



GEOCHEMISTRY ARTICLES – October 2017

Analytical Chemistry

An improved method for fast and selective separation of carotenoids by LC–MS

Abate-Pella, D., Freund, D.M., Slovin, J.P., Hegeman, A.D., Cohen, J.D., 2017. *Journal of Chromatography B* 1067, 34–37.
<http://www.sciencedirect.com/science/article/pii/S157002321731067X>

Development and comparison of chromatographic methods for the analysis of long chain diols and alkenones in biological materials and sediment

de Bar, M.W., Hopmans, E.C., Verweij, M., Dorhout, D.J.C., Sinninghe Damsté, J.S., Schouten, S., 2017. *Journal of Chromatography A* 1521, 150–160.
<http://www.sciencedirect.com/science/article/pii/S0021967317313730>

Effective ion mobility peak width as a new isomeric descriptor for the untargeted analysis of complex mixtures using ion mobility-mass spectrometry

Farenc, M., Paupy, B., Marceau, S., Riches, E., Afonso, C., Giusti, P., 2017. *Journal of The American Society for Mass Spectrometry* 28, 2476–2482.
<https://doi.org/10.1007/s13361-017-1749-1>

The role of analytical chemistry in the study of the Anthropocene

Gałaszka, A., Migaszewski, Z.M., Namieśnik, J., 2017. *TrAC Trends in Analytical Chemistry* 97, 146–152.
<http://www.sciencedirect.com/science/article/pii/S016599361730362X>

Mass Spectrometry, 3rd Edition

Gross, J.H., 2017. Springer, 968 pp.
<http://www.springer.com/us/book/9783319543970>

On the nature of mass spectrometer analyzer contamination

Kang, Y., Schneider, B.B., Covey, T.R., 2017. *Journal of The American Society for Mass Spectrometry* 28, 2384–2392.
<https://doi.org/10.1007/s13361-017-1747-3>

The chemical space for non-target analysis

Milman, B.L., Zhurkovich, I.K., 2017. *TrAC Trends in Analytical Chemistry* 97, 179–187.
<http://www.sciencedirect.com/science/article/pii/S0165993617302704>

Carbon nanotube fiber ionization mass spectrometry: A fundamental study of a multi-walled carbon nanotube functionalized corona discharge pin for polycyclic aromatic hydrocarbons analysis

Nahan, K.S., Alvarez, N., Shanov, V., Vonderheide, A., 2017. *Journal of The American Society for Mass Spectrometry* 28, 2408–2413.
<https://doi.org/10.1007/s13361-017-1774-0>

Application of additional factors supporting the microextraction process

Rutkowska, M., Owczarek, K., Guardia, M.d.I., Płotka-Wasyłka, J., Namieśnik, J., 2017. *TrAC Trends in Analytical Chemistry* 97, 104–119.
<http://www.sciencedirect.com/science/article/pii/S0165993617302959>

Expanding single particle mass spectrometer analyses for the identification of microbe signatures in sea spray aerosol

Sultana, C.M., Al-Mashat, H., Prather, K.A., 2017. *Analytical Chemistry* 89, 10162–10170.
<http://dx.doi.org/10.1021/acs.analchem.7b00933>

Application of atmospheric solids analysis probe mass spectrometry (ASAP-MS) in petroleomics: Analysis of condensed aromatics standards, crude oil, and paraffinic fraction

Tose, L.V., Murgu, M., Vaz, B.G., Romão, W., 2017. *Journal of The American Society for Mass Spectrometry* 28, 2401–2407.
<https://doi.org/10.1007/s13361-017-1764-2>

Selection of internal standards for accurate quantification of complex lipid species in biological extracts by electrospray ionization mass spectrometry—What, how and why?

Wang, M., Wang, C., Han, X., 2017. *Mass Spectrometry Reviews* 36, 693–714.
<http://dx.doi.org/10.1002/mas.21492>

Fast pure ion chromatograms extraction method for LC-MS

Wang, R., Ji, H., Ma, P., Zeng, H., Xu, Y., Zhang, Z.-M., Lu, H.-M., 2017. *Chemometrics and Intelligent Laboratory Systems* 170, 68–74.
<http://www.sciencedirect.com/science/article/pii/S0169743917303726>

Archaeological/Art Organic Chemistry**Noninvasive synchrotron-based X-ray Raman scattering discriminates carbonaceous compounds in ancient and historical materials**

Gueriau, P., Rueff, J.-P., Bernard, S., Kaddissy, J.A., Goler, S., Sahle, C.J., Sokaras, D., Wogelius, R.A., Manning, P.L., Bergmann, U., Bertrand, L., 2017. *Analytical Chemistry* 89, 10819–10826.
<http://dx.doi.org/10.1021/acs.analchem.7b02202>

Compound-specific amino acid $\delta^{15}\text{N}$ values in archaeological shell: Assessing diagenetic integrity and potential for isotopic baseline reconstruction

Misarti, N., Gier, E., Finney, B., Barnes, K., McCarthy, M., 2017. *Rapid Communications in Mass Spectrometry* 31, 1881–1891.
<http://dx.doi.org/10.1002/rcm.7963>

Buyid silk and the tale of Bibi Shahrbanu: Identification of biomarkers of artificial aging (forgery) of silk

Moini, M., Rollman, C.M., 2017. *Analytical Chemistry* 89, 10158–10161.
<http://dx.doi.org/10.1021/acs.analchem.7b02854>

Tandem mass spectrometry of laser-reduced anthraquinones for painted works and dyed cultural artifacts

Napolitano, M.P., Kuo, P.-C., Johnson, J.V., Arslanoglu, J., Yost, R.A., 2017. *International Journal of Mass Spectrometry* 421, 14–24.
<http://www.sciencedirect.com/science/article/pii/S1387380617300234>

 $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ from ^{14}C -AMS dated cereal grains reveal agricultural practices during 4300–2000BC at Arslantepe (Turkey)

Vignola, C., Masi, A., Balossi Restelli, F., Frangipane, M., Marzaioli, F., Passariello, I., Stellato, L., Terrasi, F., Sadori, L., 2017. *Review of Palaeobotany and Palynology* 247, 164–174.
<http://www.sciencedirect.com/science/article/pii/S0034666717301604>

Characterization of Ancient Chinese textiles by ultra-high performance liquid chromatography/quadrupole-time of flight mass spectrometry

Zhang, L., Tian, K., Wang, Y., Zou, J., Du, Z., 2017. *International Journal of Mass Spectrometry* 421, 61–70.
<http://www.sciencedirect.com/science/article/pii/S1387380617300027>

Astrobiology**Critical assessment of analytical techniques in the search for biomarkers on Mars: A mummified microbial mat from Antarctica as a best-case scenario**

Blanco, Y., Gallardo-Carreño, I., Ruiz-Bermejo, M., Puente-Sánchez, F., Cavalcante-Silva, E., Quesada, A., Prieto-Ballesteros, O., Parro, V., 2017. *Astrobiology* 17, 984–996.
<https://doi.org/10.1089/ast.2016.1467>

Instrumentation for testing whether the icy moons of the gas and ice giants are inhabited

Chela-Flores, J., 2017. *Astrobiology* 17, 958–961.
<https://doi.org/10.1089/ast.2016.1621>

The power of self-skepticism in astrobiology

Domagal-Goldman, S.D., 2017. *Astrobiology* 17, 956–957.
<https://doi.org/10.1089/ast.2017.1764>

Searching for life on Mars before it is too late

Fairén, A.G., Parro, V., Schulze-Makuch, D., Whyte, L., 2017. *Astrobiology* 17, 962–970.
<https://doi.org/10.1089/ast.2017.1703>

The live universe. A biologist's perspective

Ferreira, R.B., Ferreira, J.B., 2017. *Frontiers in Astronomy and Space Sciences* 4:17. doi: 10.3389/fspas.2017.00017. <https://www.frontiersin.org/article/10.3389/fspas.2017.00017>

Correlations between life-detection techniques and implications for sampling site selection in planetary analog missions

Gentry, D.M., Amador, E.S., Cable, M.L., Chaudry, N., Cullen, T., Jacobsen, M.B., Murukesan, G., Schwieterman, E.W., Stevens, A.H., Stockton, A., Tan, G., Yin, C., Cullen, D.C., Geppert, W., 2017. *Astrobiology* 17, 1009–1021. <https://doi.org/10.1089/ast.2016.1575>

Protecting our investment in the exploration and utilization of space

Kminek, G., Fisk, L.A., 2017. *Astrobiology* 17, 955–955. <https://doi.org/10.1089/ast.2017.1748>

Exploring fingerprints of the extreme thermoacidophile *Metallosphaera sedula* grown on synthetic martian regolith materials as the sole energy sources

Kölbl, D., Pignitter, M., Somoza, V., Schimak, M.P., Strbak, O., Blazevic, A., Milojevic, T., 2017. *Frontiers in Microbiology* 8, 1918. doi: 10.3389/fmicb.2017.01918. <https://www.frontiersin.org/article/10.3389/fmicb.2017.01918>

Reflections on O₂ as a biosignature in exoplanetary atmospheres

Meadows, V.S., 2017. *Astrobiology* 17, 1022–1052. <https://doi.org/10.1089/ast.2016.1578>

Laboratory investigations on the survival of *Bacillus subtilis* spores in deliquescent salt Mars analog environments

Nuding, D.L., Gough, R.V., Venkateswaran, K.J., Spry, J.A., Tolbert, M.A., 2017. *Astrobiology* 17, 997–1008. <https://doi.org/10.1089/ast.2016.1545>

Four fallacies and an oversight: Searching for martian life

Rummel, J.D., Conley, C.A., 2017. *Astrobiology* 17, 971–974. <https://doi.org/10.1089/ast.2017.1749>

Methane: Fuel or exhaust at the emergence of life?

Russell, M.J., Nitschke, W., 2017. *Astrobiology* 17, 1053–1066. <https://doi.org/10.1089/ast.2016.1599>

The adaptability of life on Earth and the diversity of planetary habitats

Schulze-Makuch, D., Airo, A., Schirmack, J., 2017. *Frontiers in Microbiology* 8, 2011. doi: 10.3389/fmicb.2017.02011. <https://www.frontiersin.org/article/10.3389/fmicb.2017.02011>

Biochemistry**Structural and mechanistic characterization of an archaeal-like chaperonin from a thermophilic bacterium**

An, Y.J., Rowland, S.E., Na, J.-H., Spigolon, D., Hong, S.K., Yoon, Y.J., Lee, J.-H., Robb, F.T., Cha, S.-S., 2017. *Nature Communications* 8, Article 827. <https://doi.org/10.1038/s41467-017-00980-z>

Bacterial nanotubes: a conduit for intercellular molecular trade

Baidya, A.K., Bhattacharya, S., Dubey, G.P., Mamou, G., Ben-Yehuda, S., 2018. *Current Opinion in Microbiology* 42, 1–6. <http://www.sciencedirect.com/science/article/pii/S1369527417301388>

When eukaryotes and prokaryotes look alike: the case of regulatory RNAs

Felden, B., Paillard, L., 2017. *FEMS Microbiology Reviews* 41, 624–639. <http://dx.doi.org/10.1093/femsre/fux038>

The minimum biological energy quantum

Müller, V., Hess, V., 2017. *Frontiers in Microbiology* 8, 2019. doi: 10.3389/fmicb.2017.02019. <https://www.frontiersin.org/article/10.3389/fmicb.2017.02019>

Rhodopsin: Evolution and comparative physiology

Ostrovsky, M.A., 2017. *Paleontological Journal* 51, 562–572. <https://doi.org/10.1134/S0031030117050069>

Microbial organic acid production as carbon dioxide sink

Steiger, M.G., Mattanovich, D., Sauer, M., 2017. *FEMS Microbiology Letters* 364, Article fnx212. <http://dx.doi.org/10.1093/femsle/fnx212>

Integrated structural biology and molecular ecology of N-cycling enzymes from ammonia-oxidizing archaea

Tolar, B.B., Herrmann, J., Bargar, J.R., van den Bedem, H., Wakatsuki, S., Francis, C.A., 2017. Environmental Microbiology Reports 9, 484–491. <http://dx.doi.org/10.1111/1758-2229.12567>

The plasticity of cyanobacterial carbon metabolism

Xiong, W., Cano, M., Wang, B., Douchi, D., Yu, J., 2017. Current Opinion in Chemical Biology 41, 12–19. <http://www.sciencedirect.com/science/article/pii/S1367593117300583>

Communal metabolism of methane and the rare earth element switch

Yu, Z., Chistoserdova, L., 2017. Journal of Bacteriology 199, Article e00328–17. <http://jb.asm.org/content/199/22/e00328-17.abstract>

Biodegradation**Biodegradation of gaseous toluene with mixed microbial consortium in a biofilter: steady state and transient operation**

Rajamanickam, R., Baskaran, D., 2017. Bioprocess and Biosystems Engineering 40, 1801–1812. <https://doi.org/10.1007/s00449-017-1834-7>

Anaerobic oxidation of ethane, propane, and butane by marine microbes: A mini review

Singh, R., Guzman, M.S., Bose, A., 2017. Frontiers in Microbiology 8, 2056. doi: 10.3389/fmicb.2017.02056. <https://www.frontiersin.org/article/10.3389/fmicb.2017.02056>

Biogeochemistry**Characteristics of naturally grown biofilms in deep groundwaters and their heavy metal sorption property in a deep subsurface environment**

Amano, Y., Iwatsuki, T., Naganuma, T., 2017. Geomicrobiology Journal 34, 769–783. <http://dx.doi.org/10.1080/01490451.2016.1267281>

Small changes in Cu redox state and speciation generate large isotope fractionation during adsorption and incorporation of Cu by a phototrophic biofilm

Coutaud, M., Méheut, M., Glatzel, P., Pokrovski, G.S., Viers, J., Rols, J.-L., Pokrovsky, O.S., 2018. Geochimica et Cosmochimica Acta 220, 1–18. <http://www.sciencedirect.com/science/article/pii/S0016703717305732>

Clay minerals interaction with microorganisms: a review

Cuadros, J., 2017. Clay Minerals 52, 235. <http://claymin.geoscienceworld.org/content/52/2/235.abstract>

Evaluating the microbial community and gene regulation involved in crystallization kinetics of ZnS formation in reduced environments

Falk, N., Chaganti, S.R., Weisener, C.G., 2018. Geochimica et Cosmochimica Acta 220, 201–216. <http://www.sciencedirect.com/science/article/pii/S0016703717306282>

Modeling sediment transport with an integrated view of the biofilm effects

Fang, H.W., Lai, H.J., Cheng, W., Huang, L., He, G.J., 2017. Water Resources Research 53, 7536–7557. <http://dx.doi.org/10.1002/2017WR020628>

Species-specific sensitivity of dinoflagellate cysts to aerobic degradation: A five-year natural exposure experiment

Gray, D.D., Zonneveld, K.A.F., Versteegh, G.J.M., 2017. Review of Palaeobotany and Palynology 247, 175–187. <http://www.sciencedirect.com/science/article/pii/S0034666717300453>

Constant flux of spatial niche partitioning through high-resolution sampling of magnetotactic bacteria

He, K., Gilder, S.A., Orsi, W.D., Zhao, X., Petersen, N., 2017. Applied and Environmental Microbiology 83, e01382–17. <http://aem.asm.org/content/83/20/e01382-17.abstract>

An overview and perspectives on organic geochemistry

Hu, J., Peng, P., 2017. Acta Sedimentologica Sinica 35, 968–980. <http://www.cjxb.ac.cn/EN/abstract/abstract3809.shtml>

Microscopic and spectroscopic insights into uranium phosphate mineral precipitated by *Bacillus mucilaginosus*

Huang, W., Cheng, W., Nie, X., Dong, F., Ding, C., Liu, M., Li, Z., Hayat, T., Alharbi, N.S., 2017. ACS Earth and Space Chemistry 1, 483–492. <http://dx.doi.org/10.1021/acsearthspacechem.7b00060>

A nanoscale study of carbon and nitrogen fluxes in mats of purple sulfur bacteria: Implications for carbon cycling at the surface of coastal sediments

Hubas, C., Boeuf, D., Jesus, B., Thiney, N., Bozec, Y., Jeanthon, C., 2017. Frontiers in Microbiology 8, 1995. doi: 10.3389/fmicb.2017.01995. <https://www.frontiersin.org/article/10.3389/fmicb.2017.01995>

Goo, glue, and grain binding: Importance of biofilms for diagenesis in sandstones

Jones, S., 2017. *Geology* 45, 959–960.
<http://dx.doi.org/10.1130/focus102017.1>

Microbial healing of cracks in concrete: a review

Joshi, S., Goyal, S., Mukherjee, A., Reddy, M.S., 2017. *Journal of Industrial Microbiology & Biotechnology* 44, 1511–1525.
<https://doi.org/10.1007/s10295-017-1978-0>

***Bacillus* sp. acting as dual role for corrosion induction and corrosion inhibition with carbon steel (CS)**

Karn, S.K., Fang, G., Duan, J., 2017. *Frontiers in Microbiology* 8, 2038. doi: 10.3389/fmicb.2017.02038.
<https://www.frontiersin.org/article/10.3389/fmicb.2017.02038>

Dissolved fulvic acids from a high arsenic aquifer shuttle electrons to enhance microbial iron reduction

Kulkarni, H.V., Mladenov, N., McKnight, D.M., Zheng, Y., Kirk, M.F., Nemergut, D.R., 2018. *Science of The Total Environment* 615, 1390–1395.
<http://www.sciencedirect.com/science/article/pii/S0048969717325135>

Targeted quantification of functional enzyme dynamics in environmental samples for microbially mediated biogeochemical processes

Li, M., Gao, Y., Qian, W.-J., Shi, L., Liu, Y., Nelson, W.C., Nicora, C.D., Resch, C.T., Thompson, C., Yan, S., Fredrickson, J.K., Zachara, J.M., Liu, C., 2017. *Environmental Microbiology Reports* 9, 512–521.
<http://dx.doi.org/10.1111/1758-2229.12558>

Causes of uncertainty in observed and projected heterotrophic respiration from Earth System Models

Lynch, C., Hartin, C., Chen, M., Bond-Lamberty, B., 2017. *Biogeosciences Discussions* 2017, 1–28.
<https://www.biogeosciences-discuss.net/bg-2017-405/>

Transformation of ACC into aragonite and the origin of the nanogranular structure of nacre

Macías-Sánchez, E., Willinger, M.G., Pina, C.M., Checa, A.G., 2017. *Scientific Reports* 7, Article 12728.
<https://doi.org/10.1038/s41598-017-12673-0>

Nanowires of *Geobacter sulfurreducens* require redox cofactors to reduce metals in pore spaces too small for cell passage

Michelson, K., Sanford, R.A., Valocchi, A.J., Werth, C.J., 2017. *Environmental Science & Technology* 51, 11660–11668.
<http://dx.doi.org/10.1021/acs.est.7b02531>

Substrate availability, pH, and temperature influence methanogenesis and mild steel corrosion

Okoro, C.C., Samuel, O., Lin, J., 2017. *Geomicrobiology Journal* 34, 729–736.
<http://dx.doi.org/10.1080/01490451.2016.1257662>

CaCO₃ and MgCO₃ dissolving halophilic bacteria

Orhan, F., Demirci, A., Yanmis, D., 2017. *Geomicrobiology Journal* 34, 804–810.
<http://dx.doi.org/10.1080/01490451.2016.1273410>

The identification of cable bacteria attached to the anode of a benthic microbial fuel cell: Evidence of long distance extracellular electron transport to electrodes

Reimers, C.E., Li, C., Graw, M.F., Schrader, P.S., Wolf, M., 2017. *Frontiers in Microbiology* 8, 2055. doi: 10.3389/fmicb.2017.02055.
<https://www.frontiersin.org/article/10.3389/fmicb.2017.02055>

Microbial functional genes elucidate environmental drivers of biofilm metabolism in glacier-fed streams

Ren, Z., Gao, H., Elser, J.J., Zhao, Q., 2017. *Scientific Reports* 7, Article 12668.
<https://doi.org/10.1038/s41598-017-13086-9>

Hydrothermal nontronite formation associated with microbes from low-temperature diffuse hydrothermal vents at the South Mid-Atlantic Ridge

Ta, K., Peng, X., Chen, S., Xu, H., Li, J., Du, M., Hao, J., Lin, Y., 2017. *Journal of Geophysical Research: Biogeosciences* 122, 2375–2392.
<http://dx.doi.org/10.1002/2017JG003852>

Bridging spatially segregated redox zones with a microbial electrochemical snorkel triggers biogeochemical cycles in oil-contaminated River Tyne (UK) sediments

Viggi, C.C., Matturro, B., Frascadore, E., Insogna, S., Mezzi, A., Kaciulis, S., Sherry, A., Mejeha, O.K., Head, I.M., Vaiopoulou, E., Rabaey, K., Rossetti, S., Aulenta, F., 2017. *Water Research* 127, 11–21.
<http://www.sciencedirect.com/science/article/pii/S0043135417308266>

Biomass/Biofuels**Manipulating environmental stresses and stress tolerance of microalgae for enhanced production of lipids and value-added products—A review**

Chen, B., Wan, C., Mehmood, M.A., Chang, J.-S., Bai, F., Zhao, X., 2017. *Bioresour. Technol.* 244, 1198–1206.
<http://www.sciencedirect.com/science/article/pii/S0960852417308386>

Quantitative *in situ* mass spectrometry analysis of mannitol decomposition products under hydrothermal conditions

Duangkaew, P., Inoue, S., Aki, T., Nakashimada, Y., Okamura, Y., Tajima, T., Matsumura, Y., 2017. *Energy & Fuels* 31, 10866–10873. <http://dx.doi.org/10.1021/acs.energyfuels.7b01558>

Modeling the transformation of atmospheric CO₂ into microalgal biomass

Hasan, M.F., Vogt, F., 2017. *Analyst* 142, 4089–4098. <http://dx.doi.org/10.1039/C7AN01054K>

Microbial fuel cell powered by lipid extracted algae: A promising system for algal lipids and power generation

Khandelwal, A., Vijay, A., Dixit, A., Chhabra, M., 2018. *Bioresource Technology* 247, 520–527. <http://www.sciencedirect.com/science/article/pii/S096085241731684X>

Cell disruption and lipid extraction for microalgal biorefineries: A review

Lee, S.Y., Cho, J.M., Chang, Y.K., Oh, Y.-K., 2017. *Bioresource Technology* 244, 1317–1328. <http://www.sciencedirect.com/science/article/pii/S0960852417309252>

***In-situ* biogas upgrading process: Modeling and simulations aspects**

Lovato, G., Alvarado-Morales, M., Kovalovszki, A., Peprah, M., Kougiaris, P.G., Rodrigues, J.A.D., Angelidaki, I., 2017. *Bioresource Technology* 245, 332–341. <http://www.sciencedirect.com/science/article/pii/S0960852417314955>

A review of hydrogen production by photosynthetic organisms using whole-cell and cell-free systems

Martin, B.A., Frymier, P.D., 2017. *Applied Biochemistry and Biotechnology* 183, 503–519. <https://doi.org/10.1007/s12010-017-2576-3>

Abiotic stresses as tools for metabolites in microalgae

Paliwal, C., Mitra, M., Bhayani, K., Bharadwaj, S.V.V., Ghosh, T., Dubey, S., Mishra, S., 2017. *Bioresource Technology* 244, 1216–1226. <http://www.sciencedirect.com/science/article/pii/S0960852417307125>

Engineering nanoreactors using bacterial microcompartment architectures

Plegaria, J.S., Kerfeld, C.A., 2018. *Current Opinion in Biotechnology* 51, 1–7. <http://www.sciencedirect.com/science/article/pii/S0958166917301374>

A fatty acyl coenzyme A reductase promotes wax ester accumulation in *Rhodococcus jostii* RHA1

Round, J., Roccor, R., Li, S.-N., Eltis, L.D., 2017. *Applied and Environmental Microbiology* 83, e00902–17. <http://aem.asm.org/content/83/20/e00902-17.abstract>

Enhanced growth and hydrocarbon production of *Botryococcus braunii* KMITL 2 by optimum carbon dioxide concentration and concentration-dependent effects on its biochemical composition and biodiesel properties

Ruangsomboon, S., Prachom, N., Sornchai, P., 2017. *Bioresource Technology* 244, 1358–1366. <http://www.sciencedirect.com/science/article/pii/S096085241730929X>

Aspects and prospects of algal carbon capture and sequestration in ecosystems: a review

Sengupta, S., Gorain, P.C., Pal, R., 2017. *Chemistry and Ecology* 33, 695–707. <http://dx.doi.org/10.1080/02757540.2017.1359262>

Advances in cyanobacterial polyhydroxyalkanoates production

Singh, A.K., Mallick, N., 2017. *FEMS Microbiology Letters* 364, Article fnx189. <http://dx.doi.org/10.1093/femsle/fnx189>

Petroleomic characterization of pyrolysis bio-oils: A review

Staš, M., Chudoba, J., Kubička, D., Blažek, J., Pospíšil, M., 2017. *Energy & Fuels* 31, 10283–10299. <http://dx.doi.org/10.1021/acs.energyfuels.7b00826>

Determination of the biodiesel content in diesel/biodiesel blends by using the near-infrared thermal lens spectroscopy

Ventura, M., Deus, W.B., Silva, J.R., Andrade, L.H.C., Catunda, T., Lima, S.M., 2018. *Fuel* 212, 309–314. <https://www.sciencedirect.com/science/article/pii/S0016236117313133>

Mining terpenoids production and biosynthetic pathway in thraustochytrids

Xie, Y., Sen, B., Wang, G., 2017. *Bioresource Technology* 244, 1269–1280. <http://www.sciencedirect.com/science/article/pii/S0960852417306417>

Molecular characterization of CO₂ sequestration and assimilation in microalgae and its biotechnological applications

Zhu, B., Chen, G., Cao, X., Wei, D., 2017. *Bioresource Technology* 244, 1207–1215. <http://www.sciencedirect.com/science/article/pii/S096085241730874X>

Carbon Cycle

Isotopic ratios of tropical methane emissions by atmospheric measurement

Brownlow, R., Lowry, D., Fisher, R.E., France, J.L., Lanoisellé, M., White, B., Wooster, M.J., Zhang, T., Nisbet, E.G., 2017. *Global Biogeochemical Cycles* 31, 1408–1419.

<http://dx.doi.org/10.1002/2017GB005689>

Measuring Earth's carbon cycle

Smith, J., 2017. *Science* 358, 186–187.

<http://science.sciencemag.org/content/358/6360/186.abstract>

Reviews and syntheses: Field data to benchmark the carbon cycle models for tropical forests

Clark, D.A., Asao, S., Fisher, R., Reed, S., Reich, P.B., Ryan, M.G., Wood, T.E., Yang, X., 2017. *Biogeosciences* 14, 4663–4690.

<https://www.biogeosciences.net/14/4663/2017/>

Carbon fixation from mineral carbonates

Guida, B.S., Bose, M., Garcia-Pichel, F., 2017. *Nature Communications* 8, 1025.

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Early snowmelt significantly enhances boreal springtime carbon uptake

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Seepage-Remote Detection**Surface geochemical prospection for hydrocarbons in the oriental platform; the case of Guebiba oilfield, Sfax region, Tunisia**

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