

# **Dr. Rosa Maria Di Maggio**

## ***BSc, MEdSc(Hons), CGeol***

### **Personal Information**

Title and name	Dr. Rosa Maria Di Maggio
Date of birth	19.04.1969
Nationality	Italian
Profession	Forensic Geologist

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### **Accomplishments**

Rosa Maria Di Maggio has a MEdSc cum laude with a specialization in Volcanology and Petrography at University Sapienza of Rome. She is Expert Witness and Independent Consultant on Forensic Geology and she has more than fifteen years of experience in the field of forensic geology, ten of them spent at the Italian Forensic Science Police Department. She carried out more than eighty criminal cases with reference to analysis of soil and inorganic materials, numerous high profile cases and international criminal cases. Expert of the scene of the crime and as collector of inorganic traces and micro-traces.

Main competences: expert in judicial site survey and in gathering of inorganic traces and micro-traces, video-photographic documentation; performance of technical analysis on soils, rocks, explosives, various materials, precious metals, gems and unknown powders. Technical analysis: determination of the colour, morphological study, granulometrical separation, X-ray Diffraction (XRD), Scanned Electronic Microscopy and Energy-Dispersive X-ray Spectroscopy (SEM-EDX), observation of thin sections of the soils and rocks by means of polarized microscope; performance of chemical and physical analysis, Raman Spectroscopy and Fourier Transform Infrared Spectroscopy (FT-IR). Teaching activity on forensic geology at Universities, international conferences and at Police Departments.

Rosa Maria published several scientific publications and she is the co-author and the editor of the first Italian book on forensic geology.

Rosa Maria is adjunct Professor at University of Florence, for post graduated master courses in Forensic Science. She is a chartered geologist and she is member of Steering Committee of the Register of Chartered Geologist of Lazio region for the four-years period 2013-2017. Actually she is member of Steering Committee of IUGS Initiative on Forensic Geology, within International Union of Geological Science, as Officer for Europe and Representative for Italy. She is a registered expert witness at the Criminal Court of Rome. Scientific advisor for Television Productions.

### **Actual Employment and Professional Skill**

Forensic Geologist, Expert Witness and Independent Consultant (from 2012).

- Performance of Forensic Geoscience activities, with particular reference to judicial site survey procedures, gathering of traces of soil, rocks and various materials from the scene of the crime and from various surfaces, photographic documentation, technical analysis, drafting of scientific reports, witness in the Courts of Justice.
- Performance of geological, chemical and physical analysis on soils and rocks with particular

reference to determination of the soil colour, morphological study of soil particles, granulometrical separation, X-ray Diffraction (XRD), Scanned Electronic Microscopy and Energy-Dispersive X-ray Spectroscopy (SEM-EDX), observation of thin sections of the soil by means of polarized microscope and Raman Spectroscopy.

- Performance of chemical analysis on explosives, various materials, precious metals, gems and unknown powders with particular reference to X-ray Diffraction (XRD), Scanned Electronic Microscopy and Energy-Dispersive X-ray Spectroscopy (SEM-EDX), Raman Spectroscopy and Fourier Transform Infrared Spectroscopy (FT-IR).
- Teaching activities for courses on Forensic Geology: judicial site survey techniques, methods of gathering of soils samples on the crime scene and on various surfaces, analytical techniques, drafting on forensic soil reports, witness in the courts.

## Past Employment

Ministry of the Interior, Italy (2001-2011).

Forensic Geologist, Forensic Science Police Department (Servizio Polizia Scientifica).

- Management of Soil Laboratory with particular reference to technical sector and administrative sector.
- Teaching activities for specialization and refresher courses on Forensic Science Police techniques, which include: judicial site survey techniques, methods of gathering of soils samples on the crime scene and on various surfaces, analytical techniques, drafting on forensic soil reports, witness in the courts.
- Performance of ISO 9001 Quality Management System activities, with particular reference to drafting and development of technical procedures, rules and regulations.

## Key Specialities

Forensic Geology, Volcanology, Mineralogy, Petrography, Sedimentology, Geomorphology, Technical Geology, Geoarchaeology.

## Affiliations

IUGS Initiative on Forensic Geology: Officer for Europe and Representative for Italy

Italian Register of Geologist: A.P. sez. A nr.1538

## Education

Università “Roma Tre”, Roma; CGeol (2000)

Università “Sapienza”, Roma; MEdSc cum laude (1999)

Liceo Scientifico “Cavour”, Roma; BSc.

## Selected Publications

Barone P.M., Ferrara C., Di Maggio R.M., “Courtroom, cemetery, and classroom: the different aspects of the forensic knowledge”. In Proceedings of the 4<sup>th</sup> European Meeting on Forensic Archaeology, Pontoise (France) 28/29 agosto 2015.

Barone P.M., Di Maggio R.M., Ferrara C., “Not necessarily buried bodies: forensic GPR investigations from criminal to civil justice”. In Proceedings of the 8<sup>th</sup> International Workshop on Advanced Ground Penetrating Radar (IWAGPR), IEEE, Firenze 7/10 luglio 2015. DOI:10.1109/IWAGPR.2015.7292681.

Barone P.M., Di Maggio R.M., Ferrara C., “Forensic Geoscience during both criminal/civil investigations and courtroom trials”. In Proceedings of the 7<sup>th</sup> European Academy of Forensic Science Conference, Prague, EAFS 15/19 settembre 2015.

- Di Maggio R.M., “La fatturazione elettronica per le Pubbliche Amministrazioni”. *Professione Geologo, Notiziario dell’Ordine dei Geologi del Lazio*, n. 45 (2015) pp. 26-28.
- Barone P.M., Di Maggio R.M., Ferrara C., “Forensic Geo-Archaeology in Italy: Materials for a Standardization”. *International Journal of Archaeology, Special Issue: Archaeological Sciences*. Vol. 3, No. 1-1, 2015, pp. 45-56. DOI: 10.11648/j.ija.s.2015030101.16.
- Barone P.M., Ferrara C., Di Maggio R.M., “Forensic GPR: explaining hyperbolas in the Italian courtroom”. *Forensic Geoscience: Future Horizons, Conference Proceedings, Geological Society of London* (2014) p.75.
- Agostini V., Bisogni K., Bui L., Buscone D., Caterina B.M., Chiti E., Colombo M.L., Corradini I., Di Maggio R.M., Giannone M., Milani C., Musio S., Pagliano A., Romano R., Vanin S. *Criminalistica e Scienze Forensi. Indagini Criminalistiche e professioni forensi nel Processo Penale*. Pubblicazione Formato Ebook, 22 Luglio Editore - Meeting Service (2014).
- Di Maggio R.M., “Geological Analysis of Soil and Anthropogenic Material. Three case studies”. In press for Springer.
- Giampaoli S., Berti A., Di Maggio R.M., Pilli E., Valentini A., Valeriani F., Gianfranceschi G., Barni F., Ripani L., Romano Spica V., “The environmental biological signature: NGS profiling for forensic comparison of soils”. *Forensic Science International*, first published online April, 2014, <http://www.sciencedirect.com/science/article/pii/S0379073814000899>; *Forensic Science International* 240 (2014) pp.41-47.
- Di Maggio R.M., “Soil Forensics in Italy: Historical background and characterization of soil traces evidence. Some cases studies”. IUGS-IFG RFCFS, Moscow, 22 October 2013, Booklet of Abstract, 33-34.
- Di Maggio R.M. & Nuccetelli, L., “Analysis of geological trace evidence in a case of criminal damage to graves”. In: Pirrie, D., Ruffell, A. & Dawson, L.A. (eds) *Environmental and Criminal Geoforensics*, Geological Society, London, Special Publications, 384, (2013) pp.75-79 (first published online May, 2013, updated version published online (2013), <http://dx.doi.org/10.1144/SP384.2>).
- Magni P., Di Maggio R.M., “Le scienze naturali ad applicazione forense (zoologia, botanica e geoscienze)”. In: Valli R., *Le indagini scientifiche nel procedimento penale*. A. Giuffrè Editore, Milano, (2013) pp. 711-730.
- Di Maggio R.M., “A Case of Damage to Graves: Analysis of Geological Microtraces”. The 6<sup>th</sup> European Academy of Forensic Science Conference, The Hague, EAFS 2012 - Towards Forensic Science, Abstract book (2012) p.133.
- Di Maggio R.M., Nuccetelli L., “Alkaline Potassic Volcanites In Roman Soils; Silent Witnesses In an Organized Crime Case”. The 3<sup>rd</sup> International Conference on Criminal and Environmental Soil Forensics, Long Beach, Abstracts in webprogramcd, Session 8066, Paper 58551 (2010).
- Di Maggio R.M., Maio M., Nuccetelli L., “Geologia forense”. In: Picozzi M, Intini A. (a cura di) *Scienze Forensi: Teoria e Prassi dell’Investigazione Scientifica*. UTET, Torino (2009) pp.255-266.
- Di Maggio R.M., Nuccetelli L., “Forensic soil analyses applied to the Laura M. homicide case”. The 26<sup>th</sup> Geological Society of America Annual Meeting, Philadelphia, Abstract with Programs, 38(7) (2006) p.407.
- D’Uffizi M., Di Maggio R.M., Nuccetelli L., Sammuri P., “Soil laboratory: activities and development”. *Proceedings of the 3<sup>rd</sup> European Academy of Forensic Science Meeting, Istanbul, Forensic Science International*, 136(I)(2003) p.114.