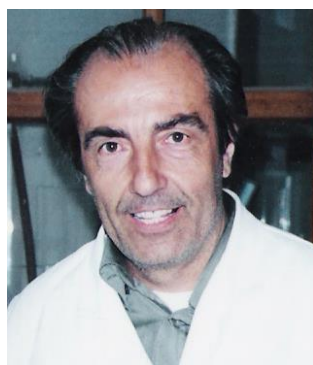




Triantafyllos Roukas, M.Sc, Ph.D

Professor in Bioprocess Engineering

Address Department of Food Science & Technology
School of Agriculture
Aristotle University of Thessaloniki
Box 250
GR- 54124 Thessaloniki
GREECE

e-mail roukas@agro.auth.gr

Prof. Triantafyllos Roukas received the B.Sc. degree in Food Science and Technology (1978, School of Agriculture, Department of Food Science and Technology, Aristotle University of Thessaloniki) and in Chemistry (1982, Department of Chemistry, Aristotle University of Thessaloniki). He received the M.Sc. degree in Food Science and Microbiology (1987, University of Strathclyde, Glasgow, U.K) and the Ph.D. degree in Food Biotechnology (1990, Department of Food Science and Technology, Aristotle University of Thessaloniki). Dr. Roukas was Lecturer (1990-1993), Assistant Professor (1994-1997), and Associate Professor (1998-2001) at the Aristotle University of Thessaloniki. Since 2002 he is Professor in Bioprocess Engineering at the Department of Food Science and Technology of the Aristotle University of Thessaloniki. He was Visiting Research Scientist in Institute of Beer Technology and Microbiology at the Technical University of Munich, Germany (06.1992–09.1992); Department of Chemical Engineering at the Technical University of Munich (06.1994–09.1994); and the Department of Civil Engineering at the University of Washington, Seattle, USA (05.1997 – 09.1997). His main research interests include production of ethanol, organic acids, vitamins, polysaccharides, and enzymes from synthetic media and agro-industrial wastes by microorganisms in shake flask culture, stirred-tank reactor, and airlift reactor; production of chemicals by immobilized enzymes and cells; application of mathematical models to enhance carotene production by *Blakeslea trispora* in different fermentation systems; and role of hydrolytic enzymes and oxidative stress on carotene production by the fungus *Blakeslea trispora*. Dr. Roukas is the author and co-author of more than 74 research journal articles, 2 patents, and author of 2 book chapters and 3 books in the broad area of Bioprocess Engineering and Biochemical Engineering. He has more than 4000 citations for his published works and h-index 39 (Google Scholar). His teaching

activities include teaching in Bioprocess Engineering and Biochemical Engineering to the students of the Department of Food Science and Technology, Faculty of Agriculture, Aristotle University of Thessaloniki, Greece.

Publications

Peer-reviewed articles

1	Roukas, T. , Kotzekidou, P. 2022. From food industry wastes to second generation bioethanol: a review. <i>Reviews in Environmental Science and Biotechnology</i> , 21 : 299–329
2	Roukas, T. , Kotzekidou, P. 2020. Pomegranate peel waste: a new substrate for citric acid production by <i>Aspergillus niger</i> in solid-state fermentation under non-aseptic conditions. <i>Environmental Science and Pollution Research</i> , 27 : 13105–13113
3	Roukas, T. , Kotzekidou, P. 2020. Rotary biofilm reactor: A new tool for long-term bioethanol production from non-sterilized beet molasses by <i>Saccharomyces cerevisiae</i> in repeated-batch fermentation. <i>Journal of Cleaner Production</i> , 257 : 120519
4	Roukas, T. 2018. Modified rotary biofilm reactor: A new tool for enhanced carotene productivity by <i>Blakeslea trispora</i> . <i>Journal of Cleaner Production</i> , 174 : 1114-1121
5	Nanou, K., Roukas, T. , Papadakis, E., Kotzekidou, P. 2017. Carotene production from waste cooking oil by <i>Blakeslea trispora</i> in a bubble column reactor: The role of oxidative stress. <i>Engineering in Life Sciences</i> , 17 (7): 775-780
6	Roukas, T. 2016. The role of oxidative stress on carotene production by <i>blakeslea trispora</i> in submerged fermentation. <i>Critical Reviews in Biotechnology</i> , 36 (3): 424-433
7	Nanou, K., Roukas, T. 2016. Waste cooking oil: A new substrate for carotene production by <i>blakeslea trispora</i> in submerged fermentation. <i>Bioresource Technology</i> , 203 : 198-203
8	Roukas, T. , Varzakakou, M., Kotzekidou, P. 2015. From cheese whey to carotenes by <i>blakeslea trispora</i> in a bubble column reactor. <i>Applied Biochemistry and Biotechnology</i> , 175 (1): 182-193
9	Papagora C., Roukas T. , Kotzekidou P. 2013. Optimization of extracellular lipase production by <i>Debaryomyces hansenii</i> isolates from dry-salted olives using response surface methodology. <i>Food and Bioproducts Processing</i> , 91 : 413-420
10	Nanou, K., Roukas, T. 2013. Oxidative stress response of <i>Blakeslea trispora</i> induced by iron ions during carotene production in shake flask culture. <i>Applied Biochemistry and Biotechnology</i> , 169 (8): 2281-2289.
11	Nanou, K., Roukas, T. , Papadakis, E. 2012. Improved production of carotenes from synthetic medium by <i>Blakeslea trispora</i> in a bubble column reactor. <i>Biochemical Engineering Journal</i> , 67 : 203-207.
12	Filotheou, A., Nanou, K., Papaioannou, E., Roukas, T. , Kotzekidou, P., Liakopoulou-Kyriakides M. 2012. Application of response surface

	methodology to improve carotene production from synthetic medium by <i>Blakeslea trispora</i> in submerged fermentation. <i>Food and Bioprocess Technology</i> , 5: 1189-1196.
13	Nanou, K., Roukas, T. 2011. Stimulation of the biosynthesis of carotenes by oxidative stress in <i>Blakeslea trispora</i> induced by elevated dissolved oxygen levels in the culture medium. <i>Bioresource Technology</i> , 102(17): 8159-8164.
14	Nanou, K., Roukas, T. , Papadakis, E. 2011. Oxidative stress and morphological changes in <i>Blakeslea trispora</i> induced by enhanced aeration during carotene production in a bubble column reactor. <i>Biochemical Engineering Journal</i> , 54(3): 172-177.
15	Roukas, T. , Niavi, P., Kotzekidou, P. 2011. A new medium for spore productin of <i>Blakeslea trispora</i> using response surface methodology. <i>World Journal of Microbiology and Biotechnology</i> , 27: 307-317.
16	Varzakakou, M., Roukas, T. , Papaioannou, E., Kotzekidou, P. and Liakopoulou-Kyriakides, M. 2011. Autolysis of <i>Blakeslea trispora</i> during carotene production from cheese whey in an airlift reactor. <i>Preparative Biochemistry and Biotechnology</i> , 41: 7-21.
17	Nanou, K., Roukas, T. 2010. Oxidative stress response and morphological changes of <i>Blakeslea trispora</i> induced by butylated hydroxytoluene during carotene production. <i>Applied Biochemistry and Biotechnology</i> , 160: 2415-2423.
18	Varzakakou, M., Roukas, T. 2010. Identification of carotenoids produced from cheese whey by <i>Blakeslea trispora</i> in submerged fermentation. <i>Preparative Biochemistry and Biotechnology</i> , 40: 76-82.
19	Varzakakou, M., Roukas, T. , Kotzekidou, P. 2010. Effect of the ratio (+) and (-) mating type of <i>Blakeslea trispora</i> on carotene production from cheese whey in submerged fermentation. <i>World Journal of Microbiology and Biotechnology</i> , 26: 2151-2156.
20	Varzakakou, M., Roukas, T. , Kotzekidou, P., Giamoustaris, A. 2010. Effect of non-ionic surfactants and beta-ionone on the morphology of <i>Blakeslea trispora</i> and carotenoids production from cheese whey in submerged aerobic growth: A statistical approach. <i>Food Biotechnology</i> , 24: 197-214.
21	Papaioannou, E., Roukas, T. and Liakopoulou-Kyriakides M. 2008. Effect of biomass pre-treatment and solvent extraction on β -carotene and lycopene recovery from <i>Blakeslea trispora</i> cells. <i>Preparative Biochemistry and Biotechnology</i> , 38: 246-256.
22	Nanou, K., Roukas, T. and Kotzekidou, P. 2007. Role of hydrolytic enzymes and oxidative strees in autolysis and morphology of <i>Blakeslea trispora</i> during β -carotene production in submerged fermentation. <i>Applied Microbiology and Biotechnology</i> , 74: 447-453.
23	Psani, M., Roukas, T. and Kotzekidou, P. 2006. Evaluation of cheese whey as substrate for carotenoids production by <i>Blakeslea trispora</i> . <i>The Australian Journal of Dairy Technology</i> , 61: 222.
24	Mantzouridou, F., Tsimidou, M. and Roukas, T. 2006. Performance of crude olive pomace oil and soybean oil during carotenoid production by <i>Blakeslea trispora</i> in submerged fermentation. <i>Journal of Agricultural and Food Chemistry</i> , 54: 2575-2581.
25	Mantzouridou, F., Roukas, T. and Achatz, B. 2005. Effect of oxygen transfer rate on β -carotene production from synthetic medium by <i>Blakeslea trispora</i> in shake flask culture. <i>Enzyme and Microbial Technology</i> , 37: 687-694.

26	Mantzouridou, F., Roukas, T. and Kotzekidou, P. 2004. Production of Beta-carotene from synthetic medium by <i>Blakeslea trispora</i> in Fed-batch culture. <i>Food Biotechnology</i> , 18(3): 343-361.
27	Goksungur, Y., Mantzouridou, F., Roukas, T. and Kotzekidou, P. 2004. Production of β -carotene from beet molasses by <i>Blakeslea trispora</i> in stirred tank and bubble column reactors. Development of a mathematical modeling. <i>Applied Biochemistry and Biotechnology</i> , 112: 37-54.
28	Roukas, T. , Mantzouridou, F., Boumpa, Th., Vafiadou, A. and Goksungur, Y. 2003. Production of β -carotene from beet molasses and deproteinized whey by <i>Blakeslea trispora</i> . <i>Food Biotechnology</i> , 17(3): 203-215 [Erratum: <i>Food Biotechnology</i> , 2007, 21: 195-196].
29	Mantzouridou, F., Roukas, T. and Kotzekidou, P. 2002. Optimization of β -carotene production from synthetic medium by <i>Blakeslea trispora</i> in a stirred tank reactor and relationship between morphological changes and pigment formation. <i>Food Biotechnology</i> , 16(3): 167-187.
30	Lazaridou, A., Roukas, T. , Biliaderis, C. and Vaikousi, H. 2002. Characterization of pullulan produced from beet molasses by <i>Aureobasidium pullulans</i> in a stirred tank fermentor under varying agitation. <i>Enzyme and Microbial Technology</i> , 31: 122-132.
31	Goksungur, Y., Mantzouridou, F. and Roukas, T. 2002. Optimization of the production of beta-carotene from molasses by <i>Blakeslea trispora</i> : a statistical approach. <i>Journal of Chemical Technology and Biotechnology</i> , 77: 933-943.
32	Kotzamanidis, Ch., Roukas, T. and Skaracis, G. 2002. Optimization of lactic acid production from beet molasses by <i>Lactobacillus delbrueckii</i> NCIMB 8130. <i>World Journal of Microbiology and Biotechnology</i> , 18: 441-448.
33	Mantzouridou, F., Roukas, T. , Kotzekidou, P., and Liakopoulou, M. 2002. Optimization of β -carotene production from synthetic medium by <i>Blakeslea trispora</i> : A mathematical modeling. <i>Applied Biochemistry and Biotechnology</i> , 101(2): 153-175.
34	Mantzouridou, F., Roukas, T. , and Kotzekidou, P. 2002. Effect of the aeration rate and agitation speed on β -carotene production and morphology of <i>Blakeslea trispora</i> in a stirred tank reactor: mathematical modeling. <i>Biochemical Engineering Journal</i> , 10: 123-135
35	Lazaridou, A., Biliaderis, C., Roukas, T. , and Izydorczyk, M. 2002. Production and characterization of pullulan from beet molasses using a non-pigmented strain of <i>Aureobasidium pullulans</i> in batch culture. <i>Applied Biochemistry and Biotechnology</i> , 97: 1-22.
36	Roukas, T. and Liakopoulou-Kyriakides, M. 2002. Optimization study for the production of citric and gluconic acid from fig water extract by <i>Aspergillus niger</i> in surface fermentation. <i>Food Biotechnology</i> , 16(1): 17-28.
37	Roukas, T. and Mantzouridou, F. 2001. An improved method for extraction of β -carotene from <i>Blakeslea trispora</i> . <i>Applied Biochemistry and Biotechnology</i> , 90: 37-45.
38	Roukas, T. and Mantzuridou, F. 2001. Effect of the aeration rate on pullulan production and fermentation broth rheological properties in an airlift reactor. <i>Journal of Chemical Technology and Biotechnology</i> , 76: 371-376.
39	Roukas, T. 2000. Citric and gluconic acid production from fig by <i>Aspergillus niger</i> using solid-state fermentation. <i>Journal of Industrial Microbiology and Biotechnology</i> , 25: 298-304.

40	Roukas, T. 1999. Citric acid production from carob pod by solid-state fermentation. <i>Enzyme and Microbial Technology</i> , 24: 54-59.
41	Roukas, T. 1999. Rheological properties of pullulan fermentation broth in a stirred tank fermentor. <i>Food Biotechnology</i> , 13: 255-266.
42	Roukas, T. and Liakopoulou-Kyriakides, M. 1999. Production of pullulan from beet molasses by <i>Aureobasidium pullulans</i> in a stirred tank fermentor. <i>Journal of Food Engineering</i> , 40: 89-94.
43	Youssef, F. Roukas, T. and Biliaderis, C.G., 1999. Pullulan production by a non-pigmented strain of <i>Aureobasidium pullulans</i> using batch and fed-batch culture. <i>Process Biochemistry</i> , 34: 355-366.
44	Roukas, T. and Serris, G. 1999. Effect of the shear rate on pullulan production from beet molasses by <i>Aureobasidium pullulans</i> in an airlift reactor. <i>Applied Biochemistry and Biotechnology</i> , 80: 77-89.
45	Roukas, T. 1999. Pullulan production from brewery wastes by <i>Aureobasidium pullulans</i> . <i>World Journal of Microbiology and Biotechnology</i> , 15: 447-450.
46	Roukas, T. 1999. Pullulan production from deproteinized whey by <i>Aureobasidium pullulans</i> . <i>Journal of Industrial Microbiology and Biotechnology</i> , 22: 617-621.
47	Roukas, T. and Kotzekidou, P. 1998. Lactic acid production from deproteinized whey by mixed cultures of free and coimmobilized <i>Lactobacillus casei</i> and <i>Lactococcus lactis</i> cells using fedbatch culture. <i>Enzyme and Microbial Technology</i> , 22: 199-204.
48	Roukas, T. 1998. Citric acid production from carob pod extract by cell recycle of <i>Aspergillus niger</i> ATCC 9142. <i>Food Biotechnology</i> , 12: 91-104.
49	Roukas, T. 1998. Pretreatment of beet molasses to increase pullulan production. <i>Process Biochemistry</i> , 33: 805-810.
50	Youssef, F. Biliaderis, C.G., and Roukas, T. 1998. Enhancement of pullulan production by <i>Aureobasidium pullulans</i> in batch culture using olive oil and sucrose as carbon sources. <i>Applied Biochemistry and Biotechnology</i> , 74: 13-30.
51	Roukas, T. 1998. Carob pod: A new substrate for citric acid production by <i>Aspergillus niger</i> . <i>Applied Biochemistry and Biotechnology</i> , 74: 43-53.
52	Roukas, T. and Kotzekidou, P. 1997. Pretreatment of date syrup to increase citric acid production. <i>Enzyme and Microbial Technology</i> , 21 : 273-276.
53	Roukas, T. 1996. Ethanol production from non-sterilized beet molasses by free and immobilized <i>Saccharomyces cerevisiae</i> cells using fed-batch culture. <i>Journal of Food Engineering</i> , 27: 87-96.
54	Roukas, T. 1996. Continuous ethanol production from nonsterilized carob pod extract by immobilized <i>Saccharomyces cerevisiae</i> on mineral kissiris using a two-reactor system. <i>Applied Biochemistry and Biotechnology</i> , 59:299-307.
55	Roukas, T. and Kotzekidou, P. 1996. Continuous production of lactic acid from deproteinized whey by coimmobilized <i>Lactobacillus casei</i> and <i>Lactococcus lactis</i> cells in a packed-bed reactor. <i>Food Biotechnology</i> , 10:231-242.
56	Roukas, T. and Biliaderis, C. 1995. Evaluation of carob pod as a potential substrate for pullulan production by <i>Aureobasidium pullulans</i> . <i>Applied Biochemistry and Biotechnology</i> , 55: 27-44.
57	Roukas, T. 1995. Ethanol production from carob pod extract by immobilized <i>Saccharomyces cerevisiae</i> cells on the mineral kissiris. <i>Food Biotechnology</i> , 9:

	175-188.
58	Roukas, T. 1994. Kinetics of ethanol production from carob pods extract by immobilized <i>Saccharomyces cerevisiae</i> cells. <i>Applied Biochemistry and Biotechnology</i> , 44: 49-64.
59	Roukas, T. 1994. Ethanol production from nonsterilized carob pod extract by free and immobilized <i>Saccharomyces cerevisiae</i> cells using fed-batch culture. <i>Biotechnology and Bioengineering</i> , 43: 189-194.
60	Roukas, T. 1994. Continuous ethanol production from carob pod extract by immobilized <i>Saccharomyces cerevisiae</i> in a packed-bed reactor. <i>Journal of Chemical Technology and Biotechnology</i> , 59: 387-393.
61	Roukas, T. 1994. Solid-state fermentation of carob pods for ethanol production. <i>Applied Microbiology and Biotechnology</i> , 41: 296-301.
62	Roukas, T. 1993. Ethanol production from carob pods by <i>Saccharomyces cerevisiae</i> . <i>Food Biotechnology</i> , 7: 159-176.
63	Roukas, T. and Lazarides, H. 1991. Ethanol production from deproteinized whey by β -galactosidase coimmobilized cells of <i>Saccharomyces cerevisiae</i> . <i>Journal of Industrial Microbiology</i> , 7: 15-18.
64	Roukas, T. and Kotzekidou, P. 1991. Production of lactic acid from deproteinized whey by coimmobilized <i>Lactobacillus casei</i> and <i>Lactococcus lactis</i> cells. <i>Enzyme and Microbial Technology</i> , 13: 33-38.
65	Roukas, T. , Lazarides, H. and Kotzekidou, P. 1991. Ethanol production from deproteinized whey by <i>Saccharomyces cerevisiae</i> cells entrapped in different immobilization matrices. <i>Milchwissenschaft</i> , 46: 438-441.
66	Roukas, T. and Alichanidis, E. 1991. Citric acid production from beet molasses by cell recycle of <i>Aspergillus niger</i> . <i>Journal of Industrial Microbiology</i> , 7: 71-74.
67	Roukas, T. 1991. Production of citric acid from beet molasses by immobilized cells of <i>Aspergillus niger</i> . <i>Journal of Food Science</i> , 56: 878-880.
68	Roukas, T. 1991. Influence of impeller speed on citric acid production and selected enzyme activities on the TCA cycle. <i>Journal of Industrial Microbiology</i> , 7: 221-225.
69	Roukas, T. and Harvey, L. 1988. The effect of pH on citric acid and gluconic acid production from beet molasses using continuous culture. <i>Biotechnology Letters</i> , 10: 289-294.
70	Kotzekidou, P. and Roukas, T. 1987. Fermentation characteristics of lactobacilli in okra (<i>Hibiscus esculentus</i>) juice. <i>Journal of Food Science</i> , 52: 487-488, 490.
71	Roukas, T. and Kotzekidou, P. 1987. Influence of some trace metals and stimulants on citric acid production from brewery wastes by <i>Aspergillus niger</i> . <i>Enzyme and Microbial Technology</i> , 9: 291-294.
72	Kotzekidou, P. and Roukas, T. 1987. Quality characteristics of fermented and acidified canned okra. <i>Food Science & Technology</i> , 20: 300-304.
73	Roukas, T. and Kotzekidou, P. 1986. Production of citric acid from brewery wastes by surface fermentation using <i>Aspergillus niger</i> . <i>Journal of Food Science</i> , 51: 225-226,228.
74	Kotzekidou, P. and Roukas, T. 1986. Characterization and distribution of lactobacilli during lactic fermentation of okra (<i>Hibiscus esculentus</i>). <i>Journal of Food Science</i> , 51: 623-625.

Patents

Roukas, T., Mantzouridou, F., Theodosiou, E., Kotzekidou, P. and Liakopoulou-Kyriakides, M. A new method for β -carotene production, Greek patent, OBI 1004614/25-6-2004.

Roukas, T., Kotzekidou, P. and Varzakakou, M. A new method for Carotene production from cheese whey, Greek patent, OBI 1006949/3-9-2010.

Chapters in Books

Roukas, T. 1999. Aureobasidium. In: Encyclopedia of Food Microbiology, Eds. R. Robinson, C. Batt and P. Patel. p. 109-112, Academic Press, London.

Roukas, T. 2006. Biotechnology of citric acid production. In : *Food Biotechnology*, Eds. K. Shetty, G. Paliyath, A. Pometto & R. Levin. p. 349-405, CRC Press, Boca Raton, FL.

Books

Roukas, T. 2009. Food Biotechnology, Giahoudis & Co, Thessaloniki, pp 426. ISBN: 978-960-6700-30-9

Roukas, T. 1995. Advanced Food Biotechnology, Aristotle University, Thessaloniki, pp 192.

Roukas, T. 1995. Laboratory practice in Food Biotechnology, Aristotle University, Thessaloniki, pp 67.