reggio Emilia	(cofinanziato con € 449000) (I).
2018	Rimozione del Cd da soluzioni inquinate mediante carbonati sintetici: efficienza dello scambio ionico "toxic versus environmental friendly metals" e prove di desorption.	Sapienza University of Rome, research grants	€13.000 PI
2018	A state-of-the art TEM-based platform for advanced Imaging and Diffraction Analyses - TEMIDA	Sapienza University of Rome, research grants (Grandi Attrezzature Scientifiche)	€ 462.000 (I)
2018	Paikuli Archaeological Project. Settlements and Human Impact between the Diyala River and Qaradagh Range.	Sapienza University of Rome, research grants (Scavi Archelogici)	€ 35.000 (I)
2019	Jericho from Pre-Pottery Neolithic to the Bronze and Iron Ages. Investigating a key-site of the ancient Near East - a multidisciplinary approach	Sapienza University of Rome, research grants (Scavi Archelogici)	€88.000 (I)
2019	Tecnologie produttive dell'acquedotto Traiano: una infrastruttura del passato parte integrante del presente	Sapienza University of Rome, research grants	€14.000 + €23.787 (I)

Part VII – Research Activities

Keywords	**Brief Description**
Pegmatite CO_2 sequestration Mineral carbonation Toxic metals Archaeological	In the past, my research interest was mainly focused on mineralogy, petrology and geochemistry of granitic pegmatites (NYF- LCT and Mixed). This special class of rocks contains rare minerals and gems such as Nb-Ta oxides, emerald, tourmaline, topaz etc. In the last ten years, my research is focusing on CO_2 sequestration through mineral

Materials
Ancient Alloys

carbonation in aqueous solution. In the last years, a method for both the CO_2 sequestration and toxic metals removal from industrial wastewater has been developed, starting from synthetic amorphous hydrated Mg-carbonates.

Another topic of my research activity involves archaeological materials as ceramics, stones and metallic objects. The results of the studies on these materials give useful information on nature and provenance of the raw materials and technological background of ancient populations. In addition, the study of ancient metal artefacts improves the knowledge on production technology, corrosion process and burial history. These results can also help specialists in restoration and conservation of Cultural Heritage artefacts

The techniques used for these purposes are: optical microscopy, X-ray powder diffraction, micro-Raman spectroscopy, Fourier transform infrared spectroscopy, Scanning Electron Microscopy equipped with X-ray energy-dispersive spectroscopy (SEM-EDS,), Focused Ion Beam Field Emission -Scanning Electron Microscopy with energy dispersive X-ray microanalysis (FIB-FESEM-EDS), FIB-FESEM, HR-FESEM-EDS, Electron Microprobe analysis (EMPA), Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES) and Laser Ablation – Inductively Coupled Plasma – Mass Spectrometry (LA-ICP-MS) and voltammetry of immobilized microparticles (VIMP).

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	**48**	**Scopus**	**2001**	**2020**
Papers [national]				
Books [scientific]				
Books [teaching]				

Total Impact factor	**124.98**
Total Citations	**790 (Scopus)**
Average Citations per Product	**16.458**
Hirsch (H) index	**16**
Normalized H index*	**16/20 (0.8)**

*****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. Fabrizi L., Nigro L., Spagnoli F., Ballirano P., **De Vito C**. (**2020**). The Red Slip Ware from Motya (Sicily, Italy): A multi-analytical approach for determining the production technology and the nature of the raw materials. ***Ceramics International*** 46, 1640-1651. **IF = 3.450, cited by 3.**

2. Di Fazio M., Felici A.C., Catalli F**., De Vito C**. (**2019**). Microstructure and chemical composition of Roman orichalcum coins emitted after the monetary reform of Augustus (23 B.C.). ***Scientific Reports*** 9, Article number 12668. **IF = 4.011, cited by 2.**

3. Domènech-Carbò M.T., Di Turo F., Montoya N., Catalli F., Domènech-Carbò, A., **De Vito C**. **(2018).** FIB-FESEM and EMPA results on Antoninianus silver coins for manufacturing and corrosion processes. ***Scientific Reports***, 8, Article number 10676. **IF = 4.011, cited by 9.**

4. Aurisicchio C., Conte A.M., Medeghini L., Ottolini L., **De Vito C.** (**2018**). Major and trace element geochemistry of emerald from several deposits. Implications for genetic models and classification schemes. ***Ore Geology Reviews,*** 94, 351-366. **IF = 3.387, cited by 6**.

5. **De Vito C**., Medeghini L., Mignardi S, Coletti F., Contino A. **(2017).** Roman glazed inkwells from the "Nuovo Mercato di Testaccio" (Rome, Italy): production technology. ***Journal of the European Ceramic Society***, 37(4), pp. 1779-1788. **IF = 2.933, cited by 8**.

6. **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 13**

7. **De Vito C.**, Medeghini L., Mignardi S., Orlandi D., Nigro L., Spagnoli F., Lottici P.P., 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 19.**

8. 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 28.**

9. Mignardi S., **De Vito C.**, Ferrini V., Martin R.F. (**2011)** The efficiency of CO_2 sequestration via carbonate mineralization with simulated wastewaters of high salinity. ***Journal of Hazardous Material****s* 191, 49-55. **IF = 4.173**, **cited by 37**

10. 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 60**.

11. 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 106**.

12. Martin R.F & **De Vito C**. **(2005**) The patterns of enrichment in felsic pegmatites ultimately depend on tectonic setting. ***The Canadian Mineralogist***, 543, 2027-2048. **IF=1.259 cited by 95.**

Other Main Publications

- Medeghini L., Fayek M., Mignardi S., Coletti F., Contino A., **De Vito C** (**2020**). A provenance study of Roman lead-glazed ceramics using lead isotopes and secondary ion mass spectrometry (SIMS). ***Microchemical Journal*** 54, 104519. - **IF= 3.206**, **cited by 0**

- Fabrizi L., Nigro L., Cappella F., Spagnoli F, Guirguis M., Niveau-de-Villedary A.M., Doménech-Carbó M.T., **De Vito C**., Doménech-Carbò A. (**2020**). Discrimination and Provenances of Phoenician Red Slip Ware Using both the Solid State Electrochemistry and Petrographic Analyses. ***Electroanalysis*** 32, 258-270. **IF= 2,691, cited by 0**

- Mignardi S., Archilletti L., Medeghini L., **De Vito C**. (**2020**). Valorization of eggshell Biowaste for Sustainable environmental Remediation. ***Scientific Reports*** 10, Article number 2436. **IF = 4.011, cited by 0**

- Di Fazio M., Felici A.C., Catalli F., María Doménech-Carbó M.T., **De Vito C**., Doménech-Carbò A.(**2020**). Solid-state electrochemical characterization of emissions and authorities producing Roman brass coins. ***Microchemical Journal*** 152, 104306. **IF= 3.206**, **cited by 0**

- Bernabale M., Nigro L., Montanari D., Niveau-de-Villedary A.M., **De Vito C.** (**2019).** Microstructure and chemical composition of a Sardinian bronze axe of the Iron Age from Motya (Sicily, Italy). ***Materials Characterization*** 58, 109957. **IF**=3.220, **cited by 0**

- Medeghini L., Ferrini V., Di Nanni F., D'Uva F., Mignardi S., **De Vito C. (2019**) Ceramic pipes of the Roman aqueduct from Raiano village (L'Aquila, Italy): A technological study. ***Construction and Building Materials*** 218, 618-627. **IF=4.046**, **cited by 0**

- Fabrizi L., Di Turo F., Medeghini L., Di Fazio M., Catalli F., **De Vito C**. (**2019**) The application of non-destructive techniques for the study of corrosion patinas of ten Roman silver coins: The case of the medieval Grosso Romanino. ***Microchemical Journal*** 145, 419-427. **IF= 3.206**, **cited by 8**

- Di Fazio M., Di Turo F., Medeghini L., Fabrizi L., Catalli F., **De Vito C**. (**2019**) New insights on medieval Provisini silver coins by a combination of non-destructive and micro-invasive techniques. ***Microchemical Journal*** 144, 309-318. **IF= 3.206**, **cited by 9**

- **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 = 3.450, cited by 6.**

- Di Turo F., Montoya N., Piquero-Cilla J., **De Vito C.**, Coletti F., Favero G., Doménech-Carbó M.T. Doménech-Carbò A. (**2018**). Dating Archaeological Strata in the Magna Mater Temple Using Solid-state Voltammetric Analysis of Leaded Bronze Coins. ***Electroanalysis*** 30, 361-370. **IF = 2.691, cited by 12.**

- Di Turo F., Montoya N., Piquero-Cilla J., Coletti F., De Luca I., **De Vito C**., Doménech-Carbò A. (**2018**) Electrochemical discrimination of manufacturing types of pottery from Magna Mater Temple and Fora of Nerva and Caesar (Rome, Italy). ***Applied Clay Science*** 162, 305-310. **IF = 3.890, cited by 7.**

- Di Turo F., Montoya N., Piquero-Cilla J., **De Vito C.**, Coletti F., Favero G., Doménech-Carbò, A. **(2017)** Archaeometric analysis of Roman bronze coins from the Magna Mater temple using solid state voltammetry and electrochemical impedance spectroscopy. ***Analytica Chimica Acta*** 955, 36-4- **IF= 5.256**, **cited by 27**

- Medeghini L., Mignardi S., **De Vito C.**, Conte A.M. (**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 19.**

- 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 12**.

- Ballirano P., **De Vito C.**, Medeghini L., Mignardi S., Ferrini V., Matthiae P., Bersani D., Lottici P.P. (**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 28.**

- Medeghini L., Lottici P.P., **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 25.**

- Poretti G., Brilli M., **De Vito C**., Conte A.M., Borghi A., Günther D., Zanetti A. (**2017**). New considerations on trace elements for quarry provenance investigation of ancient white marbles. ***Journal of Cultural Heritage*** 28, 16-26. **IF = 1.706, cited by 13.**

- Medeghini L., Mignardi S., **De Vito C.**, Macro N., D'Andrea M., Richard S. (**2016**). New insights on Early Bronze Age IV pottery production and consumption in the southern Levant: The case of Khirbat Iskandar, Jordan. ***Ceramics International*** 42, 18991-19005. **IF = 2.986, cited by 8.**

- Martin R.F. & **De Vito C**. (**2014**). The late-stage miniflood of Ca in granitic pegmatites: an open-system acid-reflux model involving plagioclase in the exocontact. ***The Canadian Mineralogist***, 543, 2027-2048. **IF=0.988, cited by 19.**

- **De Vito C**., Ferrini V., Mignardi S., Cagnetti M., Leccese F. (**2012**). Progress in carbon dioxide sequestration via carbonation of aqueous saline wastes. ***Periodico di Mineralogia*** 81, 333-344. **cited by 18.**

- 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 15.**

- Martin R.F., **De Vito C**., Pezzotta F. (**2008**). Why is amazonitic K-feldspar an earmark of NYF-type granitic pegmatites? Clues from hybrid pegmatites in Madagascar. ***American Mineralogist*** 93, 263-269. **IF=1.77, cited by 10.**

- **De Vito C.**, Pezzotta F., Ferrini V., Aurisicchio C. (**2006**) Nb–Ti–Ta oxides in the gem-mineralized and "hybrid" Anjanabonoina granitic pegmatite, central Madagascar: a record of magmatic and postmagmatic events. ***The Canadian Mineralogist*** 44, 87-103. **IF=1.187, cited by 26.**

- Aurisicchio C., **De Vito C,** Ferrini V., Orlandi P. **(2001).** Nb-Ta oxide minerals from miarolitic pegmatites of the Baveno pink granite, NW Italy. ***Mineralogical Magazine*** 65, 509-522. **IF=1.030, cited by 24.**

Roma, 16 Marzo 2020