

**ROSA M. FLORES, Ph.D.**  
**Assistant Professor**  
**Environmental Engineering Department**  
**Marmara University**  
**Tel. (+90) 216 348 0292 / 519**  
[rmflores@mtu.edu](mailto:rmflores@mtu.edu)



<http://www.linkedin.com/pub/rosa-flores/90/472/4b7>

### **Summary of Qualifications**

Theory, operation, and maintenance of (1) multidimensional gas chromatograph with time-of-flight mass spectrometer (Leco Pegasus 4D, Agilent 6890, GC×GC-TOF-MS) and gas chromatograph with quadruple mass spectrometer (Agilent 5890, GC-MS), (2) Gerstel programmable temperature vaporizer (PTV) inlet for gas chromatograph and Gerstel thermal desorption unit (TDU), (3) CO<sub>2</sub> supercritical fluid extraction (Applied Separations Spe-ed SFE prime), (4) spectrometric analytical techniques atomic absorption spectrometry (AA) and Inductively Coupled Plasma Atomic Emission Spectroscopy (Thermo Jarrell Ash ICP-AES), and (5) air quality monitoring systems such as NO<sub>2</sub>, SO<sub>2</sub>, and particulate matter analyzers, and high-volume and low-volume sampling. Operation of high pressure liquid chromatograph with mass spectrometer (Thermo Scientific Accela HP-LCMS). Extensive experience on method development and quality control. Self-learning and problem solving skills. Fluent in Spanish (native) and English.

### **Education**

2013	Ph.D., Environmental Engineering, Michigan Technological University. USA.
2006	M.S. Advanced Technology, Research Center of Applied Science and Advanced Technology (CICATA). Mexico.
2002	B.S. Chemical Engineering, Technologic Institute of Ciudad Madero (ITCM). Mexico.

### **Professional experience**

2014-present	Assistant professor. Environmental Engineering Department, Marmara University. Turkey.
2012-13	Teaching assistant. Civil and Environmental Engineering, Michigan Technological University. USA.
2008-13	Research assistant. Civil and Environmental Engineering Department, Michigan

Technological University. USA.

- 2007-08 Research assistant. Molina Center for Energy and the Environment (MCE<sup>2</sup>). Mexico, D.F.
- 2006 Research assistant. Metropolitan Autonomous University. Azcapotzalco, Mexico.
- 2004-07 Research assistant. CICATA, Mexico.
- 2003-05 Technical and non-technical English instructor. ITCM, Mexico.
- 2002 Research assistant. Environmental Sciences Research Center. Colima University, Mexico.

### **Teaching experience**

- Fall 2014 Instructor of courses Air pollution control processes (ENVE-341) and Environmental Engineering Instrumental Analysis (ENVE-404). Environmental Engineering Department. Marmara University.
- 2012-13 Teaching Assistant of Environmental Engineering for Environmental Engineers and Civil Engineers (ENVE-1501, CE-1000, and ENVE-3503) at the Civil and Environmental Engineering department at Michigan Tech.
- June 2011 Developed and taught a laboratory experiment "Identification of carboxylic acids using liquid chromatography and tandem mass spectrometry (LC-MS/MS)" to 10 graduate students

### **Awards**

- 2013 Graduate Research Excellence Award. Civil and Environmental Engineering Department, Michigan Technological University.
- 2011 Outstanding Student Paper Award Nomination at the 2011 American Geophysical Union Fall Meeting.
- 2008-12 Four year stipend and tuition support for Ph.D. from CONACyT (7% of awarded fellowships are for international studies).
- 2006 Five-month fellowship from Banco Santander (Mexico) S.A.
- 2006 Award for the best grades of the generation 2004-2006. CICATA, Mexico.
- 2005-06 Two-year stipend support for M.S. degree from the Mexican National Council on Science and Technology (CONACyT).
- 2004 Six-month stipend from National Polytechnic Institute (IPN).

### **Service**

- 2011-13 1.5 years serving as representative of the Civil and Environmental Engineering Department and member of the academic committee at the Graduate Student Government at Michigan Tech.
- 2012 Organization and facilitation of "Impostor Syndrome Workshop" to graduate students at Michigan Tech.

- 2009 Organization of the Environmental Engineering graduate seminar Spring semester at Michigan Tech.
- 2009 Reviewer of the Journal of Environmental Management.
- 2014 Reviewer of the Journal of African Studies and Development

### **Bibliography**

#### **Theses**

- Flores, R.M., Terpene and Terpenoid Emissions and Secondary Organic Aerosol Production. Ph.D. Thesis, Michigan Tech, USA, 2013.
- Flores, R.M., Metals in Particulate Matter PM<sub>10</sub> Suspended in the Air of Southern Tamaulipas During 2004, M.S. Thesis, CICATA, Mexico, 2006.
- Flores, R.M., Improvement of the Wastewater Quality at the Francisco I. Madero Refinery. B.S., Thesis, Technologic institute of Ciudad Madero, Mexico, 2002.

#### **Peer reviewed publications**

- Flores, R.M.**, Doskey, P.V., 2014. Using multidimensional gas chromatography to group secondary organic aerosol species by functionality. *Atmospheric Environment* (96), 310-321. DOI: 10.1016/j.atmosenv.2014.07.046
- R.M. Flores-Rangel**, P.F. Rodríguez-Espinosa, J.A. Montes De Oca-Valero, V. Mugica-Álvarez, M. E. Ortiz-Romero-Vargas, M. Navarrete-López, H.J. Dorantes-Rosales, S.S. Morales-García., 2014. Temporal Variation of PM<sub>10</sub> Metal Content in Tampico, Mexico. *Air Quality, Atmosphere and Health*. DOI: 10.1007/s11869-014-0291-6
- Flores-Rangel, R.M.**, Rodríguez-Espinosa, P.F., MontesdeOca-Valero, J.A., Mugica-Alvarez, V., Ortiz-Romero-Vargas, M.E., Navarrete-Lopez, M., Dorantes-Rosales, H.J., 2007. Metal Content in Air Samples Collected in an Urban Zone in Tampico, México. A first Survey. *Human and Ecological Risk Assessment* (13), 1359-1372. DOI: 10.1080/10807030701655608
- Morales-García, S.S., Rodríguez-Espinosa, P.F., Jonathan M.P., Muñoz-Sevilla N.P., **Flores-Rangel R.M.**, Munoz Sevilla N.P., Martinez-Tavera, E. Impact of industrialization and volcanic activity in aquatic environments surrounding Puebla City, Central Mexico. In preparation.
- P.F. Rodríguez-Espinosa, **R.M. Flores-Rangel**, V. Mugica-Álvarez, M. E. Ortiz-Romero-Vargas, S.S. Morales-García. Source of Trace Metals in PM<sub>10</sub> Particles from the Industrial Port of Altamira Tamaulipas, Mexico. In preparation.
- Flores, R.M.**, Doskey, P.V., Estimating Terpene and Terpenoid Emission Signatures from Conifer Oleoresin Composition. In preparation.
- Flores, R.M.**, Doskey, P.V., Terpenoid Signatures of Conifer Essential Oils: New Measurements and a Review. To be submitted to *Journal of Chromatography A*.
- Flores, R.M.**, Doskey, P.V., Comparison of Multistep Derivatization Methods for Identification and Quantification of Oxygenated Species in Organic Aerosol. To be submitted to *Analytica Chimica Acta*.
- Flores, R.M.**, Doskey, P.V., Vapor- and Aerosol- Phase Atmospheric Organic Matter in the Midwestern United States: Methods and Measurements. To be submitted to *Environmental Science and Technology*.

**Flores, R.M.,** Doskey, P.V., Diurnal variation of volatile and Semivolatile Secondary Organic Aerosol Precursors in the Midwestern, United States. In preparation. To be submitted to Environmental Science and Technology.

### **Conference proceedings**

**Flores, R.M.,** Rodriguez, P., MontesdeOca, J., Mugica, V., Ortiz, E., 2007. PM<sub>10</sub> Metal Content in Tampico, Tamaulipas, 2004 (Evaluacion del contenido de metales en PM<sub>10</sub> en Tampico, Tamaulipas, 2004). 6th Symposium on Air Pollution, Colegio Nacional – Universidad Autónoma Metropolitana, (in Spanish). Mexico, D.F. 16-18 April 2007.

**Flores-Rangel, R.M.,** Rodriguez-Espinosa, P.F., MontesdeOca-Valero, J.A., Mugica-Alvarez, V., Ortiz-RomeroVargas, E., 2007. Geographic information system applied to urban aerosols in Altamira, Mexico. 100th Annual Conference and Exhibition of the Air and Waste Management Association. Pittsburgh, PA. 26-28 June 2007.

### **Other publications**

Flores, R. News from MCE<sup>2</sup> alumni. Luisa Molina (Ed). Spring 2010-Spring 2011 MCE2 Newsletter.  
Flores, R. Graduate Research Excellence Award. 2013 Civil and Environmental Engineering Department (CEE, MTU) Newsletter.

### **Selected poster presentations**

**Flores, R.M.,** Rodriguez, P.F., MontesdeOca, J.A., Mugica, V., Ortiz, M.E., 2007. Application of receptor models for the identification of metal sources in Tampico, Mexico. 2007 American Geophysical Union Spring Meeting. Acapulco, Mexico. 22-24 May 2007.

Rodriguez-Espinosa, P.F., **Flores-Rangel, R.M.,** MontesdeOca-Valero, J.A., Mugica-Alvarez, V., Ortiz-Romero-Vargas, M.E., 2007. Metal distribution in PM<sub>10</sub> during the MILAGRO campaign in Tamaulipas, Mexico. 2nd MILAGRO Meeting. Mexico. D.F. May 15-18 2007

**Flores, R.M.,** Perlinger, J.A., Doskey, P.V., 2009. Identification of terpenes and sesquiterpenes by 1DGC-MS and 2DGC-TOF-MS. 2009 American Geophysical Union Fall Meeting. 14-18 December. San Francisco, CA.

**Flores, R.M.,** Doskey, P.V., Perlinger, J.A., 2010. Supercritical fluid extraction of biogenic SOA in Northern Michigan. 2010 American Geophysical Union Fall Meeting. 13-17 December, San Francisco, CA.

**Flores, R.M.,** Perlinger, J.A., Doskey, P.V., 2010. Quantification of terpenes by 1DGC-MS and 2DGC-TOF-MS. 6th Annual ESC/BRC Graduate Research Forum at Michigan Tech. Houghton, MI.

Perlinger, J.A., Doskey, P.V., **Flores, R.M.,** Zhang, B., Murray, K., 2011. Estimates of total molecular polarity to evaluate atmospheric evolution of organic aerosol. Geophysical Research Abstracts. European Geophysical Union 2011 (13). Vienna, Austria. 3-8 April

**Flores, R.M.,** Perlinger, J.A., Doskey, P.V., 2011. On-Line supercritical fluid extraction with gas chromatographic – mass spectrometric analysis of Biogenic SOA. 7th Annual ESC/BRC Graduate Research Forum at Michigan Tech. Houghton, MI.

**Flores, R.M.,** Zhang, B., Murray, K., Doskey, P.V., Perlinger, J.A., 2011. Description of organic aerosol diagenesis with a GC × 2GC retention diagram. 2011 American Geophysical Union Fall Meeting. 5-9 December San Francisco, CA.

**Flores, R.M.,** Perlinger, J.A., Doskey, P.V., 2012. Managing the complexity of secondary organic aerosol species produced by forest emissions with GC × 2GC. 8th Annual ESC/BRC Graduate Research Forum at Michigan Tech. Houghton, MI

**Selected oral presentations.**

**Flores, R.M.,** 2014. Secondary Organic Aerosol Formation: Methods and Measurements. Environmental Engineering Seminar at Marmara University. Istanbul.

**Flores, R.M.,** 2013. Studies of Air Quality (Atmospheric Organic Matter) in the Midwestern United States: Methods and Measurements. CIEMAD, National Polytechnic Institute of Mexico.

**Flores, R.M.,** 2013. My Experience during the Ph.D. at Michigan Technological University. CIEMAD, National Polytechnic Institute of Mexico.

**Flores, R.M.,** Perlinger, J.A., Doskey, P.V., 2011. Secondary organic aerosol composition and formation. Civil and Environmental Engineering Seminar. Houghton, MI.

**Flores, R.M.,** Perlinger, J.A., Doskey, P.V., 2011. Secondary organic aerosol formation from biogenic sources in the Midwestern, United States. Atmospheric Sciences Seminar at Michigan Tech. Houghton, MI.