

Professor James O.C. Ezeilo

James Ezeilo took his B.Sc. of London University in 1953 with First Class Hons and the M.Sc. (also of London University) in 1955, received his Ph.D. from University of Cambridge (Queens' College) in 1958.

Professor James Ezeilo, with Chike Obi and Adegoke Olubummo, was one of a trio of black mathematicians who pioneered modern mathematics research in Nigeria is sometimes called the "father of mathematics" in Nigeria. Dr. James Ezeilo's early research dealt mainly with the problem of stability, boundedness, and convergence of solutions of third order ordinary differential equations. Apart from extending known results and techniques to higher order equations, the main thrust of his work was the construction of Lyapunov-like functions, which he did elegantly and used to study the qualitative properties of solutions. In addition he was a pioneer in the use of Leray-Schauder degree type arguments to obtain existence results for periodic solutions of ordinary differential equations.

James Okoye Chukuka Ezeilo received the degrees of DSc honoris causa from the University of Maiduguri, 1989-11-, and the University of Nigeria, Nsukka, 1996-04-, and the degree of DTech honoris causa from the Federal University of Technology, Akure, 1995-11-

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He is an academic who one cannot categorically speak about without mentioning some of his works.

Selected 70 Research Works from Professor Ezilo are as Follows;

70. Ezeilo, J.O.C. Non-resonant oscillations for some third order differential equations II, J. Nigerian Math. Soc. 8 (1989), 25-48 (with J.O.C.)

69. Ezeilo, J. O. C.; Nkashama, M. N. Resonant and nonresonant oscillations for some third order nonlinear ordinary differential equations. Nonlinear Anal. 12 (1988), no. 10, 1029--1046.

68. Ezeilo, J. O. C.; Onyia, J. Nonresonant oscillations for some third-order differential equations. J. Nigerian Math. Soc. 3 (1984), 83--96 (1986).

67. Ezeilo, J. O. C. An application of a theorem of Gusefeldt in the proof of the existence of periodic solutions of a certain class of differential equations. J. Nigerian Math. Soc. 2 (1983), 79--89.

66. Ezeilo, J. O. C. Uniqueness theorems for periodic solutions of certain fourth and fifth order differential systems. *J. Nigerian Math. Soc.* 2 (1983), 55--59.
65. Ezeilo, J. O. C. Some properties of the differential equation $f(u) = d^p u / dt^p$ of arbitrary order $p \geq 1$. *Qualitative theory of differential equations*, Vol. I, II (Szeged, 1979), pp. 231--241, *Colloq. Math. Soc. János Bolyai*, 30, North-Holland, Amsterdam-New York, 1981.
64. Ezeilo, J. O. C. Periodic solutions of certain sixth order differential equations. *J. Nigerian Math. Soc.* 1 (1982), 1--9.
63. Ezeilo, J. O. C. A Leray-Schauder technique for the investigation of periodic solutions of the equation $\ddot{x} + x + \mu x^2 = \varepsilon \cos \omega t$ ($\varepsilon \neq 0$). *Acta Math. Acad. Sci. Hungar.* 39 (1982), no. 1-3, 59--63.
62. Ezeilo, J. O. C. Existence of periodic solutions of a certain system of fifth-order differential equations. *Ninth international conference on nonlinear oscillations*, Vol. 1 (Kiev, 1981), 420--422, 454, "Naukova Dumka", Kiev, 1984. 34C25
61. Ezeilo, James O. C. On the existence of periodic solutions of certain third order nondissipative differential systems. *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 66 (1979), no. 2, 126--135. 34C25
60. Ezeilo, James O. C. Extension of certain instability theorems for some fourth and fifth order differential equations. *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 66 (1979), no. 4, 239--242. 34D05 (34A30)
59. Ezeilo, James O. C. A further result on the existence of periodic solutions of the equation $\dot{x} + \psi(\dot{x}) \ddot{x} + \varphi(x) \dot{x} + \theta(t, x, \dot{x}, \ddot{x}) = p(t)$ with a bounded θ . *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 65 (1978), no. 1-2, 51--57 (1979). 34C25
58. Ezeilo, James O. C. Periodic solutions of certain third order differential equations of the nondissipative type. *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 63 (1977), no. 3-4, 212--224 (1978).
57. Ezeilo, James O. C. Periodic solutions of a certain fourth order differential equation. *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 63 (1977), no. 3-4, 204--211 (1978).
56. Ezeilo, J. O. C. An instability theorem for a certain sixth order differential equation. *J. Austral. Math. Soc. Ser. A* 32 (1982), no. 1, 129--133.
55. Ezeilo, James O. C.; Tadjumola, Haroon O. Periodic solutions of a certain fourth order differential equation. *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 66 (1979), no. 5, 344--350.

54. Ezeilo, James O. C. Further results on the existence of periodic solutions of a certain third order differential equation . *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 63 (1977), no. 6, 493--503 (1978).
53. Ezeilo, James O. C. Further results on the existence of periodic solutions of a certain third-order differential equation. *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 64 (1978), no. 1, 48--58.
52. Ezeilo, J. O. C. A further instability theorem for a certain fifth-order differential equation. *Math. Proc. Cambridge Philos. Soc.* 86 (1979), no. 3, 491--493.
51. Ezeilo, J. O. C. Instability theorems for certain fifth-order differential equations . *Math. Proc. Cambridge Philos. Soc.* 84 (1978), no. 2, 343--350.
50. Ezeilo, J. O. C. An instability theorem for a certain fourth order differential equation . *Bull. London Math. Soc.* 10 (1978), no. 2, 184--185.
49. Ezeilo, J. O. C.; Tejumola, H. O. Periodic solutions of certain fifth order differential equations . *Nonlinear vibration problems, No. 15 (Proc. Sixth Internat. Conf. Nonlinear Oscillations, Poznań, 1972, Part II)*, pp. 75--84. PWN---Polish Sci. Publ., Warsaw, 1974. 34C25
48. Ezeilo, J. O. C. New properties of the equation $x''+ax+bx+h(x)=p(t,x,x)$ for certain special values of the incrementary ratio $\frac{h(x+y)-h(x)}{y}$. *Équations différentielles et fonctionnelles non linéaires (Actes Conférence Internat. "Equa-Diff 73", Brussels/Louvain-la-Neuve, 1973)*, pp. 447--462. Hermann, Paris, 1973.
47. Ezeilo, J. O. C.; Tejumola, H. O. On the boundedness and the stability properties of solutions of certain fourth order differential equations . *Ann. Mat. Pura Appl.* (4) 95 (1973), 131--145.
46. Ezeilo, James O. C.; Tejumola, Haroon O. Further remarks on the existence of periodic solutions of certain fifth order non-linear differential equations . *Atti. Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 58 (1975), no. 3, 323--327.
45. Ezeilo, James O. C.; Tejumola, Haroon O. Further results for a system of third order differential equations. *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 58 (1975), no. 2, 143--151.
44. Ezeilo, J. O. C. Periodic solutions of certain third order differential equations . *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 57 (1974), no. 1-2, 54--60 (1975).
43. Ezeilo, James O. C. Some new criteria for the existence of periodic solutions of a certain second order differential equation . *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 56 (1974), no. 5, 675--683.

42. Ezeilo, James O. C.; Tejumola, H. O. Boundedness theorems for certain third order differential equations . *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 55 (1973), 194--201 (1974).
41. Ezeilo, J. O. C. A further result on the existence of periodic solutions of the equation $\ddot{x} + a\dot{x} + b\dot{x} + h(x) = p(t, x, \dot{x}, \ddot{x})$. *Math. Proc. Cambridge Philos. Soc.* 77 (1975), 547--551.
40. Ezeilo, James Okoye Chukuka Periodic solutions of a certain third order differential equation. *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 54 (1973), 34--41.
39. Ezeilo, J. O. C. A generalization of some boundedness results by Reissig and Tejumola . *J. Math. Anal. Appl.* 41 (1973), 411--419.
38. Ezeilo, J. O. C. A boundedness theorem for a certain n th order differential equation . *Ann. Mat. Pura Appl.* (4) 88 (1971), 135--142.
37. Ezeilo, J. O. C. A boundedness theorem for a certain fourth order differential equation . *J. London Math. Soc.* (2) 5 (1972), 376--384.
36. Ezeilo, J. O. C.; Tejumola, H. O. Boundedness theorems for some fourth order differential equations . *Ann. Mat. Pura Appl.* (4) 89 (1971), 259--275.
35. Ezeilo, J. O. C.; Tejumola, H. O. A boundedness theorem for a certain fourth order differential equation . *Ann. Mat. Pura Appl.* (4) 88 (1971), 207--216.
34. Ezeilo, James Okoye Chukuka A generalization of a boundedness theorem for the equation $\ddot{x} + \alpha \dot{x} + \phi \dot{x} + \psi(x) = \psi(t, x, \dot{x}, \ddot{x})$. *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 50 (1971), 424--431.
33. Ezeilo, J. O. C. A generalization of a theorem of Reissig for a certain third order differential equation . *Ann. Mat. Pura Appl.* (4) 87 (1970), 349--356.
32. Ezeilo, J. O. C. On the boundedness of the solutions of the equation $\ddot{x} + a\dot{x} + f(x)\dot{x} + g(x) = p(t)$. *Ann. Mat. Pura Appl.* (4) 80 1968 281--299.
31. Ezeilo, J. O. C. On the stability of the solutions of some third order differential equations . *J. London Math. Soc.* 43 1968 161--167.
30. Ezeilo, J. O. C. A generalization of a boundedness theorem for a certain third-order differential equation . *Proc. Cambridge Philos. Soc.* 63 1967 735--742.
29. Ezeilo, J. O. C. n -dimensional extensions of boundedness and stability theorems for some third order differential equations . *J. Math. Anal. Appl.* 18 1967 395--416.

28. Ezeilo, J. O. C. On the stability of solutions of certain systems of ordinary differential equations . Ann. Mat. Pura Appl. (4) 73 1966 17--26.
27. Ezeilo, J. O. C.; Tejumola, H. O. Boundedness and periodicity of solutions of a certain system of third-order non-linear differential equations . Ann. Mat. Pura Appl. (4) 74 1966 283--316.
26. Ezeilo, J. O. C. Corrigendum: A boundedness theorem for a certain third-order differential equation . Proc. London Math. Soc. (3) 17 1967 382--384.
25. Ezeilo, J. O. C. A generalization of a result of Demidovi\c on the existence of a limiting regime of a system of differential equations . Portugal. Math. 24 1965 65--82.
24. Ezeilo, J. O. C. Erratum: On the existence of almost periodic solutions of some dissipative second order differential equations . Ann. Mat. Pura Appl. (4) 74 1966 399.
23. Ezeilo, J. O. C. A note on the convergence of solutions of certain second order differential equations . Portugal. Math. 24 1965 49--58.
22. Ezeilo, J. O. C. A stability result for a certain third order differential equation . Ann. Mat. Pura Appl. (4) 72 1966 1--9.
21. Ezeilo, J. O. C. On the convergence of solutions of certain systems of second order differential equations . Ann. Mat. Pura Appl. (4) 72 1966 239--252.
20. Ezeilo, J. O. C. Some boundedness results for a fourth order nonlinear differential equation . 1964 Nonlinear Vibration Problems, 5, Second Conf. on Nonlinear Vibrations, Warsaw, 1962 pp. 252--257 Pa\`nstwowe Wydawnictwo Naukowe, Warsaw
19. Ezeilo, J. O. C. An estimate for the solutions of a certain system of differential equations . Nigerian J. Sci. 1 1966 5--10.
18. Ezeilo, J. O. C. A stability result for the solutions of certain third order differential equations . J. London Math. Soc. 37 1962 405--409.
17. Ezeilo, J. O. C. Stability results for the solutions of some third and fourth order differential equations . Ann. Mat. Pura Appl. (4) 66 1964 233--249.
16. Ezeilo, J. O. C. On the existence of an almost periodic solution of a non-linear system of differential equations . Contributions to Differential Equations 3 1964 337--349.
15. Ezeilo, J. O. C. On the existence of almost periodic solutions of some dissipative second order differential equations . Ann. Mat. Pura Appl. (4) 65 1964 389--405.
14. Ezeilo, J. O. C. A boundedness theorem for some non-linear differential equations of the third order. J. London Math. Soc. 37 1962 469--474.

13. Ezeilo, J. O. C. An extension of a property of the phase space trajectories of a third order differential equation. *Ann. Mat. Pura Appl.* (4) 63 1963 387--397.
12. Ezeilo, J. O. C. An elementary proof of a boundedness theorem for a certain third order differential equation. *J. London Math. Soc.* 38 1963 11—16.
11. Ezeilo, J. O. C. A boundedness theorem for a differential equation of the third order. 1963 *Qualitative methods in the theory of non-linear vibrations (Proc. Internat. Sympos. Non-linear Vibrations, Vol. II, 1961)* pp. 513--538 Izdat. Akad. Nauk Ukrain. SSR, Kiev
10. Ezeilo, J. O. C. Some results for the solutions of a certain system of differential equations. *J. Math. Anal. Appl.* 6 1963 387--393.
9. Ezeilo, J. O. C. Further results for the solutions of a third-order differential equation. *Proc. Cambridge Philos. Soc.* 59 1963 111--116.
8. Ezeilo, J. O. C. On the boundedness and the stability of solutions of some differential equations of the fourth order. *J. Math. Anal. Appl.* 5 1962 136--146.
7. Ezeilo, J. O. C. A boundedness theorem for a certain third-order differential equation. *Proc. London Math. Soc.* (3) 13 1963 99--124.
6. Ezeilo, J. O. C. A property of the phase-space trajectories of a third-order non-linear differential equation. *J. London Math. Soc.* 37 1962 33--41.
5. Ezeilo, J. O. C. A stability result for solutions of a certain fourth order differential equation. *J. London Math. Soc.* 37 1962 28--32.
4. Ezeilo, J. O. C. A note on a boundedness theorem for some third order differential equations. *J. London Math. Soc.* 36 1961 439--444.
3. Ezeilo, J. O. C. On the existence of periodic solutions of a certain third-order differential equation. *Proc. Cambridge Philos. Soc.* 56 1960 381--389.
2. Ezeilo, J. O. C. On the stability of solutions of certain differential equations of the third order. *Quart. J. Math. Oxford Ser.* (2) 11 1960 64--69.
1. Ezeilo, J. O. C. On the boundedness of solutions of a certain differential equation of the third order. *Proc. London Math. Soc.* (3) 9 (1959) 74--114.