Richard A. Mathies recent publications:

479. New, J.S., Mathies, R.A., Price, M.C., Cole, M.J., Golozar, M., Spathis, V., Burchell, M.J., Butterworth, A.L. (2020) Characterizing Organic Particle Impacts on Inert Metal Surfaces: Foundations for Capturing Organic Molecules During Hypervelocity Transits of Enceladus Plumes, *Meteoritics and Planetary Sciences*, **55** (3) 465-479, doi: 10.1111/maps.13448.
480. New, J.S., Kazemi, B., Price, M.C., Cole, M.J., Spathis, V., Mathies, R.A., and Butterworth, A.L. (2020) Feasibility of Enceladus Plume Biosignature Analysis: Successful Capture of Organic Ice particles in Hypervelocity Impacts, *Meteoritics and Planetary Sciences*, **55**(8), 1936-1948 doi: 10.1111/maps.13554.
481. Golozar, M., Chu, W.K., Casto, L.D., McCauley, J., Butterworth, A., Mathies, R.A. (2020) Fabrication of High-Quality Glass Microfluidic Devices for Bioanalytical and Space Flight Applications, *MethodsX*, **7** 101043, doi.org/10.1016/j.mex.2020.101043.
482. Kazemi, B., New, J. S., Golozar, M., Casto, L., Butterworth, A. L. and Mathies, R. A. (2020) Method for Detecting and Quantitating Capture of Organic Molecules in Hypervelocity Impacts, *MethodsX* , 8, 101239 https://doi.org/10.1016/j.mex.2021.101239
483. Limaye, S.S., Mogul, R., Baines, K.H., Bullock, M.A., Cockell, C., Cutts, J.A., Gentry, D.M., Grinspoon, D.H., Head, J.W., Jessup, L-L., Kompanichenko, V., Lee, Y.J., Mathies, R., Milojevic, T., Pertzborn, R.A., Rothschild, L., Sasaki, S., Schulze-Makuch, D., Smith, D.J., and Way, M.J. (2021) Venus, an Astrobiology Target, *Astrobiology* **21**, 1163. doi.org/10.1089/ast.2020.2268
484. New, J. S., Kazemi, B., Spathis, V., Price, M. C., Mathies, R. A. and Butterworth, A. L. (2021) Quantitative evaluation of the feasibility of sampling the ice plumes at Enceladus for biomarkers of Extraterrestrial life, *Proc. Natl. Acad. Sci. USA,* **118**, e2106197118 doi.org/10.1073/pnas.2106197118.
485. Mathies, R. A., New, J. S., Golozar, M. and Butterworth, A. L. (2021) On the Feasibility of Informative Biosignature Measurements Using an Enceladus Plume Organic Analyzer, *Planetary Science Journal*, 2: **163**, doi.org/10.3847/PSJ/ac0e9b
486. Casto-Boggess, L. D., Golozar, M., Butterworth, A. L. and Mathies, R. A. (2021) Optimization of Fluorescence Labeling of Trace Analytes: Application to Amino Acid Biosignature Detection with Pacific Blue, *Anal. Chem*. **94**, 1240-1247.
487. Mathies, R. A. and Butterworth A. L. (2021) The Case for an Orbital Mission to Characterize the Organic Content of the Encleadus Plumes*, Bull. AAS,* **53** doi:10.3847/25c2cfeb.94bb9acc
488. MacKenzie, S. M. et al. (2022) Science Objectives for Flagship-Class Mission Concepts for the Search for Evidence of Life at Enceladus, *Astrobiology*, **22 (6)**, 685-712 doi:org/10.1089/ast.2020.2425.
489. Mathies, R. A., Butterworth, A., Golozar, M., McCauley, J., New, J. S. O. (2022) High/Hypervelocity Particle Capture and Analysis Method and Apparatus, *U. S. Patent Application* 17/298,502.
490. Butterworth, A. L., Golozar, M., Spathis, V., Casto, L., and Mathies, R. A. (2022) Survival of Chiral Amino Acids Captured in High Velocity Encleadus Ice Plume Analog Impact Experiments, *AGU Fall Meeting Abstracts*, P34B-01.
491. Estlack, Z., Golozar, M., Butterworth, A, Mathies, R. A. and Kim, J. J., (2023) Operation of a Programmable Microfluidic Organic Analyzer under Microgravity Conditions Simulating Space Flight Environments, *npj Microgravity* June 9 (1) 10.1038/s41526-023-00290-3