Publications by U.T. Bornscheuer in *Nature* and *Science* journals

[1] Beidler, I., Steinke, N., Schulze, T., Sidhu, C., Bartosik, D., Zühlke, M.-K., Martin, L.T., Krull, J., Dutschei, T., Ferrero-Bordera, B., Rielicke, J., Kale, V., Sura, T., Trauthwein-Schult, A., Kirstein, I.V., Wiltshire, H.H., Teeling, H., Becher, D., Bengtsson, M.M., Hehemann, J.H., Bornscheuer, U.T., Amann, R.I., Schweder, T. (2024), Alpha glucans indicate bacterial necromass turnover in the marine carbon cycle, *Nat. Commun*., **15**, 4048.

[2] Wei, R., Bornscheuer, U.T. (2023), Designer catalytic nanopores meet PET nanoparticles, *Nat. Catal*., **6**, 1105-1106.

[3] Buller, R., Lutz, S., Kazlauskas, R.J., Snajdrova, R., Moore, J.C., Bornscheuer, U.T. (2023), From nature to industry: harnessing enzymes for biocatalytic processes, *Science*, **382**, eadh8615.

[4] Wu, S. Xiang, C., Zhou, Y., Khan, M.S.H., Liu, W., Feiler, C.G., Wei, R., Weber, G., Höhne, M., Bornscheuer, U.T. (2022), A growth selection for the directed evolution of amine-forming or converting enzymes, *Nature Commun*., **13**, 7458

[5] Büchler, J., Malca, S.H., Patsch, D., Voss, M., Turner, N.J., Bornscheuer, U.T., Alleman, O., Le Chapelain, C., Lumbroso, A., Loiseleur, O., Buller, R. (2022), Algorithm-aided engineering of aliphatic halogenase WelO5* for the asymmetric late-stage functionalization of soraphens, *Nature Commun*., **13**, 371.

[6] Schenkmayerova, A., Pinto, G.P., Toul, T., Marek, M., Hernychova, L., Planas-Iglesias, J., Liskova, V., Pluskal, D., Vasina, M., Emond, S., Dörr, D., Chaloupkova, R., Bednar, D., Prokop, Z., Hollfelder, F., Bornscheuer, U.T., Damborsky, J. (2021), Engineering protein dynamics of an ancestral luciferase, *Nature Commun.*, **12**, 3616.

[7] Wei, R., Tiso, T., Bertling, J., O'Connor, K., Blank, L.M., Bornscheuer, U.T. (2020), Possibilities and limitations of biotechnological plastic degradation and recycling, *Nature Catal.*, **3,** 867-871.

[8] Wei, R., Song, C., Gräsing, D., Schneider, T., Bielytskyi, P., Böttcher, D., Matysik, J., Bornscheuer, U., Zimmermann, W. (2019), Conformational fitting of a flexible oligomeric substrate does not explain the enzymatic PET degradation, *Nature Commun*., **10**, 5581.

[9] Reisky, L., Préchoux, A., Zühlke, A.K., Bäumgen, M., Robb, C.S., Gerlach, N., Roret, T., Stanetty, C., Larocque, R., Michel, G., Song, T., Markert, S., Unfried, F., Mihovilovic, M.D., Trautwein-Schulz, A., Becher, D., Schweder, T.*, Bornscheuer, U.T.*, Hehemann, J.H.* (2019), A marine bacterial enzymatic cascade degrades the algal polysaccharide ulvan, *Nature Chem. Biol.*, **15**, 803-812.

[10] Palm, G.J., Reisky, L., Böttcher, D., Müller, H., Michels, E., Walczak, M. C., Berndt, L., Weiss, M.S., Bornscheuer, U.T., Weber, G. (2019), Structure of the plastic-degrading *I. sakaiensis* MHETase bound to a substrate, *Nature Commun*., **10**, 1717.

[11] Reisky, L., Büchsenschütz, H.C., Engel, J., Song, T., Schweder, T., Hehemann, J.H., Bornscheuer, U.T. (2018), Oxidative demethylation of algal carbohydrates by cytochrome P450 monooxygenases, *Nature Chem. Biol*., **14**, 342-344.

[12] Rudroff, F., Mihovilovic, M.D., Gröger, H., Snajdrova, R., Iding, H., Bornscheuer, U.T. (2018), Opportunities and challenges for combining chemo- and biocatalysis, *Nature Catal*. **1**, 12-22.

[13] Bornscheuer, U. T. (2016), A radical change in enzyme catalysis, *Nature*, **540**, 345-346.

[14] Pavlidis, I.V., Weiß, M.S., Genz., M., Spurr, P., Hanlon, S.P., Wirz, B. Iding, H., Bornscheuer, U.T. (2016), Identification of (*S*)-selective transaminases for the asymmetric synthesis of bulky chiral amines, *Nature Chem.*, **8**, 1076-1082.

[15] Bornscheuer, U.T. (2016), Beating the odds, *Nature Chem. Biol.*, **12**, 54-55.

[16] Bornscheuer, U.T. (2016), Feeding on plastic, *Science*, **351**, 1155-1156.

[17] Bornscheuer, U.T., Huisman, G., Kazlauskas, R.J., Lutz, S., Moore, J., Robins, K. (2012) Engineering the third wave in biocatalysis, *Nature*, **485**, 185-194.

[18] Höhne, M., Schätzle, S., Jochens, H., Robins, K., Bornscheuer, U.T. (2010) Rational assignment of key motifs for function guides *in silico* enzyme identification*, Nature Chem. Biol*., **6**, 807-813.

[19] Kazlauskas, R.J., Bornscheuer, U.T. (2009), Finding better protein engineering strategies, *Nature Chem. Biol.*, **5**, 526-529.
[20] Böttcher, D., Bornscheuer, U.T. (2006), High-throughput screening of activity and enantioselectivity of esterases, *Nature Protocols*, **1**, 2340-2343.
[21] Bornscheuer, U.T. (2004), Finding enzymatic gold on silver surfaces, *Nature Biotechnol*., **22**, 1098-1099.