

Gabor Varhegyi

List of Publications by Year in descending order

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101
papers

6,986
citations

87723

38
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82
g-index

102
all docs

102
docs citations

102
times ranked

4515
citing authors

#	ARTICLE	IF	CITATIONS
1	Cellulose Pyrolysis Kinetics: The Current State of Knowledge. Industrial & Engineering Chemistry Research, 1995, 34, 703-717.	1.8	775
2	Thermogravimetric Analysis and Devolatilization Kinetics of Wood. Industrial & Engineering Chemistry Research, 2002, 41, 4201-4208.	1.8	640
3	Kinetic modeling of biomass pyrolysis. Journal of Analytical and Applied Pyrolysis, 1997, 42, 73-87.	2.6	452
4	Kinetics of the thermal decomposition of cellulose, hemicellulose, and sugarcane bagasse. Energy & Fuels, 1989, 3, 329-335.	2.5	289
5	A Round-Robin Study of Cellulose Pyrolysis Kinetics by Thermogravimetry. Industrial & Engineering Chemistry Research, 1999, 38, 2238-2244.	1.8	276
6	Cellulose Pyrolysis Kinetics: A Revisited. Industrial & Engineering Chemistry Research, 1998, 37, 1267-1275.	1.8	267
7	Productive and parasitic pathways in dilute acid-catalyzed hydrolysis of cellulose. Industrial & Engineering Chemistry Research, 1992, 31, 94-100.	1.8	216
8	Thermal decomposition of polypropylene in the presence of wood-derived materials. Journal of Analytical and Applied Pyrolysis, 2000, 56, 273-285.	2.6	208
9	Is the Broido-Shafizadeh Model for Cellulose Pyrolysis True?. Energy & Fuels, 1994, 8, 1345-1352.	2.5	195
10	Thermogravimetric Study of Biomass Pyrolysis Kinetics. A Distributed Activation Energy Model with Prediction Tests. Energy & Fuels, 2011, 25, 24-32.	2.5	173
11	Simultaneous thermogravimetric-mass spectrometric studies of the thermal decomposition of biopolymers. 1. Avicel cellulose in the presence and absence of catalysts. Energy & Fuels, 1988, 2, 267-272.	2.5	148
12	Formation of charcoal from biomass in a sealed reactor. Industrial & Engineering Chemistry Research, 1992, 31, 1162-1166.	1.8	148
13	Review of methods for improving the yield of charcoal from biomass. Energy & Fuels, 1990, 4, 221-225.	2.5	129
14	Decomposition of Cellulose and Glucose in Hot-Compressed Water under Catalyst-Free Conditions.. Journal of Chemical Engineering of Japan, 1998, 31, 131-134.	0.3	126
15	TC/MS, Py-GC/MS and THM-GC/MS study of the composition and thermal behavior of extractive components of Robinia pseudoacacia. Journal of Analytical and Applied Pyrolysis, 2007, 79, 61-70.	2.6	126
16	Aims and methods in non-isothermal reaction kinetics. Journal of Analytical and Applied Pyrolysis, 2007, 79, 278-288.	2.6	118
17	Thermogravimetric and Reaction Kinetic Analysis of Biomass Samples from an Energy Plantation. Energy & Fuels, 2004, 18, 497-507.	2.5	117
18	Kinetics of the thermal decomposition of cellulose in sealed vessels at elevated pressures. Effects of the presence of water on the reaction mechanism. Journal of Analytical and Applied Pyrolysis, 1993, 26, 159-174.	2.6	113

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19	Mathematical Modeling of Char Reactivity in Ar ¹ O ₂ and CO ₂ ² O ₂ Mixtures. <i>Energy & Fuels</i> , 1996, 10, 1208-1214.	2.5	112
20	Electrical and Physical Properties of Carbonized Charcoals. <i>Industrial & Engineering Chemistry Research</i> , 2003, 42, 5140-5151.	1.8	105
21	Effects of Sample Origin, Extraction, and Hot-Water Washing on the Devolatilization Kinetics of Chestnut Wood. <i>Industrial & Engineering Chemistry Research</i> , 2004, 43, 2356-2367.	1.8	99
22	Thermogravimetric/mass spectrometric characterization of two energy crops, <i>Arundo donax</i> and <i>Miscanthus sinensis</i> . <i>Journal of Analytical and Applied Pyrolysis</i> , 1996, 36, 179-190.	2.6	97
23	Comparative study of the thermal behavior of wood and bark of young shoots obtained from an energy plantation. <i>Journal of Analytical and Applied Pyrolysis</i> , 2004, 72, 317-328.	2.6	86
24	Thermal Decomposition of Biomass Wastes. A Kinetic Study. <i>Industrial & Engineering Chemistry Research</i> , 2007, 46, 2428-2437.	1.8	82
25	Kinetics of Charcoal Devolatilization. <i>Energy & Fuels</i> , 2002, 16, 724-731.	2.5	78
26	Thermal Decomposition of Wheat, Oat, Barley, and <i>Brassica carinata</i> Straws. A Kinetic Study. <i>Energy & Fuels</i> , 2009, 23, 646-652.	2.5	74
27	TG, TG-MS, and FTIR Characterization of High-Yield Biomass Charcoals. <i>Energy & Fuels</i> , 1998, 12, 969-974.	2.5	72
28	Simultaneous thermogravimetric-mass spectrometric studies of the thermal decomposition of biopolymers. 2. Sugarcane bagasse in the presence and absence of catalysts. <i>Energy & Fuels</i> , 1988, 2, 273-277.	2.5	66
29	Liquefaction of Cellulose in Hot Compressed Water using Sodium Carbonate: Products Distribution at Different Reaction Temperatures.. <i>Journal of Chemical Engineering of Japan</i> , 1997, 30, 186-190.	0.3	65
30	Tobacco pyrolysis. Kinetic evaluation of thermogravimetric-mass spectrometric experiments. <i>Journal of Analytical and Applied Pyrolysis</i> , 2009, 86, 310-322.	2.6	65
31	Do All Carbonized Charcoals Have the Same Chemical Structure? 1. Implications of Thermogravimetric-Mass Spectrometry Measurements. <i>Industrial & Engineering Chemistry Research</i> , 2007, 46, 5943-5953.	1.8	63
32	CO ₂ Gasification of Biomass Chars: A Kinetic Study. <i>Energy & Fuels</i> , 2009, 23, 94-100.	2.5	60
33	Combustion Kinetics of Corncob Charcoal and Partially Demineralized Corncob Charcoal in the Kinetic Regime. <i>Industrial & Engineering Chemistry Research</i> , 2006, 45, 4962-4970.	1.8	49
34	Combustion Kinetics of Biomass Materials in the Kinetic Regime. <i>Energy & Fuels</i> , 2012, 26, 1323-1335.	2.5	48
35	Thermogravimetric/mass spectrometric characterization of the thermal decomposition of (4-O-methyl-D-glucurono)-D-xylan. <i>Journal of Applied Polymer Science</i> , 1988, 36, 721-728.	1.3	47
36	Thermogravimetric-mass spectrometric characterization of the thermal decomposition of sunflower stem. <i>Energy & Fuels</i> , 1989, 3, 755-760.	2.5	47

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37	Least squares criteria for the kinetic evaluation of thermoanalytical experiments. Examples from a char reactivity study. Journal of Analytical and Applied Pyrolysis, 2001, 57, 203-222.	2.6	46
38	Kinetic Behavior of Torrefied Biomass in an Oxidative Environment. Energy & Fuels, 2013, 27, 1050-1060.	2.5	43
39	Thermogravimetry/mass spectrometry analysis of energy crops. Journal of Thermal Analysis and Calorimetry, 2007, 88, 477-482.	2.0	40
40	Kinetics of the thermal decomposition of cellulose under the experimental conditions of thermal analysis. Theoretical extrapolations to high heating rates. Biomass and Bioenergy, 1994, 7, 69-74.	2.9	39
41	Kinetics of Corncob Pyrolysis. Energy & Fuels, 2012, 26, 2005-2013.	2.5	39
42	Thermal analysis of energy crops. Journal of Analytical and Applied Pyrolysis, 2008, 81, 52-59.	2.6	37
43	Slow Pyrolysis of Woody Residues and an Herbaceous Biomass Crop: A Kinetic Study. Industrial & Engineering Chemistry Research, 2005, 44, 6650-6660.	1.8	36
44	Reaction kinetics in thermal analysis. Part 1. The sensitivity of kinetic equations to experimental errors. A mathematical analysis. Thermochimica Acta, 1982, 57, 13-28.	1.2	35
45	Thermogravimetric-mass spectrometric study on the low temperature oxidation of coals. Fuel Processing Technology, 1991, 28, 221-238.	3.7	33
46	Impact of Systematic Errors on the Determination of Cellulose Pyrolysis Kinetics. Energy & Fuels, 1997, 11, 1309-1310.	2.5	33
47	Thermal Decomposition Kinetics of Woods with an Emphasis on Torrefaction. Energy & Fuels, 2013, 27, 6134-6145.	2.5	33
48	Comparison of Temperature-Programmed Char Combustion in CO ₂ -O ₂ and Ar-O ₂ Mixtures at Elevated Pressure. Energy & Fuels, 1999, 13, 539-540.	2.5	31
49	CO ₂ Gasification of Chars Prepared from Wood and Forest Residue: A Kinetic Study. Energy & Fuels, 2013, 27, 6098-6107.	2.5	31
50	Integration of the rate constant and linearization of the kinetic equations in non-isothermal reaction kinetics. Thermochimica Acta, 1978, 25, 201-207.	1.2	29
51	Formation of selected toxicants from tobacco under different pyrolysis conditions. Journal of Analytical and Applied Pyrolysis, 2009, 85, 47-53.	2.6	29
52	Thermogravimetric Analysis of Tobacco Combustion Assuming DAEM Devolatilization and Empirical Char-Burnoff Kinetics. Industrial & Engineering Chemistry Research, 2010, 49, 1591-1599.	1.8	29
53	Kinetic Aspects of Thermal Analysis. Critical Reviews in Analytical Chemistry, 1988, 19, 65-93.	1.8	29
54	Computer processing of thermogravimetric-mass spectrometric and high pressure thermogravimetric data. Part 1. Smoothing and differentiation. Thermochimica Acta, 1999, 329, 141-145.	1.2	28

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55	CO ₂ Gasification of Torrefied Wood: A Kinetic Study. Energy & Fuels, 2014, 28, 7582-7590.	2.5	27
56	Kinetic evaluation of non-isothermal thermoanalytical curves in the case of independent thermal reactions. Thermochimica Acta, 1979, 28, 367-376.	1.2	25
57	The effects of heat and mass transport on the results of thermal decomposition studies. Journal of Analytical and Applied Pyrolysis, 1987, 11, 83-92.	2.6	23
58	Calculation of the Free Energy Equation Parameters from Ternary Liquid-Liquid Equilibrium Data. Industrial & Engineering Chemistry Fundamentals, 1977, 16, 182-185.	0.7	21
59	Pyrolysis-gas chromatographic-mass spectrometric and thermogravimetric-mass spectrometric investigation of brown coals. Journal of Analytical and Applied Pyrolysis, 1985, 8, 255-269.	2.6	21
60	Correlation between heating values and thermogravimetric data of sewage sludge, herbaceous crops and wood samples. Journal of Thermal Analysis and Calorimetry, 2012, 110, 1501-1509.	2.0	19
61	Thermal decomposition of biomass wastes derived from palm oil production. Journal of Analytical and Applied Pyrolysis, 2021, 155, 105069.	2.6	19
62	Activated Carbon from Macadamia Nut Shell by Air Oxidation in Boiling Water. Industrial & Engineering Chemistry Research, 2001, 40, 578-588.	1.8	18
63	Thermal Decomposition Kinetics of Wood and Bark and Their Torrefied Products. Energy & Fuels, 2017, 31, 4024-4034.	2.5	18
64	Reaction kinetics in thermal analysis: a brief survey of fundamental research problems. Thermochimica Acta, 1987, 110, 95-99.	1.2	17
65	Thermal behavior of corn fibers and corn fiber gums prepared in fiber processing to ethanol. Journal of Analytical and Applied Pyrolysis, 2009, 85, 11-18.	2.6	17
66	Investigation of subbituminous coals by thermogravimetry-mass spectrometry. Thermochimica Acta, 1990, 170, 167-177.	1.2	15
67	Combustion Characteristics of Biomass Charcoals Produced at Different Carbonization Conditions: A Kinetic Study. Energy & Fuels, 2016, 30, 3186-3197.	2.5	15
68	Software for a mass spectrometer-thermobalance system. Thermochimica Acta, 1986, 102, 115-124.	1.2	14
69	Empirical Models with Constant and Variable Activation Energy for Biomass Pyrolysis. Energy & Fuels, 2019, 33, 2348-2358.	2.5	14
70	Studies on the kinetics of the gibbsite + γ -alumina reaction. Thermochimica Acta, 1984, 76, 237-247.	1.2	13
71	Application of complex reaction kinetic models in thermal analysis. Journal of Theoretical Biology, 1996, 47, 535-542.	0.8	13
72	CO ₂ Gasification of Chars Prepared by Fast and Slow Pyrolysis from Wood and Forest Residue: A Kinetic Study. Energy & Fuels, 2018, 32, 588-597.	2.5	13

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73	The effects of imperfect temperature programming on the kinetic evaluation of thermoanalytical curves. Part 3. Error bounds for the activation energy and the formal reaction order. <i>Thermochimica Acta</i> , 1983, 65, 333-350.	1.2	12
74	The effects of heat and mass transport on the results of thermal decomposition studies. <i>Journal of Analytical and Applied Pyrolysis</i> , 1987, 11, 71-81.	2.6	12
75	Oxidation of Bismuth Tellurite, Bi ₂ TeO ₅ . <i>Journal of Solid State Chemistry</i> , 2001, 161, 365-372.	1.4	12
76	Kinetics of cellulose pyrolysis after a pressurized heat treatment. <i>Thermochimica Acta</i> , 2009, 496, 59-65.	1.2	12
77	Towards a meaningful non-isothermal kinetics for biomass materials and other complex organic samples. <i>Journal of Thermal Analysis and Calorimetry</i> , 2018, 133, 703-712.	2.0	12
78	The shape of the thermoanalytical curves at hyperbolic temperature programs. <i>Thermochimica Acta</i> , 1982, 57, 247-250.	1.2	11
79	Biomass Charcoal Properties Changes During Storage. <i>Energy Procedia</i> , 2017, 105, 830-835.	1.8	11
80	The effects of imperfect temperature programming on the kinetic evaluation of thermoanalytical curves. Part 1. A simple mathematical example. <i>Thermochimica Acta</i> , 1982, 59, 31-41.	1.2	9
81	Problems in the DSC and DTA study of the burning properties of fuels and other organic materials. <i>Thermochimica Acta</i> , 1986, 106, 191-199.	1.2	9
82	Influence of the sample mass and the presence of the reaction products on the thermoanalytical results. <i>Journal of Thermal Analysis</i> , 1988, 33, 87-95.	0.7	9
83	Reaction Kinetics of the Thermal Decomposition of Cellulose and Hemicellulose in Biomass Materials. , 1993, , 760-770.		9
84	DSC examination of alloys. <i>Thermochimica Acta</i> , 1979, 30, 311-317.	1.2	8
85	Investigation of subbituminous coals by thermogravimetry-mass spectrometry. <i>Thermochimica Acta</i> , 1990, 170, 179-188.	1.2	8
86	Non-isothermal kinetics: best-fitting empirical models instead of model-free methods. <i>Journal of Thermal Analysis and Calorimetry</i> , 2020, 142, 1043-1054.	2.0	8
87	Polycondensation kinetics. NMR study on the formation of furfuryl alcohol-formaldehyde resins. <i>Angewandte Makromolekulare Chemie</i> , 1976, 54, 31-48.	0.3	7
88	Kinetics of the oxidation of bismuth tellurite, Bi ₂ TeO ₅ . <i>Thermochimica Acta</i> , 2003, 399, 225-239.	1.2	7
89	Numerical differentiation of experimental data. <i>Information Processing Letters</i> , 1973, 2, 24-25.	0.4	6
90	Calculation of kinetic parameters and sequence distribution from pyrolysis gas chromatographic data of styrene-methyl acrylate copolymers. <i>European Polymer Journal</i> , 1978, 14, 625-630.	2.6	6

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91	A basic problem in mathematical modelling in pyrolysis: The number of the unknown parameters. Journal of Analytical and Applied Pyrolysis, 1980, 2, 1-6.	2.6	6
92	The effects of imperfect temperature programming on the kinetic evaluation of thermoanalytical curves. Part 2. Concave and convex curvatures on the actual temperature–time functions. Thermochimica Acta, 1982, 59, 43-49.	1.2	6
93	Thermal degradation and microstructure of vinyl copolymers. A mathematical model. European Polymer Journal, 1978, 14, 349-352.	2.6	5
94	Kinetic study of rapidly quenched Ni81P19 amorphous alloys. Thermochimica Acta, 2000, 351, 79-84.	1.2	5
95	Empirical Kinetic Models for the Combustion of Charcoals and Biomasses in the Kinetic Regime. Energy & Fuels, 2020, 34, 16302-16309.	2.5	5
96	Mathematical modelling of thermal decomposition processes. Journal of Theoretical Biology, 1977, 12, 179-185.	0.8	4
97	From “Sirups” to Biocarbons: A 30 Year Research Cooperation for Better Biomass Utilization with Michael J. Antal, Jr. Energy & Fuels, 2016, 30, 7887-7895.	2.5	4
98	Empirical Kinetic Models for the CO ₂ Gasification of Biomass Chars. Part 1. Gasification of Wood Chars and Forest Residue Chars. ACS Omega, 2021, 6, 27552-27560.	1.6	4
99	Use of histograms in computer-aided comparison of chromatograms. Journal of Chromatography A, 1985, 318, 247-253.	1.8	2
100	On the kinetic evaluation of the thermogravimetric curves. Thermochimica Acta, 1985, 92, 141-144.	1.2	2
101	In Honor of Michael J. Antal. Energy & Fuels, 2016, 30, 7809-7810.	2.5	0