Rafael Costa Rodrigues

List of Publications by Year
in descending order

120 papers	12,321 citations	34105 52 h-index	24982 109 g-index
126 all docs	126 docs citations	126 times ranked	8229 citing authors

#	Article	IF	Citations
1	Modifying enzyme activity and selectivity by immobilization. Chemical Society Reviews, 2013, 42, 6290-6307.	38.1	1,552
2	Potential of Different Enzyme Immobilization Strategies to Improve Enzyme Performance. Advanced Synthesis and Catalysis, 2011, 353, 2885-2904.	4.3	1,389
3	Glutaraldehyde in bio-catalysts design: a useful crosslinker and a versatile tool in enzyme immobilization. RSC Advances, 2014, 4, 1583-1600.	3.6	669
4	Strategies for the one-step immobilizationâ€"purification of enzymes as industrial biocatalysts. Biotechnology Advances, 2015, 33, 435-456.	11.7	568
5	Importance of the Support Properties for Immobilization or Purification of Enzymes. ChemCatChem, 2015, 7, 2413-2432.	3.7	466
6	Heterofunctional Supports in Enzyme Immobilization: From Traditional Immobilization Protocols to Opportunities in Tuning Enzyme Properties. Biomacromolecules, 2013, 14, 2433-2462.	5.4	429
7	Immobilization of lipases on hydrophobic supports: immobilization mechanism, advantages, problems, and solutions. Biotechnology Advances, 2019, 37, 746-770.	11.7	409
8	Novozym 435: the â€œperfectâ€• lipase immobilized biocatalyst?. Catalysis Science and Technology, 2019, 9, 2380-2420.	4.1	393
9	Coupling Chemical Modification and Immobilization to Improve the Catalytic Performance of Enzymes. Advanced Synthesis and Catalysis, 2011, 353, 2216-2238.	4.3	329
10	Stabilization of enzymes via immobilization: Multipoint covalent attachment and other stabilization strategies. Biotechnology Advances, 2021, 52, 107821.	11.7	280
11	Lipase from Rhizomucor miehei as an industrial biocatalyst in chemical process. Journal of Molecular Catalysis B: Enzymatic, 2010, 64, 1-22.	1.8	241
12	Polyethylenimine: a very useful ionic polymer in the design of immobilized enzyme biocatalysts. Journal of Materials Chemistry B, 2017, 5, 7461-7490.	5.8	228
13	Lipase from Rhizomucor miehei as a biocatalyst in fats and oils modification. Journal of Molecular Catalysis B: Enzymatic, 2010, 66, 15-32.	1.8	225
14	Chemical Modification in the Design of Immobilized Enzyme Biocatalysts: Drawbacks and Opportunities. Chemical Record, 2016, 16, 1436-1455.	5.8	183
15	Chitosan crosslinked with genipin as support matrix for application in food process: Support characterization and Î²-d-galactosidase immobilization. Carbohydrate Polymers, 2016, 137, 184-190.	10.2	181
16	Enzyme co-immobilization: Always the biocatalyst designers' choiceâ€¦or not?. Biotechnology Advances, 2021, 51, 107584.	11.7	152
17	Enzymatic reactors for biodiesel synthesis: Present status and future prospects. Biotechnology Advances, 2015, 33, 511-525.	11.7	141
18	Enzymatic Synthesis of Biodiesel from Transesterification Reactions of Vegetable Oils and Short Chain Alcohols. JAOCS, Journal of the American Oil Chemists' Society, 2008, 85, 925-930.	1.9	137

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19	Hydrogen Peroxide in Biocatalysis. A Dangerous Liaison. Current Organic Chemistry, 2012, 16, 2652-2672.	1.6	133
20	Effect of the Support Size on the Properties of Î²-Galactosidase Immobilized on Chitosan: Advantages and Disadvantages of Macro and Nanoparticles. Biomacromolecules, 2012, 13, 2456-2464.	5.4	131
21	Amination of enzymes to improve biocatalyst performance: coupling genetic modification and physicochemical tools. RSC Advances, 2014, 4, 38350-38374.	3.6	117
22	Use of Enzymes in the Production of Semi-Synthetic Penicillins and Cephalosporins: Drawbacks and Perspectives. Current Medicinal Chemistry, 2010, 17, 3855-3873.	2.4	109
23	Ultrasound-assisted butyl acetate synthesis catalyzed by Novozym 435: Enhanced activity and operational stability. Ultrasonics Sonochemistry, 2013, 20, 1155-1160.	8.2	105
24	Rapid and high yields of synthesis of butyl acetate catalyzed by Novozym 435: Reaction optimization by response surface methodology. Process Biochemistry, 2011, 46, 2311-2316.	3.7	104
25	Effects of the combined use of Thermomyces lanuginosus and Rhizomucor miehei lipases for the transesterification and hydrolysis of soybean oil. Process Biochemistry, 2011, 46, 682-688.	3.7	102
26	The combined use of ultrasound and molecular sieves improves the synthesis of ethyl butyrate catalyzed by immobilized Thermomyces lanuginosus lipase. Ultrasonics Sonochemistry, 2015, 22, 89-94.	8.2	102
27	Improved production of butyl butyrate with lipase from Thermomyces lanuginosus immobilized on styreneâ€"divinylbenzene beads. Bioresource Technology, 2013, 134, 417-422.	9.6	94
28	Comparison of acid, basic and enzymatic catalysis on the production of biodiesel after RSM optimization. Renewable Energy, 2019, 135, 1-9.	8.9	94
29	Immobilizationâ€"stabilization of the lipase from Thermomyces lanuginosus: Critical role of chemical amination. Process Biochemistry, 2009, 44, 963-968.	3.7	92
30	High stability of immobilized Î²-d-galactosidase for lactose hydrolysis and galactooligosaccharides synthesis. Carbohydrate Polymers, 2013, 95, 465-470.	10.2	90
31	Enzyme production of<scp>d</scp>-gluconic acid and glucose oxidase: successful tales of cascade reactions. Catalysis Science and Technology, 2020, 10, 5740-5771.	4.1	80
32	Combi-lipase for heterogeneous substrates: a new approach for hydrolysis of soybean oil using mixtures of biocatalysts. RSC Advances, 2014, 4, 6863-6868.	3.6	77
33	Optimization of ethyl ester production from olive and palm oils using mixtures of immobilized lipases. Applied Catalysis A: General, 2015, 490, 50-56.	4.3	75
34	Ultrasound technology and molecular sieves improve the thermodynamically controlled esterification of butyric acid mediated by immobilized lipase from Rhizomucor miehei. RSC Advances, 2014, 4, 8675.	3.6	74
35	Optimized preparation of CALB-CLEAs by response surface methodology: The necessity to employ a feeder to have an effective crosslinking. Journal of Molecular Catalysis B: Enzymatic, 2012, 80, 7-14.	1.8	72
36	Fructooligosaccharides synthesis by highly stable immobilized Î²-fructofuranosidase from Aspergillus aculeatus. Carbohydrate Polymers, 2014, 103, 193-197.	10.2	72

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37	Immobilization and stabilization of different Î²-glucosidases using the glutaraldehyde chemistry: Optimal protocol depends on the enzyme. International Journal of Biological Macromolecules, 2019, 129, 672-678.	7.5	71
38	Two step ethanolysis: A simple and efficient way to improve the enzymatic biodiesel synthesis catalyzed by an immobilizedâ€"stabilized lipase from Thermomyces lanuginosus. Process Biochemistry, 2010, 45, 1268-1273.	3.7	70
39	Stabilizing hyperactivated lecitase structures through physical treatment with ionic polymers. Process Biochemistry, 2014, 49, 1511-1515.	3.7	70
40	Production and characterization of biodiesel from oil of fish waste by enzymatic catalysis. Renewable Energy, 2020, 153, 1346-1354.	8.9	67
41	Immobilization of lipase B from <i>Candida antarctica</i> on porous styreneâ€"divinylbenzene beads improves butyl acetate synthesis. Biotechnology Progress, 2012, 28, 406-412.	2.6	66
42	High operational stability of invertase from Saccharomyces cerevisiae immobilized on chitosan nanoparticles. Carbohydrate Polymers, 2013, 92, 462-468.	10.2	64
43	Effect of immobilization protocol on optimal conditions of ethyl butyrate synthesis catalyzed by lipase B from <i>Candida antarctica</i>. Journal of Chemical Technology and Biotechnology, 2013, 88, 1089-1095.	3.2	63
44	Transesterification of Waste Frying Oil and Soybean Oil by Combi-lipases Under Ultrasound-Assisted Reactions. Applied Biochemistry and Biotechnology, 2018, 186, 576-589.	2.9	63
45	Pectin lyase immobilization using the glutaraldehyde chemistry increases the enzyme operation range. Enzyme and Microbial Technology, 2020, 132, 109397.	3.2	63
46	Evaluation of Styrene-Divinylbenzene Beads as a Support to Immobilize Lipases. Molecules, 2014, 19, 7629-7645.	3.8	62
47	Immobilization of Proteins in Poly-Styrene-Divinylbenzene Matrices: Functional Properties and Applications. Current Organic Chemistry, 2015, 19, 1707-1718.	1.6	62
48	Improving the catalytic properties of immobilized Lecitase via physical coating with ionic polymers. Enzyme and Microbial Technology, 2014, 60, 1-8.	3.2	61
49	Comparison of the performance of commercial immobilized lipases in the synthesis of different flavor esters. Journal of Molecular Catalysis B: Enzymatic, 2014, 105, 18-25.	1.8	58
50	Preparation and characterization of a Combi-CLEAs from pectinases and cellulases: a potential biocatalyst for grape juice clarification. RSC Advances, 2016, 6, 27242-27251.	3.6	55
51	Magnetic biocatalysts of pectinase and cellulase: Synthesis and characterization of two preparations for application in grape juice clarification. International Journal of Biological Macromolecules, 2018, 115, 35-44.	7.5	55
52	One Pot Use of Combilipases for Full Modification of Oils and Fats: Multifunctional and Heterogeneous Substrates. Catalysts, 2020, 10, 605.	3.5	55
53	Continuous production of Î²-cyclodextrin from starch by highly stable cyclodextrin glycosyltransferase immobilized on chitosan. Carbohydrate Polymers, 2013, 98, 1311-1316.	10.2	53
54	A new bioprocess for the production of prebiotic lactosucrose by an immobilized Î²-galactosidase. Process Biochemistry, 2017, 55, 96-103.	3.7	53

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55	Optimization of synthesis of fatty acid methyl esters catalyzed by lipase B from Candida antarctica immobilized on hydrophobic supports. Journal of Molecular Catalysis B: Enzymatic, 2013, 94, 51-56.	1.8	52
56	Improvement of pectinase, xylanase and cellulase activities by ultrasound: Effects on enzymes and substrates, kinetics and thermodynamic parameters. Process Biochemistry, 2017, 61, 80-87.	3.7	51
57	Synthesis of butyl butyrate in batch and continuous enzymatic reactors using Thermomyces lanuginosus lipase immobilized in Immobead 150. Journal of Molecular Catalysis B: Enzymatic, 2016, 127, 67-75.	1.8	49
58	Immobilization of Glycoside Hydrolase Families GH1, GH13, and GH70: State of the Art and Perspectives. Molecules, 2016, 21, 1074.	3.8	47
59	The presence of thiolated compounds allows the immobilization of enzymes on glyoxyl agarose at mild pH values: New strategies of stabilization by multipoint covalent attachment. Enzyme and Microbial Technology, 2009, 45, 477-483.	3.2	46
60	Continuous production of fructooligosaccharides and invert sugar by chitosan immobilized enzymes: Comparison between in fluidized and packed bed reactors. Journal of Molecular Catalysis B: Enzymatic, 2015, 111, 51-55.	1.8	45
61	Lecitase ultra: A phospholipase with great potential in biocatalysis. Molecular Catalysis, 2019, 473, 110405.	2.0	43
62	Valorization of Opuntia monacantha (Willd.) Haw. cladodes to obtain a mucilage with hydrocolloid features: Physicochemical and functional performance. International Journal of Biological Macromolecules, 2019, 123, 900-909.	7.5	43
63	Combined Effects of Ultrasound and Immobilization Protocol on Butyl Acetate Synthesis Catalyzed by CALB. Molecules, 2014, 19, 9562-9576.	3.8	42
64	Effect of deacetylation degree of chitosan on rheological properties and physical chemical characteristics of genipin-crosslinked chitosan beads. Food Hydrocolloids, 2020, 106, 105876.	10.7	42
65	Optimized immobilization of polygalacturonase from Aspergillus niger following different protocols: Improved stability and activity under drastic conditions. International Journal of Biological Macromolecules, 2019, 138, 234-243.	7.5	41
66	Influence of reaction parameters in the polymerization between genipin and chitosan for enzyme immobilization. Process Biochemistry, 2019, 84, 73-80.	3.7	41
67	Lipaseâ€catalyzed ethanolysis of soybean oil in a solventâ€free system using central composite design and response surface methodology. Journal of Chemical Technology and Biotechnology, 2008, 83, 849-854.	3.2	40
68	Identification of Bioactive Compounds From Vitis labrusca L. Variety Concord Grape Juice Treated With Commercial Enzymes: Improved Yield and Quality Parameters. Food and Bioprocess Technology, 2016, 9, 365-377.	4.7	40
69	Production of organic solvent tolerant lipase by <i>Staphylococcus caseolyticus</i> EX17 using raw glycerol as substrate. Journal of Chemical Technology and Biotechnology, 2008, 83, 821-828.	3.2	38
70	Optimization of pineapple flavour synthesis by esterification catalysed by immobilized lipase from <i>Rhizomucor miehei</i>. Flavour and Fragrance Journal, 2012, 27, 196-200.	2.6	37
71	Immobilization of pectinase on chitosan-magnetic particles: Influence of particle preparation protocol on enzyme properties for fruit juice clarification. Biotechnology Reports (Amsterdam,) Tj ETQq1 1 0.784314 rgBT /Overlock 10	4.4	37
72	Enzymatic synthesis of ethyl esters from waste oil using mixtures of lipases in a plugâ€flow packedâ€bed continuous reactor. Biotechnology Progress, 2018, 34, 952-959.	2.6	36

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73	Reactivation of covalently immobilized lipase from Thermomyces lanuginosus. Process Biochemistry, 2009, 44, 641-646.	3.7	35
74	Positive effects of the multipoint covalent immobilization in the reactivation of partially inactivated derivatives of lipase from Thermomyces lanuginosus. Enzyme and Microbial Technology, 2009, 44, 386-393.	3.2	33
75	Immobilization of Thermomyces lanuginosus Lipase by Different Techniques on Immobead 150 Support: Characterization and Applications. Applied Biochemistry and Biotechnology, 2014, 172, 2507-2520.	2.9	32
76	Improved reactivation of immobilized-stabilized lipase from Thermomyces lanuginosus by its coating with highly hydrophilic polymers. Journal of Biotechnology, 2009, 144, 113-119.	3.8	29
77	Synergistic effects of Pectinex Ultra Clear and Lallzyme Beta on yield and bioactive compounds extraction of Concord grape juice. LWT - Food Science and Technology, 2016, 72, 157-165.	5.2	27
78	Multipoint covalent immobilization of lipases on aldehyde-activated support: Characterization and application in transesterification reaction. Journal of Molecular Catalysis B: Enzymatic, 2013, 94, 57-62.	1.8	26
79	Aqueous enzymatic extraction of Ricinus communis seeds oil using Viscozyme L. Industrial Crops and Products, 2021, 170, 113811.	5.2	25
80	Complete reactivation of immobilized derivatives of a trimeric glutamate dehydrogenase from Thermus thermophillus. Process Biochemistry, 2010, 45, 107-113.	3.7	24
81	Directed immobilization of CGTase: The effect of the enzyme orientation on the enzyme activity and its use in packed-bed reactor for continuous production of cyclodextrins. Process Biochemistry, 2017, 58, 120-127.	3.7	22
82	Biotechnological prospects of the lipase from Mucor javanicus. Journal of Molecular Catalysis B: Enzymatic, 2013, 93, 34-43.	1.8	21
83	Optimized butyl butyrate synthesis catalyzed by <i>Thermomyces lanuginosus</i> lipase. Biotechnology Progress, 2013, 29, 1416-1421.	2.6	21
84	Efficient purification-immobilization of an organic solvent-tolerant lipase from Staphylococcus warneri EX17 on porous styrene-divinylbenzene beads. Journal of Molecular Catalysis B: Enzymatic, 2014, 99, 51-55.	1.8	21
85	Enzymatic clarification of orange juice in continuous bed reactors: Fluidized-bed versus packed-bed reactor. Catalysis Today, 2021, 362, 184-191.	4.4	21
86	Modulation of a lipase from Staphylococcus warneri EX17 using immobilization techniques. Journal of Molecular Catalysis B: Enzymatic, 2009, 60, 125-132.	1.8	20
87	Use of Lecitase-Ultra immobilized on styrene-divinylbenzene beads as catalyst of esterification reactions: Effects of ultrasounds. Catalysis Today, 2015, 255, 27-32.	4.4	18
88	Microbial Enzymes as Substitutes of Chemical Additives in Baking Wheat Flourâ€”Part I: Individual Effects of Nine Enzymes on Flour Dough Rheology. Food and Bioprocess Technology, 2016, 9, 2012-2023.	4.7	18
89	Effect of feather meal as proteic feeder on combi-CLEAs preparation for grape juice clarification. Process Biochemistry, 2017, 62, 122-127.	3.7	18
90	Improved Enzyme Stability in Lipase-Catalyzed Synthesis of Fatty Acid Ethyl Ester from Soybean Oil. Applied Biochemistry and Biotechnology, 2009, 152, 394-404.	2.9	17

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91	Microbial Enzymes as Substitutes of Chemical Additives in Baking Wheat Flourâ€"Part II: Combined Effects of Nine Enzymes on Dough Rheology. Food and Bioprocess Technology, 2016, 9, 1598-1611.	4.7	17
92	Modification of Immobead 150 support for protein immobilization: Effects on the properties of immobilized <i>Aspergillus oryzae</i> Î²â€galactosidase. Biotechnology Progress, 2018, 34, 934-943.	2.6	17
93	ULTRASOUND-ASSISTED TRANSESTERIFICATION OF SOYBEAN OIL USING COMBI-LIPASE BIOCATALYSTS. Brazilian Journal of Chemical Engineering, 2019, 36, 995-1005.	1.3	17
94	Synthesis of butyl esters via ultrasound-assisted transesterification of macaÃºba (Acrocomia aculeata) acid oil using a biomass-derived fermented solid as biocatalyst. Journal of Molecular Catalysis B: Enzymatic, 2016, 133, S213-S219.	1.8	16
95	Effects of immobilization, pH and reaction time in the modulation of Î±-, Î²- or Î³-cyclodextrins production by cyclodextrin glycosyltransferase: Batch and continuous process. Carbohydrate Polymers, 2017, 169, 41-49.	10.2	16
96	Combination of ultrasound, enzymes and mechanical stirring: A new method to improve Vitis vinifera Cabernet Sauvignon must yield, quality and bioactive compounds. Food and Bioproducts Processing, 2017, 105, 197-204.	3.6	16
97	Production and optimization of isopropyl palmitate via biocatalytic route using homeâ€made enzymatic catalysts. Journal of Chemical Technology and Biotechnology, 2019, 94, 389-397.	3.2	16
98	Improvement of Enzymatic Assisted Extraction Conditions on Anthocyanin Recovery from Different Varieties of V. vinifera and V. labrusca Grape Pomaces. Food Analytical Methods, 2019, 12, 2056-2068.	2.6	16
99	Characterization of dietary fiber from residual cellulose sausage casings using a combination of enzymatic treatment and high-speed homogenization. Food Hydrocolloids, 2020, 100, 105398.	10.7	16
100	Effects of oxygen volumetric mass transfer coefficient and pH on lipase production by Staphylococcus warneri EX17. Biotechnology and Bioprocess Engineering, 2009, 14, 105-111.	2.6	15
101	Physico-chemical properties, kinetic parameters, and glucose inhibition of several beta-glucosidases for industrial applications. Process Biochemistry, 2019, 78, 82-90.	3.7	14
102	Purification, immobilization, and characterization of a specific lipase from <i>Staphylococcus warneri</i> EX17 by enzyme fractionating via adsorption on different hydrophobic supports. Biotechnology Progress, 2011, 27, 717-723.	2.6	12
103	Cloning and expression of the Bacillus amyloliquefaciens transglutaminase gene in E. coli using a bicistronic vector construction. Enzyme and Microbial Technology, 2020, 134, 109468.	3.2	12
104	An efficient decolorization of methyl orange dye by laccase from Marasmiellus palmivorus immobilized on chitosan-coated magnetic particles. Biocatalysis and Agricultural Biotechnology, 2020, 30, 101859.	3.1	11
105	Stability/activity features of the main enzyme components of rohapect 10L. Biotechnology Progress, 2019, 35, e2877.	2.6	10
106	Effect of Tris Buffer in the Intensity of the Multipoint Covalent Immobilization of Enzymes in Glyoxyl-Agarose Beads. Applied Biochemistry and Biotechnology, 2021, 193, 2843-2857.	2.9	10
107	Optimization of transglutaminase extraction produced by <i>Bacillus circulans</i> BL32 on solidâ€state cultivation. Journal of Chemical Technology and Biotechnology, 2008, 83, 1306-1313.	3.2	9
108	Preparation and characterization of cross-linked enzyme aggregates of dextransucrase from Leuconostoc mesenteroides B-512F. Process Biochemistry, 2018, 71, 101-108.	3.7	9

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109	Aqueous Extraction of Seed Oil from Mamey Sapote (Pouteria sapota) after Viscozyme L Treatment. Catalysts, 2021, 11, 748.	3.5	9
110	Dextransucrase immobilized on activated-chitosan particles as a novel biocatalyst. Journal of Molecular Catalysis B: Enzymatic, 2016, 133, S143-S149.	1.8	8
111	Effects of oxygen volumetric mass transfer coefficient on transglutaminase production by Bacillus circulans BL32. Biotechnology and Bioprocess Engineering, 2009, 14, 571-576.	2.6	7
112	Kinetics and Thermodynamics of Thermal Inactivation of Î²-Galactosidase from Aspergillus oryzae. Brazilian Archives of Biology and Technology, 2018, 61, .	0.5	7
113	Optimization and characterization of CLEAs of the very thermostable dimeric peroxidase from Roystonea regia. RSC Advances, 2015, 5, 53047-53053.	3.6	5
114	Physical-Chemical Properties of the Support Immobead 150 Before and After the Immobilization Process of Lipase. Journal of the Brazilian Chemical Society, 2016, , .	0.6	5
115	Preparation of immobilized/stabilized biocatalysts of Î²â€glucosidases from different sources: Importance of the support active groups and the immobilization protocol. Biotechnology Progress, 2019, 35, e2890.	2.6	5
116	Effect of enzymatic treatments and microfiltration on the physicochemical quality parameters of feijoa (<i>Acca sellowiana</i>) juice. International Journal of Food Science and Technology, 2021, 56, 4983-4994.	2.7	4
117	STABILIZATION STUDY OF TETRAMERIC Kluyveromyces lactis Î²-GALACTOSIDASE BY IMMOBILIZATION ON IMMOBEAD: THERMAL, PHYSICO-CHEMICAL, TEXTURAL AND CATALYTIC PROPERTIES. Brazilian Journal of Chemical Engineering, 2019, 36, 1403-1417.	1.3	4
118	Combination of Celluclast and Viscozyme improves enzymatic hydrolysis of residual cellulose casings: process optimization and scale-up. Brazilian Journal of Chemical Engineering, 2020, 37, 463-473.	1.3	2
119	Responses to Lerner A. and Matthias T. Comment on â€œMicrobial Enzymes as Substitutes of Chemical Additives in Baking Wheat Flourâ€”Part II: Combined Effects of Nine Enzymes on Dough Rheology [M.M. Bueno, R.C.S. Thys and R.C. Rodrigues (2016), Food and Bioprocess Technology, 9(9), 1598â€“1611]â€• Food and Bioprocess Technology, 2016, 9, 2127-2127.	4.7	1
120	ESTUDO DAS CONDIÃ‡Ã•ES DE IMOBILIZAÃ‡ÃƒO DA LIPASE DE Thermomyces lanuginosus PARA A PRODUÃ‡ÃƒO DE BIODIESEL. , 0, , .		0