

**JOHANN P. ENGELBRECHT**  
Research Professor Emeritus  
Desert Research Institute  
Division of Atmospheric Sciences  
2215 Raggio Parkway  
Reno, NV 89512-1095

Mobile: +1 (775) 247-3390

email: [johann@dri.edu](mailto:johann@dri.edu)

### Education

University of Pretoria	Geology	Ph.D.	1987
University of Pretoria	Geology <i>cum laude</i>	M.Sc.	1973
University of Pretoria	Geology <i>cum laude</i>	B.Sc. (Hons)	1970
University of Pretoria	Chemistry, Physics	B.Sc.	1963

### Professional Interests

Johann Engelbrecht, Research Professor Emeritus in the Division of Atmospheric Sciences (DAS) at the Desert Research Institute (DRI), has been working in Earth Sciences for 50 years, the last 30 years specifically on airborne dust and other aerosols. His career path initiated in South Africa and later continued in the U.S.A, Middle East and elsewhere. To better pursue his career, it was necessary to broaden his background from Chemistry and Physics to Geology, in addition to Mathematics and Statistics. On the analytical side he has many years of hands-on experience in X-ray fluorescence spectrometry (XRF), X-ray diffraction (XRD) analysis, Electron Probe Micro-analysis (EPMA), and Scanning Electron Microscopy (SEM).

He was principal investigator for several air quality studies in the industrialized regions of South Africa, including the Vaal Triangle Aerosol Monitoring and Source Apportionment Study, and the Qalabotjha Low-Smoke Fuels Macro-Scale Experiment. Specifics included the implementation of PM<sub>10</sub> and PM<sub>2.5</sub> monitoring and analysis, as well as CMB receptor modeling.

Since joining the DRI in Reno Nevada in 2001, Dr. Engelbrecht has been principal or co-principal investigator on a variety of air quality studies, including the MARAMA receptor modeling study, the VISTAS organic tracers and CMB study, the DOE's Yucca Mountain air quality monitoring study, the DOD's Middle East, Enhanced Particulate Matter Surveillance Program, the Lake Tahoe Source Attribution study, and the Mobile Aerosol Monitoring System for the U.S. Department of Defense. He established the DRI's XRD laboratory (<http://www.dri.edu/das-laboratories/1770-x-ray-diffraction-analysis-of-mineral-dusts-in-aerosols>) and mineral dust re-suspension facility (<http://www.dri.edu/das-laboratories/4185-dust-entrainment-and-characterization-facility>).

Dr. Engelbrecht is the author or co-author of about 53 peer reviewed publications, of 53 reports, and has made more than 87 presentations at international conferences and workshops, earning him more than 2560 citations (by March 2023).

His recent research interest includes characterizing windblown mineral dusts, from the Middle East and the Sahara, with emphasis on their potential health effects, and global climate. He spent two months in 2009, as invited visiting Professor at the University of Las Palmas in Gran Canaria, Spain, furthering his research on the health impact of Saharan dust. Since 2013 he has been collaborating with researchers at King Abdullah University of Science and Technology (KAUST) in Saudi Arabia, on the measurement of Arabian dust and its impact on the Red Sea. Early in 2016 the Geological Survey of Iran invited Dr. Engelbrecht to participate in the International Geosciences Conference in Tehran, followed by the 1<sup>st</sup> International Conference on Dust, at the Shahid Chamran University of Ahvaz, Iran. In 2018 he was invited as Keynote speaker at the 2<sup>nd</sup> International Conference on Dust, held at the Ilam University, in Iran, providing opportunities for collaboration on escalating dust issues in the region.

## Professional Experience

2016 - present	Research Professor Emeritus, Desert Research Institute, Division of Atmospheric Sciences, Nevada, Reno, NV
2016 - 2020	Visiting Faculty, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia
2010 - 2016	Research Professor, Desert Research Institute, Division of Atmospheric Sciences, Nevada, Reno, NV
2001 - 2010	Associate Research Professor, Desert Research Institute, Division of Atmospheric Sciences, Nevada, Reno, NV
1989 - 2001	Specialist Scientist, Environmental & On-Line Analysis, Mintek, Mineralogy Division, South Africa
2001 - 2001	Associate Professor, Geology Department, Rand Afrikaans University, Johannesburg, South Africa
1985 - 1989	Senior Research Scientist, Geology Department, University of Potchefstroom for Christian Higher Education, South Africa
1975 - 1985	Senior Lecturer, Geology Department, University of Pretoria, South Africa
1973 - 1975	Lecturer, Geology Department, University of Port Elizabeth, South Africa
1972	Lecturer (temporary), Geology Department, University of Pretoria, South Africa
1967 - 1971	Lecturer, Department of Physical Sciences, Pretoria Technicon, South Africa
1966	Laboratory Assistant, Chemistry Department, University of Pretoria, South Africa
1964	Industrial Chemist, Consolidated Glass Works, Pretoria, South Africa

## Professional Activities

### Associations:

- Geological Society of America (GSA)
- American Geophysical Union (AGU)
- Geochemical Society
- International Medical Geology Association (IMGGA)

### Past Involvement in Academic Institutions:

## Examiner and Committees for MSc and PhD Theses

PhD	1.	Sadrian, M. R., Ph.D. Candidate. <i>Spectroscopy of Global Parent Soils: Application to Aerosol Mineral Dust</i> , Ph.D. University of Nevada, Reno
	2.	Banta, J.R., 2006. <i>Interpretation of Glaciochemical Records from an array of Greenland Ice Cores</i> , Ph.D., University of Nevada, Reno
	3.	Bohlender, F.H., 1993. <i>Igneous and metamorphic charnockitic rocks in the southern marginal zone of the Limpopo belt with special emphasis on the Matok enderbitic granitic suite</i> , Ph.D., Rand Afrikaans University (RAU).
MSc	4.	Strydom, J.H., 1983. <i>Geochemical and mineralogical distribution patterns in wall-rocks of tin-bearing ore bodies in the Zaaiplaats mine, Potgietersrus district</i> . M.Sc., University of Pretoria
	5.	Nell, J., 1984. <i>Geochemical and thermodynamic controls in the formation of mineral assemblages from the metamorphic aureole of the Bushveld Complex in the Potgietersrus area</i> . M.Sc., University of Pretoria
	6.	Van Zyl, A.M., 1996. <i>The sulphides of the Uitkomst Complex, Badplaas, South Africa</i> . M.Sc., University of Pretoria

## Moderator & External Examiner for Graduate and Post-graduate Courses

7. B.Sc.(Hons.), (*Crystallography, Mineralogy, Igneous and Metamorphic Petrology*), University of Pretoria
8. B.Sc. (3<sup>rd</sup>, 4th year), (*Mineralogy, Igneous and Metamorphic Petrology*), Rand Afrikaans University

## Lecturer Contracted to RAU by Mintek

9. B.Sc.(Hons.), (*Environmental Mineralogy, Geochemistry & Analysis*), Rand Afrikaans University

## Awards and Honors

- MINTEK, Achievement Award, Gold Medal. The Measurement and Apportionment of Airborne Particulate Matter. November 1995
- MINTEK, Gold Coin. Air Pollution Research. December 1993

## Publications

- Sadrian, Mohammad R., Calvin, Wendy M., Perrin, Andrew E., Engelbrecht, Johann P., Moosmüller, Hans, 2023. Variations in infrared complex refractive index spectra of surface soils from Global dust entrainment regions. *Atmosphere* v. **14**. <https://doi.org/10.3390/atmos14040675>  
<https://doi.org/10.3390/atmos14040675>
- Sadrian, Mohammad R., Calvin, Wendy M., Engelbrecht, Johann P., Moosmüller, Hans, 2023. Spectral characterization of parent soils from globally important dust aerosol entrainment regions. *Journal of Geophysical Research Atmospheres* v. **128** (2). <https://doi.org/10.1029/2022JD037666>
- Volkova, E., Nair, A.K.N., Engelbrecht, J., Schwingenschlögl, U., Sun, S., and Stenchikov, G., 2021. Molecular dynamics modeling of kaolinite particle associations. *Journal of Physical Chemistry C*, **125**, 24126-24136. <https://doi.org/10.1021/acs.jpcc.1c06598>
- Shevchenko, I, Engelbrecht, J.P., Mostamandi, S. and Stenchikov, G., 2021. Evaluation of minerals being deposited in the Red Sea using gravimetric, size distribution, and mineralogical analysis of dust deposition samples collected along the Red Sea coastal plain. *Aeolian Research*, **52**, 100717. <https://doi.org/10.1016/j.aeolia.2021.100717>
- Ahmady-Birgani, H., Engelbrecht, J.P., and Bazgir, M., 2019: How different source regions across the Middle East change aerosol and dust particle characteristics. *Dust*, **24**(1), 61-73. [10.22059/jdesert.2019.72441](https://doi.org/10.22059/jdesert.2019.72441)
- Engelbrecht, J.P., Stenchikov, G., Jish Prakash, P., Anisimov A., and Shevchenko, I., 2017: Physical and chemical properties of deposited airborne particulates over the Arabian Red Sea coastal plane. *Atmos. Chem. Phys.*, **17**, 11467-11490. <https://doi.org/10.5194/acp-17-11467-2017>
- Menéndez, I., Derbyshire, E., Carrillo, T., Caballero, E., Engelbrecht, J. P., Romero, L.E., Mayer, P.L., de Castro, F.R., Mangas, J., 2016: Saharan dust and the impact on adult and elderly allergic patients: the effect of threshold values in the northern sector of Gran Canaria, Spain. *International Journal of Environmental Health Research*, **27** (2), 144-160. [10.1080/09603123.2017.1292496](https://doi.org/10.1080/09603123.2017.1292496)
- Engelbrecht, J. P., Moosmüller, H., Pincock, S., Jayanty, R., Lersch, T., Casuccio, G., 2016: Technical Note: Mineralogical, chemical, morphological, and optical Interrelationships of mineral dust,

- Atmos. Chem. Phys.*, **16**, 10809–10830. doi:10.5194/acp-16-10809-2016. [10.5194/acp-16-10809-2016](https://doi.org/10.5194/acp-16-10809-2016)
- Prakash, P. J., Stenchikov, G., Tao, W., Yapici, T., Warsama, B., Engelbrecht, J. P., 2016: Arabian Red Sea coastal soils as potential mineral dust sources, *Atmos. Chem. Phys.*, **16**, 11991-12004, doi:10.5194/acp-16-11991-2016. [10.5194/acp-16-11991-2016](https://doi.org/10.5194/acp-16-11991-2016)
- Engelbrecht, J. P., Kavouras, I. G., Shafer, D. S., Campbell, D. E., Campbell, S. A., McCurdy, G. D., Kohl, S. D., Nikolich, G., Sheetz, L. H., Gertler, A. W., 2015: Chemical Variability of PM10 and PM2.5 in Southwestern Rural Nevada, USA, *Water Air Soil Pollut.*, **226**, 217, 1-13. [10.1007/s11270-015-2481-8](https://doi.org/10.1007/s11270-015-2481-8)
- Zhang, Y., Mahowald, N., Scanza, R. A., Journet, E., Desboeufs, K., Albani, S., Kok, J. F., Zhuang, G., Chen, Y., Cohen, D. D., Paytan, A., Patey, M. D., Achterberg, E. P., Engelbrecht, J. P., Fomba, K. W., 2015: Modeling the global emission, transport and deposition of trace elements associated with mineral dust, *Biogeosciences*, **12**, 5771-5792. <https://doi.org/10.5194/bg-12-5771-2015>
- Engelbrecht, J. P., Menéndez, I., Derbyshire, E., 2014: Sources of PM2.5 impacting on Gran Canaria, Spain, *Catena*, **117**, 119-132. [10.1016/j.catena.2013.06.017](https://doi.org/10.1016/j.catena.2013.06.017)
- Menéndez, I., Engelbrecht, J. P., Pérez-Chacón, E., Mangas, J., Tauler, E., Derbyshire, E., Cana, L., Alonso, I., 2014: Dust deposits on La Graciosa Island (Canary Islands, Spain): Texture, mineralogy and a case study of recent dust plume transport, *Catena*, **117**, 133-144. **Error! Hyperlink reference not valid.** [10.1016/j.catena.2013.05.007](https://doi.org/10.1016/j.catena.2013.05.007)
- Engelbrecht, J. P., Jayanty, R. K., 2013: Assessing sources of airborne mineral dust and other aerosols, in Iraq, *Aeolian Res.*, **9**, 153-160. [10.1016/j.aeolia.2013.02.003](https://doi.org/10.1016/j.aeolia.2013.02.003)
- Engelbrecht, J. P., Gillies, J. A., Etyemezian, V. R., Kuhns, H. D., Baker, S. E., Zhu, D., Nikolich, G., Kohl, S. D., 2012: Controls on mineral dust emissions at four arid locations in the western USA, *Aeolian Res.*, **6**, 41-54. [10.1016/j.aeolia.2012.07.003](https://doi.org/10.1016/j.aeolia.2012.07.003)
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- Kuhns, H., Gillies, J., Etyemezian, V., Nikolich, G., King, J., Zhu, D., Uppapalli, S., Engelbrecht, J., and Kohl, S., 2010: Effect of soil type and momentum on unpaved road particulate matter emissions from wheeled and tracked vehicles. *Aerosol Science and Technology*, **44**, 193-202. [10.1080/02786820903516844](https://doi.org/10.1080/02786820903516844)
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- Menéndez, I., Derbyshire, E., Engelbrecht J.P., Von Suchodoletz, Zöller, L., Dorta, P., Carrillo, T., and Rodríguez de Castro, F., 2009: Saharan dust and aerosols on the Canary Islands: past and present, in Cheng, M. and Liu, W. (editors) *Airborne Particulates*, NOVA Publishers Inc, New York, 39-80.
- Engelbrecht, J.P., McDonald E.V., Gillies, J.A., Jayanty, R.K.M., Casuccio, and Gertler, A.W., 2009: Characterizing mineral dusts and other aerosols from the Middle East – Part 1: Ambient aerosols. *Inhalation Toxicology*, v. 21 (4), 297-326. [10.1080/08958370802464273](https://doi.org/10.1080/08958370802464273)

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- Engelbrecht, J.P., McDonald E.V., Gillies, J.A., and Gertler A.W. (2008). Enhanced Particulate Matter Surveillance Program: A multidisciplinary approach to understanding mineral dusts from the Middle East. Goldschmidt Conference Abstracts 2008, *Geochimica et Cosmochimica Acta* v. 72, A243.
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- Chow, J.C., Engelbrecht, J.P., Freeman, N.C.G., Hashim, J.H., Jantunen, M, Michaud, J.-P. Saenz de Tejada, S, Watson J.G., Wei, F., Wilson W.E., Yasuno, M., and Zhu, T.(2002). *Exposure measurements*. *Chemosphere*, v. 49(9), p. 873-901.
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- Engelbrecht, J.P., Swanepoel, L., Chow, J.C., Watson, J.G., and Egami, R.T., (2001). *PM<sub>2.5</sub> and PM<sub>10</sub> concentrations from the Qalabotjha low-smoke fuels macro-scale experiment in South Africa*. *Environmental Monitoring and Assessment*, v. 61, p 1-15.
- Engelbrecht, J.P. (2000) *On-stream XRD analysis for process control in the industrial minerals industry*. In: *Applied Mineralogy in Research, Economy, Technology, Ecology and Culture*, eds. Rammlmair, D., Mederer, J., Oberthür, Th., Heimann, R.B. and Pentinghaus, H., A.A. Balkema, p. 285-288.

- Engelbrecht, J.P., Swanepoel, L., Zunckel, M., Chow, J.C., Watson, J.G., and Egami, R.T. (2000). *Modelling PM<sub>10</sub> aerosol data from the Qalabotjha low-smoke fuels macro-scale experiment in South Africa. Ecological Modelling*, v. 127 (2-3), p. 235-244. [10.1016/S0304-3800\(99\)00212-4](https://doi.org/10.1016/S0304-3800(99)00212-4)
- Engelbrecht, J.P. and Swanepoel, L., 2000: *Four consecutive years of TSP, PM<sub>10</sub> and PM<sub>2.5</sub> integrated aerosol monitoring at Mintek in Randburg*, Papers of the National Association for Clean Air, Annual Conference 2000, Mount Amanzi, Hartebeespoort, South Africa, September 14-15, 2000.
- Engelbrecht, J.P., Van den Heever, P.C and De Bruyn, S.W., (1999). *The on-stream X-ray diffractometric analysis of phosphate-rock-bearing slurries for process control on a beneficiation plant*: In: *Beneficiation of Phosphates, Advances in Research and Practice*, eds. Zhang, P. El-Shall, H., and Wiegel, R. Society for Mining, Metallurgy, and Exploration, Inc., p. 237-246.
- Engelbrecht, J.P., Van den Heever, P.C and De Bruyn, S.W., 1998. *On-stream X-ray diffraction analysis of phosphate rock-bearing slurries in Florida: a case study towards process control. Process Control and Quality*, v. 11, no. 1, p59-70.
- Engelbrecht, J.P., Reddy, V.S., Swanepoel, L., and Mostert, J.C. 1998. *Aerosol monitoring and source apportionment in the Vaal Triangle. Mintek Special Publication No. 17*, 116pp.
- Engelbrecht, J.P., Swanepoel, L., Zunckel, M. and Chow, J. 1998: *Modelling PM<sub>10</sub> gravimetric data from the Qalabotjha Low-Smoke Fuels Macro-Scale Experiment in South Africa*, Papers of the International Union of Air Pollution Prevention and Environmental Protection Associations (IUAPPA), 11<sup>th</sup> World Clean Air and Environment Congress, Durban, South Africa, September 13-18, 1998.
- Engelbrecht, J.P., Swanepoel, L. and Chow, J., 1998: *Source Apportionment of Domestic Coal and Low-Smoke Fuel Combustion in Qalabotjha, South Africa*, Papers of the International Union of Air Pollution Prevention and Environmental Protection Associations (IUAPPA), 11<sup>th</sup> World Clean Air and Environment Congress, Durban, South Africa, September 13-18, 1998
- Engelbrecht, J.P. and Wells, R.B., 1996. Source Apportionment, in Gore, B.J., Surridge, A.D., Toson, G.R., Turner, C.R. and Walmsley, R.D. (eds). *Air Pollution and its impacts on the South African Highveld. Environmental Scientific Association*, Cleveland, South Africa, 144pp.
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- Ericksson, P.G., Reczko, B.F.F., Merkle, R.K.W., U.M. Schreiber, U.M., Engelbrecht, J.P., Res, M., and Snyman, C.P., 1994. *Early proterozoic black shales of the Timeball Hill Formation, South Africa: volcanogenic and palaeoenvironmental influences*, *Journal of African Earth Sciences*, 18(4), p. 325-337.
- Ericksson, P.G., Engelbrecht, J.P., Res, M. and Harmer, R.E., 1994. *The Bushy Bend lavas, a new volcanic member of the Pretoria Group, Transvaal Sequence*, *South African Journal of Geology*, 97(1), p 1-7.
- Engelbrecht, J.P. and Reddy, V.S. 1992. *A sampling system for stack, re-suspended and ambient aerosol samples*, Proceedings of the National Association for Clean Air (NACA) Annual Conference, Vereeniging, South Africa, November 8-10, 1992.

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## Reports

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- Engelbrecht, J.P. and Moosmüller, H., *Mobile Aerosol Monitoring System for Department of Defense – Continuous Aerosol and aerosol Optics Measurement in Theater*. Final report submitted to the U.S. Army Medical Research and Materiel Command, Fort Detrick, Maryland, 2014.
- Engelbrecht, J.P., I. Kavouras, D.S. Shafer, D. Campbell, S. Campbell, G.D. McCurdy, S.D. Kohl, G. Nikolich, L. Sheetz, and A.W. Gertler, 2011: Twelve Months of Air Quality Monitoring at Ash Meadows National Wildlife Refuge, Southwestern Rural Nevada, and U.S.A. Final report submitted to Nevada Site Office, National Nuclear Security Administration, U.S. Department of Energy, Las Vegas, NV, August, 2011.
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- Engelbrecht, J.P., Gertler, A., and VanCuren, *Lake Tahoe Source Attribution Study (LTSAS): Receptor Modeling Study to Determine the Sources of Observed Ambient Particulate Matter in the Lake Tahoe Basin*, Final report submitted Jonathan Long, (Tahoe Research Program Manager, USDA Forest Service), (December, 2009)

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### **Conferences, Workshops and Presentations**

- Engelbrecht, J.P., 2018: Aerosol sampling and analysis for pollution source identification and apportionment, *DUST 2018, 2<sup>nd</sup> International Conference on Dust*, Ilam University, Ilam, Iran, April 25-27, 2018. **(Invited Keynote Speaker)**
- Engelbrecht, J. P., Stenchikov, G., Jish Prakash, P., Anisimov, A., Shevchenko, I., 2017: Physical and chemical properties of deposited airborne particulates over the Arabian Red Sea coastal plain, *Goldschmidt 2017*: Paris, August 13-18, 2017
- Engelbrecht, J.P., 2016: Quantifying dust sources in countries of the Middle East, *DUST 2016, 2nd International Conference on Atmospheric Dust*, Castellaneta Marina, Italy, June 13, 2016.
- Engelbrecht, J.P., Moosmüller, H., Pincock, S.L., Jayanty, R.K.M., and Casuccio, G. 2016: Mineralogical and physical interrelationships of airborne mineral dusts controlling their optical properties, *DUST 2016, 2nd International Conference on Atmospheric Dust*, Castellaneta Marina, Italy, June 17, 2016.
- Engelbrecht, J.P., 2016: Characterizing dust to identify dust sources in the Middle East, *1<sup>st</sup> International Conference on Dust*, Shahid Chamran University of Ahvaz, Ahvaz, Iran, March 2, 2016. **(Invited Keynote Speaker)**
- Engelbrecht, J.P., 2016: Sampling and analysis of airborne mineral dust from arid regions of the Middle East, *34th National and the 2nd International Geosciences Congress*, Tehran, Iran, February 22, 2016. **(Invited)**.

- Engelbrecht, J.P., Moosmüller, H., Pincock, S.L., Jayanty, R.K.M., and Casuccio, G., 2015: Relating optical properties of dusts to their mineralogical and physical interrelationships, *2015 AGU Fall Meeting*, San Francisco, CA, December, 14-18, 2015
- Engelbrecht, J. P., Moosmüller, H., Pincock, S. L., Campbell, D. E., Jayanty, R., Casuccio, G., 2015: Optical Properties of Suspended Mineral Dusts from Desert Source Regions, *34th Annual Conference of the American Association for Aerosol Research*: Minneapolis, MN, October 12, 2015.
- Engelbrecht, J. P., Casuccio, G., Lersch, T., 2014: Particle Analysis of Ambient and Re-suspended Dusts from Global Dust Sources, Presented at the *DUST2014, International Conference on Dust*, International Conference on Dust: Castellaneta Marina, Taranto, Italy, June 1, 2014.
- Engelbrecht, J. P., Moosmüller, H., Pincock, H., Jayanty, R., Casuccio, G., 2014: Mineralogical, Chemical, and Optical Interrelationships of Re-suspended Mineral Dusts from Global Source Regions, Poster presented at the *DUST2014, International Conference on Dust*: Castellaneta Marina, Taranto, Italy, June 1, 2014.
- Engelbrecht, J. P., Moosmüller, H., Pincock, S. L., Campbell, D. E., Chakrabarty, R. K., Jayanty, R., Casuccio, G., 2014: Optical Properties of Suspended Mineral Dusts from Desert Source Region, *33rd Annual Conference of the American Association for Aerosol Research*: Orlando, FL, October 20, 2014.
- Engelbrecht, J. P., Moosmüller, H., Pincock, S. L., Jayanty, R., Casuccio, G., 2014: Mineralogical, Chemical, and Optical Interrelationships of Re-suspended Mineral Dusts from Global Source Regions, Poster, *2014 AGU Fall Meeting*: San Francisco, CA, December 15, 2014.
- Puthan Purakkal, J., Stenchikov, G., Engelbrecht, J. P., 2014: Characterizing mineral dust from the Arabian coast of the Red Sea, Presented at the *2014 AGU Fall Meeting*: San Francisco, CA, December 15, 2014.
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- Engelbrecht, J.P., Etyemezian, V. (2014). Dust Research at the Desert Research Institute (DRI), *Kuwait Institute for Scientific Research (KISR)*, Safat, Kuwait, December 2–December 3, 2014. **(Invited Speakers)**
- Engelbrecht, J.P., Etyemezian, V. (2014). Dust Research at the Desert Research Institute (DRI), *Kuwait Institute for Scientific Research (KISR)*, Safat, Kuwait, December 2–December 3, 2014. **(Invited Speakers)**
- Engelbrecht, J. P., 2013: Analysis and properties of individual airborne mineral dust particles, *5th International Conference on Medical Geology (MEDGEO 2013)*: Arlington, VA, August 25, 2013-August 29, 2013.
- Engelbrecht, J. P., Etyemezian, V. R., 2013: Workshop on Dust Measurement & Characterization, *King Abdullah University of Science and Technology (KAUST)*: Saudi Arabia, November 11, 2013-November 15, 2013.
- Engelbrecht, J. P., Jayanty, R., 2013: Assessing sources of airborne mineral dusts and other aerosols, in Iraq, *5th International Conference on Medical Geology (MEDGEO 2013)*: Arlington, VA, August 25, 2013-August 29, 2013.

- Engelbrecht, J. P., Moosmüller, H., Pincock, S., Jayanty, R., Casuccio, G., 2013: Mineralogical, chemical, and optical interrelationships of mineral dusts from desert source regions, *AGU Fall Meeting*: San Francisco, CA, December 8, 2013-December 13, 2013.
- Moosmüller, H., Engelbrecht, J. P., 2013: Dust Direct Radiative Forcing and the Complex Refractive Index of Hematite, *Goldschmidt2013 Conference*: Florence, Italy, August 25, 2013.
- Moosmüller, H., Engelbrecht, J. P., 2013: Complex Refractive Index of Hematite in the Visible and Near Visible: A Review, *32nd Annual Conference of the American Association for Aerosol Research*: Portland, OR, September 30, 2013-October 4, 2013
- Engelbrecht, J.P. 2012. Characterizing mineral dust for surveillance purposes, *Weather Impacts Decision Aids (WIDA) Workshop*, Reno, NV, March 13-15, 2012.
- Engelbrecht, J. P., Jayanty, R.K.M., 2012: Assessing sources of airborne mineral dusts and other aerosols, from Iraq, Presentation, *34th International Geological Congress*: Brisbane, Australia, August 5, 2012.
- Engelbrecht, J. P., Jayanty, R., Casuccio, G., 2012: A multidisciplinary analytical approach to understanding airborne mineral dusts, Poster presentation, *Ed@80, International Conference on Loess Research, Tribute to Edward Derbyshire*: Novi Sad, Serbia, September 27, 2012.
- Engelbrecht, J. P., McDonald, E. V., Gillies, J. A., Jayanty, R.K.M., Casuccio, G., Gertler, A. W., 2012: Understanding mineral dusts from the Middle East, Paper presented: *American Geophysical Union Fall Meeting*: San Francisco, CA, December 3, 2012.
- Engelbrecht, J. P., Menendez, I., Derbyshire, E., 2012: Characterizing aerosols from PM<sub>2.5</sub> filters collected on Gran Canaria, Spain, Poster presentation, *Ed@80, International Conference on Loess Research, Tribute to Edward Derbyshire*: Novi Sad, Serbia, September 27, 2012.
- Moosmüller, H., Aiken, A., Dubey, M. K., Frey, G., Garro, B., Engelbrecht, J. P., 2012: Optical Properties of Hematite and Fine Desert Dust Aerosols, *31th Annual Conference of the American Association for Aerosol Research*: Minneapolis, MN, October 8, 2012.
- Moosmüller, H., Aiken, A., Dubey, M. K., Frey, G., Garro, B., Engelbrecht, J. P., 2012: Laboratory Measurement of the Optical Properties of Hematite and Desert Dust Aerosols to Assess Their Climate Forcing, *AGU Fall Meeting*: San Francisco, CA, December 3, 2012.
- Moosmüller, H., Engelbrecht, J. P., Skiba, M., Frey, G., Chakrabarty, R. K., Arnott, W., 2012: Single Scattering Albedo of Fine Mineral Dust Aerosols Controlled by Iron Concentration, *Aerosol and Atmospheric Optics: Visibility and Air Pollution, Air & Waste Management Association*: Whitefish, MT, September 24, 2012.
- Engelbrecht, J.P. and Jayanty, R.K.M., 2011. Characterizing sources of airborne mineral dust, in Iraq, *Goldschmidt 2011*, Prague, Czech Republic. August 14-19, 2011 **Invited Speaker**
- Engelbrecht, J.P., E.V. McDonald, J.A. Gillies, A.W. Gertler, R.K.M. Jayanty, and, G. Casuccio, 2011: A Multidisciplinary Approach to Understanding Mineral Dusts from the Middle East. Presented at the *9<sup>th</sup> International Conference on Military Geosciences*, Las Vegas, NV, June 20-24, 2011.
- Zhu, D., Gillies, J. A., Kuhns, H. D., Engelbrecht, J. P., Etyemezian, V., Nikolich, G. (2011). Deposition of vehicle-generated particles near an unpaved road., *104th AWMA Annual Conference and Exhibition*, Orlando, FL, June 21, 2011-June 24, 2011
- Engelbrecht, J., and J. Jayanty, 2011: Assessing dust sources by Positive Matrix Factorization (PMF) of chemical results. Poster presentation, *First International Workshop on the Long-Range Transport and Impacts of African Dust on the Americas*, San Juan, Puerto Rico, October 6-9, 2011.
- Engelbrecht, J., I. Menendez, and E. Derbyshire, 2011: Charactering aerosols from PM<sub>2.5</sub> filters collected on Gran Canaria, Spain. Poster presentation, *First International Workshop on the Long-Range*

- Transport and Impacts of African Dust on the Americas*, San Juan, Puerto Rico, October 6-9, 2011.
- Engelbrecht, J., J. Jayanty, and G. Casuccio, 2011: A multidisciplinary analytical approach to understanding airborne mineral dusts. Poster presentation, *First International Workshop on the Long-Range Transport and Impacts of African Dust on the Americas*, San Juan, Puerto Rico, October 6-9, 2011.
- Gillies, J.A., V. Etyemezian, H. Kuhns, J. Engelbrecht, Moosmüller, D. Zhu, G. Nikolich, W. Shaw, L. Berg, M. Pekour, S. Clapton, and E. Chapman, 2011: Characterizing and quantifying emissions and transport of fugitive dust emissions due to Department of Defense Activities. Poster presented: *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 29 Nov. - 1 December, 2011.
- Moosmüller, H., J. Engelbrecht, W.P. Arnott, G. Frey, R.K. Chakrabarty, and M. Skiba, 2011: Single Scattering Albedo of Fine Mineral Dust Aerosols Controlled by Iron Concentration. *First International Workshop on the Long-Range Transport and Impacts of African Dust on the Americas*, San Juan, Puerto Rico, October 6-7, 2011.
- Moosmüller, H., J. Engelbrecht, R. K. Chakrabarty, and W. P. Arnott, 2011: Invited talk, Laboratory Aerosol Characterization and More. *NASA GLORY Mission Science Team Meeting*, NASA Goddard Institute for Space Studies (GISS), New York, NY, August 10-12, 2011.
- Engelbrecht, J. P., 2010: Assessing dust sources by Positive Matrix Factorization (PMF), *13<sup>th</sup> Annual Force Health Protection Conference*, Phoenix, Arizona, 7-13 August, 2010.
- Engelbrecht, J.P. 2010: Identifying dust sources by Positive Matrix Factorization (PMF), *European Geosciences Union (EGU)*, Vienna, Austria, 2-7 May, 2010.
- Engelbrecht, J.P., Application of analytical techniques for Environmental and Geochemical studies *GEOANALYSIS 2009*, Champagne Sports Resort, South Africa, 7-11 September 2009. **(Invited Plenary Session Speaker)**
- Engelbrecht, J.P., McDonald, E., Gillies, J., and Gertler, A, Casuccio, G., and Jayanty J., 2009: A Multidisciplinary approach to understanding mineral dusts from the Middle East, and their potential impact on human health, *7<sup>th</sup> International Conference on Air Quality – Science and Application*, Istanbul, Turkey, 24-27 March 2009
- Engelbrecht, J., McDonald, E., Gillies, J., and Gertler, 2008. Chemistry, and individual particle characteristics of aerosols from the Middle East, *33<sup>rd</sup> International Geological Congress*, Oslo, Norway, 6-14 August, 2008.
- Engelbrecht, J.P., McDonald, E., Gillies, J., and Gertler, A., 2008: Enhanced Particulate Matter Surveillance Program: A multidisciplinary approach to understanding mineral dusts from the Middle East, *Goldschmidt 2008*, Vancouver, Canada, July 13-18, 2008. **(Invited Speaker)**
- Gillies, J., McDonald, E., Engelbrecht J.P., and Gertler, A., 2008: Chemistry, and individual particle characteristics of aerosols from the Middle East, *11<sup>th</sup> Annual Force Health Protection Conference*, Albuquerque, New Mexico, August 9-15, 2008.
- Engelbrecht, J.P., McDonald, E., Gillies, J., Gertler, A., and Skiba, M., 2007: Enhanced Particulate Matter Surveillance Program. *10<sup>th</sup> Annual Force Health Protection Conference*, Louisville, Kentucky, August 5-10, 2007.
- Engelbrecht, J.P., Moosmüller, H., Arnott, P, Gillies, J., and Skiba, M., 2007: Mineralogy and optical properties of re-suspended desert dust, *International Union of Geodesy and Geophysics (IUGG XXIV) Conference*, Perugia, Italy, July, 2-13, 2007

- Engelbrecht, J.P. and Zielinska, B. (2006). Source Attribution Study in the Southeastern USA using Fine Particle-phase Organic Compounds as Tracers, *DEBITS II (Deposition of Biogeochemically Important Trace Species)-WMO*, capacity building and data sharing workshop, Berg en Dal, Kruger National Park, South Africa, September 13-17, 2006 (**Invited Keynote Speakers**)
- Engelbrecht, J.P. and Walch, K., 2006: Modeling fugitive dust emissions in Pinal County, *Workshop on Agricultural Air Quality: State of the Science*, Potomac, Maryland, U.S.A., June 5-8, 2006.
- Shafer, D. S., Martin, C., Pohlmann, K. F., Russell, C. E., Ye, M., Engelbrecht, J. P., Minor, T. B., Bishop, L., (2005). Establishing baseline environmental conditions for the proposed Yucca Mountain repository, Nevada, U.S.A. *10th International Conference on Environmental Remediation and Radioactive Waste Management*, Scottish Exhibition & Conference Centre, Glasgow, Scotland, Proceedings ICEM05-1172 868-874, September 4-8, 2005
- Engelbrecht, J.P. and Pilliere, H., 2005: Quantitative mineralogical analysis of re-suspended dusts in aerosol samples, by X-ray diffraction, *International Association of Meteorology and Atmospheric Sciences (IAMAS 2005)* Beijing, China, August 2-11, 2005
- Engelbrecht, J.P., Tropp, R., Kuhns, H., Green, M. and Watson, J., 2005: Positive Matrix Factorization (PMF) and Chemical Mass Balance (CMB) receptor modeling applied to IMPROVE data sets from the Northeastern USA, *American Association for Aerosol Research (AAAR) International Specialty Conference*, Atlanta, Georgia, February 8, 2005
- Engelbrecht, J.P. and Gertler, A.W., 2004: Developing chemical source profiles for Greater Cairo, using Positive Matrix Factorization (PMF) receptor modeling, *International Union of Air Pollution Prevention and Environmental Protection Associations (IUAPPA), 13<sup>th</sup> Clean Air and Environmental Protection Congress and Exhibition*, London, UK, August, 22-27, 2004.
- Engelbrecht, J.P. and Gertler, A.W., 2004: Sources of ambient PM in the Greater Cairo area: Application of Positive Matrix Factorization receptor modeling, *Air and Waste Management Association (A&WMA) Meeting 2004*, Indianapolis, Indiana, U.S.A., June 22-25, 2004.
- Engelbrecht, J.P. and Tropp, R.J., 2004: A PCA and PMF study on speciation data from Big Bend National Park, *Air and Waste Management Association (A&WMA) Symposium on Air Quality Measurement Methods and Technology*, Research Triangle Park, NC, U.S.A., April 22, 2004
- Tropp, R.J., Engelbrecht, J.P., Kohl, S.D., Lowenthal, D.H., DuBois, D.W., Chow, J.C., Watson J.G., Countess R.J., Countess S.J., and Michel, E.L., 2004: Assessment of PM<sub>2.5</sub> chemical speciation results for Texas, *Air and Waste Management Association (A&WMA) Symposium on Air Quality Measurement Methods and Technology*, Research Triangle Park, NC, U.S.A., April 22, 2004.
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November 16, 2021