

MARIE EDMONDS

Professor of Volcanology and Petrology

Phone office: +44 1223 333463

marie.edmonds@esc.cam.ac.uk

esc.cam.ac.uk/directory/marie-edmonds

Earth Sciences, University of Cambridge,
Downing Street, Cambridge CB2 3EQ

Queens' College, Silver Street,
Cambridge CB3 9ET

Date of birth: 14 September 1975

Nationality: British

EDUCATION

2002	PhD, Volcanology, Earth Sciences Department, University of Cambridge, UK Advisors: Prof David Pyle, Prof Clive Oppenheimer Thesis: <i>Sulfur and chlorine degassing at the Soufriere Hills Volcano, Montserrat</i>
1997	Bachelor of Arts, Geological Sciences, University of Cambridge, 1 st class

CURRENT POSITIONS

2019 –	Professor, Earth Sciences Department, University of Cambridge, UK
2019 –	The Ron Oxburgh Fellow in Earth Sciences, Queens' College, Cambridge, UK

PREVIOUS POSITIONS

2015 – 2019	Reader, Earth Sciences Department, University of Cambridge, UK
2007 – 2015	Lecturer, Earth Sciences Department, University of Cambridge, UK
2007 – 2019	Official Fellow in Earth Sciences, Queens' College, Cambridge, UK
2006 – 2007	Reader, School of Environmental Sciences, University of East Anglia, UK
2004 – 2006	Mendenhall Fellow, United States Geological Survey, USA
2002 – 2004	Volcanologist, British Geological Survey, UK

FELLOWSHIPS AND AWARDS

2019	Reginald Daly Lecture, <i>VGP</i> Section of the <i>American Geophysical Union</i>
2019	Thermo Fisher Scientific <i>Volcanic & Magmatic Studies Group</i> Award
2017	Wager Medal, <i>International Association Volcanology and Chemistry of the Earth's Interior</i>
2013	William Smith Fund, <i>Geological Society of London</i>
2004 – 2006	United States Geological Survey Mendenhall Fellowship
2004	Natural Environment Research Council Fellowship (declined)
2004	Royal Society Dorothy Hodgkin Fellowship (declined)
1996, 1997	Jesus College Scholarship Prizes
1996	Wiltshire Prize, University of Cambridge, for honours in 1B Geological Sciences

SERVICE AND EXTERNAL POSITIONS

2018 – 2022	Editor, Geochemistry, Geophysics, Geosystems, American Geophysical Union
2017 – 2021	External Examiner Geology Undergraduate Degree, Durham University
2017 – 2021	Chair, Panel A, Natural Environment Research Council, UK
2017 – 2019	Volcanology, Petrology Secretary of the American Geophysical Union
2017	Reviewer for National Academy of Sciences, <i>ERUPT</i> report
2016 – 2017	Member AGU VGP Section Awards Committee
2016 – 2018	Member NERC Training Advisory Board and DTP-2 Working Group
2014 – 2018	Chair, NERC Ion Microprobe Facility steering committee, UK
2014 – 2019	Chair, Reservoirs and Fluxes Directorate, Deep Carbon Observatory
2016 – 2019	Chair, Synthesis Group 2019, Deep Carbon Observatory
2015 – 2018	Secretary for Science, Geological Society of London
2013 – 2019	Elected member of DECADE, Deep Carbon Observatory
2013 – 2018	Elected Member of Council, Geological Society of London
2014 – 2016	Peer Review College, NERC
2007 –	Editorial Board, Journal Volcanological Geothermal Research
2012 – 2014	Member NERC Ion Probe Facility Steering Committee

2008 – 2012	Member Volcanic and Magmatic Studies Group Committee
2004 – 2007	Member David Perlman AGU Award Committee for Journalism in Science
2002 – 4	Member Scientific Advisory Committee, UK Foreign Office

RECENT RESEARCH GRANTS

2019 – 2021	NERC, co-I (Lead PI: Wright, Leeds), <i>COMET: Centre for the Observation and Modeling of Tectonics and Volcanism</i>
2019 – 2022	NERC Highlight Topic directed grant, co-I (Lead, Schmidt, Cambridge), £1.2M, <i>VPlus: integrated remote sensing and modeling of volcanic plumes</i>
2018	A. P. Sloan Foundation, co-I (Lead, Liu, Cambridge), \$215k, <i>UAVs in Volcanology</i>
2018 – 2019	A. P. Sloan Foundation, PI, \$145k, <i>Chair, Synthesis Group 2019, Deep Carbon Observatory</i>
2016 – 2018	A. P. Sloan Foundation, PI, \$99k, <i>Chair, Synthesis Group 2019, Deep Carbon Observatory</i>
2015	Isaac Newton Trust, £30k, w/PDRA <i>Remote sensing of volcanic eruptions</i> NERC ion probe facility award, PI, <i>Sulfur systematics, Holuhraun</i> NERC urgency grant, Co-I, £65k, <i>Source of the sulfur plume from Holuhraun</i>
2014	Synchrotron facility award, co-I, <i>Redox state of melts and gases at Kilauea</i> NERC ion probe facility award, PI, <i>The 1730 Timanfaya eruption, Lanzarote</i> NERC ion probe facility award, co-I, <i>Timescales storage, mixing at Bardarbunga</i> NSF grant, Collaborator (PI B. Houghton), <i>Strombolian and Hawaiian explosions</i>
2014 – 2019	NERC Large Grant, non-lead PI, £3.2M, <i>Rift Volcanism</i> , w/studentship, 5 years NERC, Co-I, COMET, £3M, 5-year programme, <i>Earth Observation</i> , w/studentship

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL RESEARCHERS

PhD students

2018 –	<i>Nicholas Barber, Gates Scholarship, Cambridge</i>
2017 –	<i>Penny Weiser, NERC, Cambridge</i> <i>Emily Mason, EPSRC, Cambridge</i>
2016 –	<i>Julia Woitischek, NERC, Cambridge</i>
2015 –2019	Fiona Iddon, NERC (Riftvolc), Cambridge, submitted July 2019
2014 –2019	Euan Mutch, NERC, Cambridge, now PDRA, University of Maryland
2013 –2018	Lois Salem, NERC, Cambridge, now private sector, London
2012 –2016	Svetlana Sibik, Trinity Hall scholarship, Cambridge
2012 –2016	Elsbeth Robertson, NERC NCEO Bristol
2010 –2014	David Neave, NERC, Cambridge, now tenure track, University of Manchester
2010 –2014	Melissa Plail, NERC, UEA, now Editor, Nature Geoscience
2009 –2013	Brendan McCormick, NERC Cambridge, now tenure track, University of Manchester
2009 –2013	Catherine Hayer, NERC NCEO, Reading, now PDRA, University of Oxford
2009 –2013	Isobel Sides, NERC Cambridge – now Administrative Officer, University of Oxford

Postdoctoral researchers

2016 –2017	Emma Liu, Deep Carbon Observatory, A. P. Sloan Foundation
2016 –2019	Brendan McCormick, NERC/BGS/Isaac Newton Trust
2011 –2013	Margaret Hartley, NERC, 1783 Laki eruption
2010 –2011	Jian Yang, Isaac Newton Trust, SO ₂ plume chemistry in Ecuador

TEACHING

Undergraduate

1 st year:	Earth Sciences course: <i>Natural Hazards, Energy and Resources</i>
2 nd year:	Igneous and metamorphic studies, course convener, 14 lectures, <i>Petrology, Volcanology</i>
3 rd year:	Petrology course, 3 lectures, <i>Volcanology, Ore deposits</i>
4 th year:	Options courses, 8 lectures, <i>Volcanology; Natural Hazards</i>
Queens':	120 hours supervisions (small group tutorials) per year
Field courses:	1-2 weeks undergraduate courses to Spain, Arran

Postgraduate

M. Sci:	Supervision of 2-term research dissertations, 2-4 students per year
---------	---

ORGANISATION OF SCIENTIFIC MEETINGS

2021	Scientific Organising Committee, IAVCEI for the 2021 Rotorua, New Zealand, General Assembly
2020	Goldschmidt Conference Theme Chair: <i>Volcanism in the Earth System</i>
2017	Convener, "Factory Earth" Fermor Meeting, Geological Society of London
2017	Theo Murphy Royal Society Meeting "Magma reservoir architecture and dynamics"
2017	Scientific Organising Committee, IAVCEI for the 2017 Portland General Assembly
2009-2017	Convener or chair for various sessions: at Fall AGU, Goldschmidt, EMC

INSTITUTIONAL POSITIONS

2019 –	Director of Research and Deputy Head of Earth Sciences Department
2019 –	REF 2021 Impact Lead, Earth Sciences Department
2019 – 2020	Director, C-Clear DTP, Cambridge
2017 –	Graduate Tutor, Queens' College
2017 –	University of Cambridge REF 2021 Advisory Group
2017 – 2020	Deputy Senior Tutor, Queens' College
2016 –	Research Committee, Department of Earth Sciences
2012 –	Head of Field Safety, Department of Earth Sciences
2010 –	Section Head Electron Microprobe, Department of Earth Sciences
2009 – 2015	Faculty Board and Degree Committee
2008 –	Statutes and Bursarial Committees, Queens' College

MEMBERSHIP OF SCIENTIFIC BODIES

2004 –	International Association of Volcanology and Chemistry of the Earth's Interior
2014 –	Geochemical Society
2004 –	American Geophysical Union
2014 –	Fellow, Geological Society of London

RECENT OUTREACH AND TRAINING

2018, 2019	Masterclass in Earth Sciences Lecture to year 12 students, University of Cambridge
2017	Christmas Lecture, Dartford Grammar School
2015	ERF-funded Volcanology summer school, Memovolc, Santorini
2015	Pint of Science Festival, Cambridge
2014	Lecture to Essex Rock and Mineral Society
2014	ERF-funded Volcanology Course in Iceland

BOOKS, EDITORSHIPS AND POPULAR ARTICLES

Edmonds, M. Geochemical Monitoring of Volcanoes. In: Paolo Papale (ed.) Forecasting and planning for volcanic hazards, risks and disasters. Elsevier.

Suarez, C., **M. Edmonds**, A. Jones. Guest Editors, Catastrophic perturbations to Earth's Volatiles, Elements Magazine, September 2019.

Fischer, R., A. Aiuppa, **M. Edmonds**. Guest editors, Carbon degassing from Volcanoes, 2017-2019. G-Cubed special section.

Edmonds, M., K. Cashman, M. Holness, M. Jackson, Guest Editors, 2019. Special issue of the Philosophical Transactions of the Royal Society A, Following the Hooke Royal Society Meeting *Magma reservoir architecture and dynamics*, December 2017.

Edmonds, M. and C. Manning, 2017. *The Deep Carbon Observatory: Synthesizing mountains of data*. Research Project update report, EOS, AGU Publications.

Kiseeva, K. and **M. Edmonds**, Guest Editors, *Sulfides*, Elements Magazine, April 2017.

G. Zellmer, M. Edmonds and S. Straub (Guest Editors), Geological Society Special Publication, 2014. *The Role of Volatiles in the Genesis, Evolution and Eruption of Arc Magmas*.

Co-authored two chapters in the Encyclopaedia of Volcanoes, Second Edition, 2014, *Hawaiian and Strombolian Eruptions*, with co-authors B. Houghton, S. Vergnolle, J. Taddeucci and M. James; and *Volatiles in Magmas* with co-authors P. Wallace, T. Plank and E. Hauri.

Number of accepted publications 100, H-Index 34, Citations total 3629, PhD students/postdoctoral researchers.

104. **2020, in review.** Woitischek, J., A. W. Woods, **M. Edmonds**. Degassing at Yasur Volcano. *Journal of Volcanology and Geothermal Research*.
103. **2020, in review.** Ilyinskaya, E., **M. Edmonds**, et al. A self-cleaning tropospheric volcanic plume. *Science*.
102. **2019, in review.** Whitty, R., E. Ilyinskaya, E. Mason, P. Wieser, E. Liu, J. Ciszewski, A. Schmidt, T. Roberts, B. Brooks, M. Pfeffer, T. Mather, **M. Edmonds**, T. Elias, D. J. Schneider, C. Oppenheimer, A. Dybwad, P. A. Nadeau, C. Kern. Volcanogenic SO₂ and PM_{2.5} levels from 2007-2018 from Kilauea Volcano, Hawaii: a comparison of ground-based monitoring networks. *Frontiers*.
101. **2019, in review.** Iddon, F. & **M. Edmonds***. Volatile and trace element systematics of Main Ethiopian Rift magmas. *Geochemistry, Geophysics, Geosystems*.
100. **2020, in press.** **Edmonds, M.**, Geochemical monitoring of volcanoes. In: Paolo Papale (ed.) *Forecasting and planning for volcanic hazards, risks and disasters*. Elsevier.
99. **2019, in review.** Wieser, P. F. Jenner, **M. Edmonds**, John Maclennan, B. E. Kunz, Tracking chalcophile elements from source to vent at Kilauea Volcano, Hawaii. *Geochimica Cosmochimica Acta*.
98. **2019.** Wong, K., E. Mason, S. Brune, M. East, **M. Edmonds**, S. Zahirovic. Deep carbon cycling over the past 200 million years: a review of fluxes in different tectonic settings. *Frontiers*.
97. **2019, in press.** Wieser, P. E., **M. Edmonds**, J. Maclennan, J. Wheeler. Distorted olivine crystals: an unexploited record of magma storage at Kilauea Volcano, Hawaii. *Nature Communications*.
96. **2019, in press.** Wieser, P. E., **M. Edmonds**, J. Maclennan, F. Jenner and B. Kunz. Crystal scavenging from mush piles recorded by melt inclusions. *Nature Communications*.
95. **2019.** Suarez, C., **M. Edmonds**, A. Jones. Catastrophic perturbations to Earth's Deep Carbon Cycle. *Elements* v. 15, no. 5.
94. **2019.** Wieser, P. E., Z. Vukmanovic, R. Kilian, E. Ringe, M. Holness, John Maclennan, **M. Edmonds**. To Sink, Swim, Twin or Nucleate: a critical appraisal of crystal aggregation processes. *Geology*. doi.org/10.1130/G46660.1.
93. **2019.** **Edmonds, M.**, B. Tutolo, K. Iacovino, Y. Moussallam. Magmatic carbon outgassing and uptake of CO₂ by alkaline waters. *American Mineralogist*.
92. **2019.** Werner, C., T. P. Fischer, A. Aiuppa, **M. Edmonds**, C. Cardellini, S. Carn, G. Chiodini, E. Cottrell, and M. Burton. Carbon Dioxide Emissions from Subaerial Volcanic Regions: Two decades in review. *Whole Earth Carbon eds* Beth Orcutt, Raj Dasgupta, Isabelle Daniel. Cambridge University Press.
91. **2019.** Taracsak Z., M.E. Hartley, R. Burgess, **M. Edmonds**, F. Iddon, M-A. Longpre. High fluxes of deep volatiles from ocean island volcanoes: Insights from El Hierro, Canary Islands. *Geochimica et Cosmochimica Acta* 258, 19-36.
90. **2019.** Mutch, E., J. Maclennan, **M. Edmonds**. Rapid trans-crustal magma movement under Icelandic volcanoes. *Nature Geoscience* 12, 569–574. Citations 2.
89. **2019.** Salem, L., **M. Edmonds***, R. A. Corsaro, J. Maclennan. Carbon dioxide in geochemically heterogeneous melt inclusions from Mount Etna, Italy. *Geochemistry, Geophysics, Geosystems*, doi.org/10.1029/2018GC008027. Citations 0.
88. **2019.** Barth, A., **M. Edmonds**, A. W. Woods. Valve-like dynamics of gas flow through a packed crystal mush and cyclic strombolian explosions. *Scientific Reports* 9, 1, p. 821. Citations 3.
87. **2019.** Iddon, F., C. Jackson, K. Fontijn, W. Hutchison, T. A. Mather, D. M. Pyle, G. Yirgu and **M. Edmonds**. Mixing and crystal scavenging in the Main Ethiopian Rift revealed by trace element systematics in feldspars and glasses. *Geochemistry, Geophysics, Geosystems* 20 doi.org/10.1029/2018GC007836. Citations 0.
86. **2019,** McCormick Kilbride, B., G. Wadge, **M. Edmonds**. Multi-year satellite observations of sulfur dioxide gas emissions and lava extrusion at Bagana volcano, Papua New Guinea. *Frontiers in Earth Science* 7, p. 9. Citations 2.
85. **2019,** Cashman, K. V., **M. Edmonds**. Mafic glass compositions: a record of magma storage conditions, mixing and ascent. *Philosophical Transactions Series A*, v. 377, no. 2139, 'Architecture and dynamics of magma reservoirs' Eds. M. Edmonds, K. V. Cashman, M. Holness, M. Jackson. Royal Society, p.20180004. Citations 1.
84. **2019,** **Edmonds, M.**, K.V. Cashman, M.B. Holness, M. Jackson. Architecture and dynamics of magma reservoirs. *Philosophical Transactions Series A*, v. 377, no. 2139, 'Architecture and dynamics of magma reservoirs' Eds. M. Edmonds, K. V. Cashman, M. Holness, M. Jackson. Royal Society. Citations 4.

83. **2019**, White, R.S.W., **M. Edmonds**, J. Maclennan, T. Greenfield and T. Agustsdottir. Melt Movement Through the Icelandic Crust. Philosophical Transactions Series A, Special Issue 'Architecture and dynamics of magma reservoirs' Eds. M. Edmonds, K. V. Cashman, M. Holness, M. Jackson. Royal Society. Citations 3.
82. **2018**, **Edmonds, M.**, E. Liu, T. Mather. A distinct metal fingerprint in arc volcanic emissions. *Nature Geoscience* 11, 10, 790-794. Citations 2.
81. **2018**, **Edmonds, M.**, A.W. Woods. Exsolved volatiles in magma reservoirs. *Journal of Volcanology and Geothermal Research (Invited Review Article)*, v. 368, p. 13-30. Citations 5.
80. **2018**, Hamlyn, J., T.J. Wright, R.J. Walters, C. Pagli, E. Sansosti, F. Casu, S. Pepe, **M. Edmonds**, B. M. Kilbride, D. Keir, J. Neuberg, C. Oppenheimer. What causes subsidence following the 2011 eruption at Nabro (Eritrea)? *Progress in Earth and Planetary Science* 5, 1, 31. Citations 4.
79. **2018**, Liu, E., K. Wood, E. Mason, **M. Edmonds**, A. Aiuppa, G. Giudice, M. Bitetto, V. Francofonte, T. Richardson, S. Burrow, T. Pering, T. C. Wilkes, A. J. S. McGonigle, G. Velasquez. Dynamics of outgassing and plume transport revealed by proximal Unmanned Aerial System (UAS) measurements at Volcán Villarrica, Chile. *Geochemistry, Geophysics, Geosystems* 19 doi.org/10.1029/2018GC007692. Citations 1.
78. **2018**, Muller, C., J. Biggs, S. K. Ebmeier, P. Mothes, P. B. Palacios, P. Jarrin, **M. Edmonds**, M. Ruiz. Temporal Evolution of the Magmatic System at Tungurahua Volcano, Ecuador, detected by geodetic observations. *J. Volcanological Geothermal Research*, 368:63-72. Citations 1.
77. **2018**, Liu, E.J., K.V. Cashman, A.C. Rust, **M. Edmonds**. Insights into the dynamics of mafic magmatic-hydromagmatic eruptions from volatile degassing behaviour: The Hverfjall Fires, Iceland. *Journal of Volcanological and Geothermal Research*, 358, 228-240. Citations 0.
76. **2018**, Wadge G., B. McCormick Kilbride, **M. Edmonds**, R.W. Johnson. Persistent growth of a young andesite lava cone: Bagana volcano, Papua New Guinea. *Journal of Volcanology and Geothermal Research*, 356, 304-15. Citations 1.
75. **2018**, Plail, M., **M. Edmonds**, A.W. Woods, J. Barclay, M. Humphreys, R.A. Herd, T. Christopher. Mafic enclaves record syn-eruptive basalt intrusion and mixing. *Earth and Planetary Science Letters* 484, 30-40. Citations 7.
74. **2017**, Hartley, M.E., O. Shorttle, J. Maclennan, Y. Moussallam, **M. Edmonds**. Olivine-hosted melt inclusions as an archive of redox heterogeneity in magmatic systems. *Earth and Planetary Science Letters* 479, 192-205. Citations 8.
73. **2017**, Ilyinskaya, E., A. Schmidt, T. Mather, F. Pope, C. Witham, P. Baxter, Þ. Jóhannsson, S. Barsotti, M. Pfeffer, A. Singh, P. Sanderson, B. Bergsson, B. McCormick, A. Donovan, N. Peters, **M. Edmonds**. Understanding the environmental impacts of large fissure eruptions: Aerosol and gas emissions from the 2014-2015 Holuhraun eruption (Iceland). *Earth and Planetary Science Letters* 472, 309-322. Citations 14.
72. **2017**, Mason, E., **M. Edmonds***, A.V.T Turchyn. Remobilization of crustal carbon may dominate volcanic arc emissions. *Science* 357, 6348, 290-294. Citations 38.
71. **2017**, Neave, D. A., M. E. Hartley, J. Maclennan, **M. Edmonds**, T. Thordarson. Volatile and light lithophile elements in high-anorthite plagioclase-hosted melt inclusions from Iceland. *Geochimica et Cosmochimica Acta* 205, 100-118. Citations 9.
70. **2017**, **Edmonds, M.** & P. Wallace. Exsolved fluids in magma reservoirs. *Elements*, 13, 1, 29-34. Citations 22.
69. **2017**, **Edmonds, M.** & T. A. Mather. Volcanic sulfides and degassing. *Elements*, 13, 2, 105-106. Citations 7.
68. **2017**, Hughes, E., D. A. Neave, K. Dobson, **M. Edmonds**. How to fragment peralkaline rhyolites: Observations of pumice using combined 2D and 3D imaging. *Journal of Volcanology and Geothermal Research* 336, 179-191. Citations 9.
67. **2016**, McCormick, M., **M. Edmonds***, J. Biggs. Observing eruptions of gas-rich compressible magmas from space. *Nature communications* 7, 13744. Citations 22.
66. **2016**, Moussallam, Y., **M. Edmonds**, N. Peters, E. Gennaro, I. Sides, B. Scaillet, C. Oppenheimer. The impact of volatile degassing on the oxidation state of basaltic magmas; a case study at Kilauea volcano. *Earth and Planetary Science Letters* 450, 317-25. Citations 28.
65. **2016**, Hayer, C., G. Wadge, **M. Edmonds**, T. Christopher. Sensitivity of OMI SO₂ measurements to variable eruptive behaviour at Soufrière Hills Volcano, Montserrat. *Journal of Volcanology and Geothermal Research* 312, 1-10. Citations 7.
64. **2016**, Robertson, E. J., Biggs, **M. Edmonds**, T. Fischer, G. Kianji, W. Koros. Diffuse degassing through continental rift volcanoes: a soil CO₂ survey at Longonot Volcano, Kenya. *Journal of Volcanology and Geothermal Research*, 327, 208-22. Citations 8.

63. **2016, Edmonds, M.**, M. Humphreys, E. H. Hauri and S. Kohn. Extensive, water-rich magma reservoir beneath southern Montserrat. Invited Research Article, *Lithos* 252, 216-33. Citations 15.
62. **2016, Hartley, M. E.**, D. J. Morgan, J. Maclennan, **M. Edmonds**, T. Thordarson. Tracking timescales of short-term precursors to large basaltic fissure eruptions through Fe-Mg diffusion in olivine. *Earth and Planetary Science Letters* 439, 58-70. Citations 27.
61. **2016, Rae, A., M. Edmonds**, J. Maclennan, B. Houghton. Timescales of magma mixing prior to and during the 1959 Kilauea Iki eruption. *Geology*, 44, 6, 463-6. Citations 3.
60. **2016, Humphreys, M., M. Edmonds, M. Kloecking**. The validity of plagioclase-melt geothermometry for decompression-driven magma crystallisation. *American Mineralogist* 101, 4, 769-79. Citations 6.
59. **2016, Houghton, B.F., J. Taddeucci, H.M. Gonnermann, M. Pistolesi, M.R. Patrick, D. Andronico, T.R. Orr, D.A. Swanson, M. Edmonds and R.J. Carey**. Stronger or longer: Discriminating between Hawaiian and Strombolian eruption styles. *Geology*, doi 10.1130/G37423.1. Citations 11.
58. **2015, Edmonds, M.** Flotation of magmatic minerals. *Geology* 43, 7, 655-656. Citations 7.
57. **2015, Edmonds, M.**, S. Michnovich, J. Grattan. Volcanic gases, silent killers. *Advances in Volcanology, Observing the Volcano World: Volcano Crisis Communication*. Editors C. Fearnley, W. McGuire, G. Jolly. Springer. Citations 1.
56. **2015, Hartley, M.**, D. Neave, J. Maclennan, **M. Edmonds**. Diffusive over-hydration of olivine-hosted melt inclusions. *Earth and Planetary Science Letters* 425, 168-178. Citations 26.
55. **2015, Cassidy, M.**, Watt, S.F.L., Talling, P.J. Palmer, M.R., **Edmonds M.**, Wall-Palmer, D., Jutzeler, M., Coussens, M., Gernon, T., Taylor, R.N., Inglis, E., Hunt, J., Le Friant, A., Ishizuka, O. Rapid onset of mafic magmatism facilitated by volcanic edifice collapse. *Geophysical Research Letters* 42(12):4778-85. Citations 16.
54. **2015, Shorttle, O.**, Y. Moussallam, M. Hartley, J. Maclennan, **M. Edmonds**, B. Murton. Fe-XANES analyses of Reykjanes Ridge basalts: Implications for oceanic crust's role in the solid Earth oxygen cycle. *Earth and Planetary Science Letters* 427:272-85. Citations 23.
53. **2015, Sibik, S., M. Edmonds**, J. Maclennan, H. Svensen. Magmas erupted during the main pulse of Siberian Traps volcanism were volatile-poor. *J. Petrology*. 56, 11, 2089–2116. Citations 9.
52. **2015, Christopher, T.E., Blundy, J., Cashman, K., Cole, P., Edmonds, M., Smith, P., Sparks R.S.J. and Stinton, A.** Crustal-scale degassing due to magma system destabilisation and magma-gas decoupling at Soufrière Hills Volcano, Montserrat. *Geochemistry, Geophysics, Geosystems*, 16, 9, 2797-2811. Citations 58.
51. **2015, Humphreys, M., M. Edmonds, T. Christopher and V. Hards**. Discussion on 'Magma storage region processes of the Soufrière Hills Volcano, Montserrat'. Joseph D Devine and Malcolm Rutherford In: *The eruption of Soufriere Hills Montserrat from 2000 to 2010*. Eds G. Wadge, R. Robertson, B. Voight. Geological Society, London, Memoirs, 39. Citations 2.
50. **2015, Edmonds, M.** Partitioning of light lithophile elements during basalt eruptions on Earth and application to Martian shergottites. *Earth and Planetary Science Letters* 411, 142-150. Citations 7.
49. **2015, Zellmer, G. F., M. Edmonds, S. M. Straub**. Volatiles in subduction zone magmatism. In: *The Role of Volatiles in the Genesis, Evolution and Eruption of Arc Magmas*. Eds G. Zellmer, M. Edmonds, S. Straub. Geological Society of London Special Publication 410, pp. 1-7. Citations 28.
48. **2015, Cassidy, M., M. Edmonds, S. Watt, T. Christopher**. Origin of basalts by hybridisation in andesite-dominated arcs. *Journal of Petrology* 56, 2, 325-46. Citations 20.
47. **2015, Edmonds, M., I. Sides, J. Maclennan, B. Houghton, D. Swanson**. Insights into mixing, fractionation and degassing of primitive melts at Kīlauea Volcano, Hawai'i. In: *Hawaiian volcanoes, from source to surface*. Eds: M. Poland, R. Carey, D. Weiss. AGU Monograph Series, pp. 538. Citations 7.
46. **2014, Donovan, A., V. Tsanev, C. Oppenheimer, M. Edmonds**. Reactive halogens (BrO and OCIO) detected in the plume of Soufrière Hills Volcano during an eruption hiatus. *G-Cubed*, 8, 3346-63. Citations 10.
45. **2014, Christopher, T., M. Edmonds, B. Taisne, H. Odbert, A. Costa, V. Hards, G. Wadge**. Periodic sulphur dioxide degassing from the Soufrière Hills Volcano related to deep magma supply. In: *The Role of Volatiles in the Genesis, Evolution and Eruption of Arc Magmas*. Eds G. Zellmer and M. Edmonds. Geological Society of London Special Publication 410, 1, 123-141. Citations 5.
44. **2014, Edmonds, M., Brett, A., M. Humphreys, A. Woods, R. A. Herd**. Magnetite-bubble aggregates at mixing interfaces in andesite magma bodies. In: *The Role of Volatiles in the Genesis, Evolution and Eruption of Arc Magmas*. Eds G. Zellmer and M. Edmonds. Geological Society of London Special Publication 410, 1, 95-121. Citations 18.
43. **2014, Neave, D., J. Maclennan, M. Edmonds, T. Thordarson**. Crystal storage and transfer in basaltic systems: The Skuggafjöll eruption, Iceland. *Journal of Petrology* 55, 12, 2311-46. Citations 25.
42. **2014, Hartley, M., J. Maclennan, M. Edmonds, T. Thordarson**. Reconstructing the deep CO₂ degassing

behaviour of large basaltic fissure eruptions. *Earth and Planetary Science Letters* 393, 120-131. Citations 80.

41. **2014**, Neave, D., J. Maclennan, **M. Edmonds**, T. Thordarson. Melt mixing causes negative correlation of trace element enrichment and CO₂ content prior to an Icelandic eruption. *Earth and Planetary Science Letters* 400, 272-283. Citations 24.

40. **2014**, Plail, M., **M. Edmonds**, M. C. S. Humphreys, J. Barclay and R. A. Herd. Geochemical evidence for relict degassing pathways preserved in andesite. *Earth and Planetary Science Letters* 386, 21-33. Citations 23.

39. **2014**, Sides, I., **M. Edmonds**, J. Maclennan, B. Houghton, D. Swanson. Eruption style at Kīlauea Volcano in Hawai'i linked to primary melt composition. *Nature Geoscience*, 7(6), p.464. Citations 45.

38. **2014**, Sides, I., **M. Edmonds**, J. Maclennan, B. Houghton, D. Swanson. Magma mixing and high fountaining during the 1959 Kīlauea Iki eruption, Hawai'i. *Earth and Planetary Science Letters* 400, 102-112. Citations 23.

37. **2014**, McCormick, B., M. Herzog, J. Yang, **M. Edmonds**, T. A. Mather, S. A. Carn, S. Hidalgo, and B. Langmann. A comparison of satellite-and ground-based measurements of SO₂ emissions from Tungurahua volcano, Ecuador. *Journal of Geophysical Research Atmospheres* 119, 7, 4264–4285. Citations 29.

36. **2014**, Plail, M., J. Barclay, M. C. S. Humphreys, **M. Edmonds**, R. Herd & T. Christopher. Characterisation of mafic enclaves in the erupted products of Soufrière Hills Volcano, Montserrat 1995-2010. In: *The eruption of Soufriere Hills Montserrat from 2000 to 2010*. Eds G. Wadge, R. Robertson, B. Voight. Geological Society, London, Memoirs, 39, 341–358. Citations 19.

35. **2014**, **Edmonds, M.**, M. C. S. Humphreys, E. H. Hauri, R. A. Herd, G. Wadge, H. Rawson, R. Ledden, M. Plail, J. Barclay, A. Aiuppa, T. Christopher, G. Giudice, R. Guida. The role of pre-eruptive vapour in eruption style and longevity at Soufriere Hills Volcano. In: *The eruption of Soufriere Hills Montserrat from 2000 to 2010*. Eds G. Wadge, R. Robertson, B. Voight. Geological Society, London, Memoirs, 39, 289–313. Citations 26.

34. **2013**, Yallup, C., **M. Edmonds**, A. V. Turchyn. Sulphur degassing due to contact metamorphism during flood basalt eruptions. *Geochimica Cosmochimica Acta* 120, 263-279. Citations 11.

33. **2013**, **M. Edmonds**, I. R. Sides, D. Swanson, C. Werner, R. S. Martin, T. A. Mather, R. A. Herd, R. L. Jones, M. I. Mead, G. Sawyer, T. Roberts, A. J. Sutton, T. Elias. Magma storage, transport and degassing during the 2008-10 summit eruption at Kīlauea Volcano, Hawai'i. *Geochimica Cosmochimica Acta* 123, 284-301. Citations 38.

32. **2013**, Parks, M. M., S. Caliro, G. Chiodini, D. M. Pyle, T. A. Mather, K. Berlo, **M. Edmonds**, J. Biggs, P. Nomikou, C. Raptakis. Magmatic degassing at Santorini volcano, Greece, identified from soil gas measurements during the 2011-2012 period of unrest. *Earth and Planetary Science Letters* 377-378, 180-190. Citations 48.

31. **2013**, McCormick, B. T., **M. Edmonds**, T. A. Mather, R. Campion, C. S. L. Hayer, H. E. Thomas and S. A. Carn. Volcano monitoring applications of the Ozone Monitoring Instrument (OMI). Special Publication of the Geological Society of London, 380, 259-291. Citations 33.

30. **2013**, Humphreys, M.C.S., **M. Edmonds**, J. Barclay, M. Plail, D. Parkes & T. Christopher. A new method to quantify the real supply of mafic components to a hybrid andesite. *Contributions to Mineralogy and Petrology*, 165, 1, 191-215. Citations 19.

29. **2012**, McCormick, B. T., **M. Edmonds**, T. A. Mather, and S. A. Carn. First synoptic analysis of volcanic degassing in Papua New Guinea. *Geochemistry, Geophysics, Geosystems*, 13, 3, doi:10.1029/2011GC003945. Citations 32.

28. **2012**, Mather, T. M., M.L.I. Witt, D.M. Pyle, B.M. Quayle, A. Aiuppa, E. Bagnato, R.S. Martin, K.W.W. Sims, **M. Edmonds**, A.J. Sutton and E. Ilyinskaya. Halogens, mercury and other trace metal emissions from the ongoing 2008 summit eruption of Kīlauea volcano, Hawai'i. *Geochimica Cosmochimica Acta* 83, 292-323. Citations 78.

27. **2012**, Neave, D., R. A. Herd, G. Fabbro, C. Petrone and **M. Edmonds**. Melting, differentiation and degassing at Pantelleria Volcano. *Journal of Petrology*, 53, 3, 637-663. Citations 47.

26. **2011**, Wallace, P.J., **M. Edmonds**. The Sulfur Budget in Magmas: Evidence from Melt Inclusions, Submarine Glasses, and Volcanic Gas Emissions. *Reviews in Mineralogy and Geochemistry*, 73, 1, 215-246, DOI: 10.2138/rmg.2011.73.8. Citations 138.

25. **2011**, Johnston, F.K.B., A.V. Turchyn, **M. Edmonds**. Decarbonation Efficiency in Subduction Zones: Implications for the Closure of the Tethys and warm Cretaceous climates. *Earth Planetary Science Letters* 303, 143–152. Citations 55.

24. **2010**, **Edmonds, M.**, A. Aiuppa, M. Humphreys, R. Moretti, G. Giudice, R. S. Martin, R. A. Herd, and T. Christopher. Excess volatiles supplied by mingling of mafic magma at an andesite arc volcano. *Geochem. Geophys. Geosyst.*, doi:10.1029/2009GC002781. Citations 74.

23. **2010**, Humphreys, M. C. S., **Edmonds, M.**, Christopher, T., Hards, V. Magma hybridisation and diffusive exchange recorded in heterogeneous glasses from Soufrière Hills Volcano, Montserrat. *Geophys. Res. Lett.*, 37, doi:10.1029/2009GL041926. Citations 74.

22. **2010**, Christopher, T., **M. Edmonds**, M. C. S. Humphreys, and R. A. Herd. Volcanic gas emissions from Soufrière Hills Volcano, Montserrat 1995–2009, with implications for mafic magma supply and degassing. *Geophys. Res. Lett.*, 37, doi:10.1029/2009GL041325. Citations 63.
21. **2009**, Humphreys, M.C.S., **M. Edmonds**, T. Christopher, V. Hards. Chlorine variations in the magma of Soufrière Hills Volcano, Montserrat: Insights from Cl in hornblende and melt inclusions. *Geochimica et Cosmochimica Acta* 73, 19, 5693-5708. Citations 57.
20. **2008**, **Edmonds, M.**, T. M. Gerlach and R. A. Herd. Halogen degassing from water-poor basaltic magma. *Chemical Geology*, doi:10.1016/j.chemgeo.2008.09.022. Citations 37.
19. **2008**, **Edmonds, M.** New Geochemical Insights into Volcanic Degassing. *Philosophical Transactions of the Royal Society Series A*, 366, 4559-4579, doi: 10.1098/rsta.2008.0185. Citations 82.
18. **2008**, **Edmonds, M.**, K. A. McGee and M. Doukas. Chlorine degassing during the lava dome-building eruption of Mount St Helens, USA, 2004-2005. In: Sherrod, D. S. and Scott, W. E., *A Volcano Rekindled: the first year of renewed eruption at Mount St Helens, 2004-2006*, US Geological Survey Professional Paper 1750. Citations 4.
17. **2008**, Rodriguez, L. A. and Watson, I. M., **Edmonds, M.** and Ryan, G. and Hards, V. L. and Oppenheimer, C. M. M. and Bluth, G. J. S. SO₂ loss rates in the plume emitted by Soufrière Hills volcano, Montserrat. *Journal of Volcanology and Geothermal Research*, 173 (1-2). pp. 135-147. Citations 46.
16. **2007**, **Edmonds, M.** and R.A. Herd. A volcanic degassing event at the explosive-effusive transition. *Geophysical Research Letters*, 34, L21310, doi:10.1029/2007GL031379. Citations 53.
15. **2007**, **Edmonds, M.** and T. M. Gerlach. Vapor segregation and loss in basaltic melts. *Geology* 35, 8, 751-754. Citations 67.
14. **2006**, **Edmonds, M.** and T. M. Gerlach. The airborne lava-seawater interaction plume at Kilauea Volcano, Hawai'i. *Earth and Planetary Science Letters*, 244, 83-96. [Featured in *Nature News and Views*, 440, 620, 30 March 2006 doi:10.1038/440620a], doi: 10.1016/j.epsl.2006.02.005. Citations 17.
13. **2006**, **Edmonds, M.**, R. A. Herd and M. Strutt. Tephra deposits associated with a large lava dome collapse, Soufrière Hills Volcano, Montserrat, 12-15 July 2003. *Journal of Volcanology and Geothermal Research*, 153, 313-330, doi: 10.1016/j.jvolgeores.2005.12.008. Citations 33.
12. **2005**, **Edmonds, M.** and R. A. Herd. An inland-directed base surge generated by the explosive interaction of pyroclastic flows and seawater at Soufrière Hills volcano, Montserrat. *Geology*, 33, 4, 245-248, doi: 10.1130/G21166.1. Citations 40.
11. **2005**, Herd, R. A., **Edmonds, M.**, Bass, V. A. Catastrophic lava dome failure at Soufrière Hills Volcano, Montserrat, 12-13 July 2003. *Journal of Volcanology and Geothermal Research* 148, 234-252. Citations 119.
10. **2004**, Pelinovsky, E., N. Zahibo, P. Dunkley, **M. Edmonds**, R. Herd, T. Talipova, A. Kozelkov, and I. Nikolkina. Tsunami generated by the volcano eruption on July 12–13, 2003 at Montserrat, Lesser Antilles. *Science of Tsunami Hazards* 22, no. 1, 44-57. Citations 48.
9. **2003**, **Edmonds, M.**, C. M. Oppenheimer, D. M. Pyle, R. A. Herd and G. Thompson. SO₂ emissions from Soufrière Hills Volcano and their relationship to conduit permeability, hydrothermal interaction and degassing regime. *Journal of Volcanology and Geothermal Research*, 124, 1-2, 23-43, doi: 10.1016/S0377-0273(03)00041-6. Citations 172.
8. **2003**, **Edmonds, M.**, C. Oppenheimer, D. Pyle and R. Herd. Rainwater and ash leachate analysis as proxies for plume chemistry at Soufrière Hills Volcano, Montserrat. In: C. Oppenheimer, D. Pyle and J. Barclay (eds) *Volcanic Degassing*. Geological Society of London Special Publication, 213, 203-218. Citations 36.
7. **2003**, **Edmonds, M.**, R A Herd, B Galle and C Oppenheimer. Automated, high time-resolution measurements of SO₂ flux at Soufrière Hills Volcano, Montserrat, West Indies, *Bulletin of Volcanology*, 65, 8, 578-586. Citations 157.
6. **2003**, McGonigle, A. J. S. C. Oppenheimer, A. R. Hayes, B. Galle, **M. Edmonds**, T. Caltabiano, G. Salerno, M. Burton, T. A. Mather. Sulphur dioxide fluxes from Mount Etna, Vulcano, and Stromboli measured with an automated scanning ultraviolet spectrometer. *Journal of Geophysical Research*, 108, B9, doi:10.1029/2002JB002261. Citations 58.
5. **2003**, Galle, B., C. Oppenheimer, A. Geyer, A. J. S. McGonigle, **M. Edmonds**, L. A. Horrocks. A miniaturised ultraviolet spectrometer for remote sensing of SO₂ fluxes: a new tool for volcano surveillance. *Journal of Volcanology and Geothermal Research*, 119, 241-254. Citations 361.
4. **2002**, **Edmonds, M.**, D. M. Pyle and C. Oppenheimer. HCl emissions at Soufrière Hills Volcano, Montserrat, West Indies, during a second phase of dome building, November 1999 to September 2000, *Bulletin of Volcanology*, 64, 21-30, doi: 10.1007/s00445-001-0175-0. Citations 55.

3. **2002**, Norton, G. E., R. B. Watts, B. Voight, G. S. Mattioli, R. A. Herd, S. R. Young, G. E. Devine, W. P. Aspinnall, C. Bonadonna, B. J. Baptie, **M. Edmonds**, A. D. Jolly, S. C. Loughlin, R. Lockett, R. S. J. Sparks. Pyroclastic flow and explosive activity at Soufriere Hills Volcano, Montserrat, during a period of virtually no magma extrusion (March 1998 to November 1999). Geological Society, London, Memoirs 21, 467-481. Citations 70.

2. **2002**, Oppenheimer, C., **M. Edmonds**, P. Francis, M. Burton. Variation in HCl/SO₂ gas ratios observed by Fourier transform spectroscopy at Soufriere Hills Volcano, Montserrat. Geological Society, London, Memoirs 21, 621-639. Citations 29.

1. **2001**, **Edmonds, M.**, D. M. Pyle and C. Oppenheimer. A model of degassing at Soufrière Hills Volcano, Montserrat, West Indies, based on geochemical data. Earth and Planetary Science Letters, 186, 159-173, 186, 159-173. Citations 117.