

List of Publications

1. Papers in Journal

(a) Published

- (1) A.K.Mallik and A.Ghosh (1968) - Improvement of dynamic rigidity of structural members with introduced stress concentration, *Journal of Technology*, **13**, pp. 19-26.
- (2) A.K.Mallik and A.Ghosh (1970) - Improvement of damping characteristics with introduced stress concentration, *Indian Journal of Technology*, **8**, pp. 113-119.
- (3) A.K.Mallik and A.Ghosh (1973) - Improvement of damping characteristics of structural members with high-damping elastic inserts, *Journal of Sound and Vibration*, **27**, pp. 25-36.
- (4) A.K.Mallik and A.Ghosh (1974) - Damping characteristics of composite and porous materials, *Journal of Composite Materials* **8**, pp. 207-211.
- (5) D.J.Mead and A.K.Mallik (1976) - Material damping under random excitation, *Journal of Sound and Vibration*, **45**, pp. 487-494.
- (6) D.J.Mead and A.K.Mallik (1976) - An approximate method of predicting the response of periodically supported beams subjected to random convected loading, *Journal of Sound and Vibration*, **47**, pp. 457-471.
- (7) A.K.Mallik and D.J.Mead (1977) - Free vibration of thin circular rings on periodic radial supports, *Journal of Sound and Vibration*, **54**, pp. 13-27.
- (8) K.Singh and A.K.Mallik (1977) - Wave propagation and vibration response of a periodically supported pipe conveying fluid, *Journal of Sound and Vibration*, **54**, pp. 55-56.
- (9) U.N.Rao and A.K.Mallik (1977) - Response of finite periodic beams to convected loading - an approximate method, *Journal of Sound and Vibration*, **55**, pp. 395-403.
- (10) D.J.Mead and A.K.Mallik (1978) - An approximate theory for the sound radiated from a periodic line supported plate, *Journal of Sound and Vibration*, **61**, pp. 315-326.

- (11) K.Singh and A.K.Mallik (1978) - Use of dynamic absorbers to control parametric instabilities of a pipe, *Journal of Applied Mechanics, Trans. ASME*, **45**, pp. 949-951.
- (12) K.Singh and A.K.Mallik (1978) - Natural frequencies of beam-type periodic structures on equispaced identical supports, *Journal of Technology*, **23**, pp. 1-13.
- (13) K.Singh and A.K.Mallik (1979) - Parametric instabilities of a periodically supported pipe conveying fluid, *Journal of Sound and Vibration*, **62**, pp. 379-397.
- (14) N.Sridharan and A.K.Mallik (1979) - Numerical analysis of beams subjected to moving loads, *Journal of Sound and Vibration*, **65**, pp. 147-150.
- (15) R.Rahmatullah and A.K.Mallik (1979) - Damping of cantilever strips with inserts, *Journal of Sound and Vibration*, **66**, pp. 109-117.
- (16) S.Narayanan, J.P.Verma and A.K.Mallik (1981) - Free vibration of thin-walled open section beams with unconstrained damping treatment, *Journal of Applied Mechanics, Trans. ASME*, **48**, pp. 169-173.
- (17) S.Narayanan and A.K.Mallik (1981) - Free vibration of thin-walled open section beams with constrained damping treatment, *Journal of Sound and Vibration*, **74**, pp. 429-439.
- (18) H.Hatwal, A.K.Mallik and A.Ghosh (1982) - Nonlinear vibrations of a harmonically excited autoparametric system, *Journal of Sound and Vibration*, **81**, pp. 153-164.
- (19) R.Chandra, A.K.Mallik and R.Prabhakaran (1982) - Damping as a measure of damage in composites, *Journal of ASCE*, **100**, pp. 106-111.
- (20) E.S.Reddy and A.K.Mallik (1982) - Vibration of a two-layered ring on periodic radial supports, *Journal of Sound and vibration*, **84**, pp. 417-430.
- (21) S.K.Patnaik and A.K.Mallik (1982) - Natural frequencies of a shaft with periodically placed rotors and bearings, *Journal of Sound and Vibration*, **85**, pp. 415-422.
- (22) H.Hatwal, A.K.Mallik and A.Ghosh (1983) - Forced nonlinear oscillations of an autoparametric system - Part I : Periodic responses, *Journal of Applied Mechanics, Trans. ASME*, **50**, pp. 657-662.

- (23) H.Hatwal, A.K.Mallik and A.Ghosh (1983) - Forced nonlinear oscillations of an autoparametric system - Part II: Chaotic responses, *Journal of Applied Mechanics, Trans. ASME*, **50**, pp. 663-668.
- (24) E.S.Reddy and A.K.Mallik (1984) Vibration of a three layered ring on periodic radial supports, *AIAA Journal*, **22**, pp. 543-551.
- (25) A.K.Mallik, S.B.Kulkarni and K.S.Ram (1984) - Parametric instability of a periodically supported pipe without and with vibration absorbers, *Journal of Applied Mechanics, Trans. ASME*, **51**, pp. 159-163.
- (26) E.S.Reddy and A.K.Mallik (1985) - Response of and sound radiation from a layered cylinder with regular axial stiffeners, *Journal of Sound and Vibration*, **103**, pp. 519-531.
- (27) G.B.Chatterjee and A.K.Mallik (1987) - Mechanical error of a four-bar linkage coupler curve, *International Journal of Mechanism and Machine Theory*, **22**, pp. 85-88.
- (28) A.K.Mallik and S.G.Dhande (1987) - Analysis and synthesis of mechanical error in path-generating linkages using a stochastic approach, *International Journal of Mechanisms and Machine Theory*, **22**, pp. 115-123.
- (29) A.K.Mallik and G.V.R.Murty (1988) - Free out-of-plane vibration of circular rings on identical equi-spaced supports. *Journal of Sound and Vibration*, **122**, pp. 433-439.
- (30) B.Ravindra and A.K.Mallik (1992) - Harmonic vibration isolation characteristics of periodic systems, *Journal of Sound and vibration*, **154**, pp. 249-259.
- (31) B.Ravindra and A.K.Mallik (1993) - Hard Duffing type vibration isolator with combined Coulomb and viscous damping, *International Journal of Non-linear Mechanics*, **28**, pp. 427-440.
- (32) A.K.Mallik (1993) - Material damping in vibration and noise control, *Journal of Acoustical society of India*, **21**, pp. 25-33.
- (33) B.Ravindra and A.K.Mallik (1994) - Performance of nonlinear vibration isolators under harmonic excitation, *Journal of Sound and Vibration*, **170**, pp. 325-337.

- (34) N.Chandra Shekhar and A.K.Mallik (1994) - Instability due to simultaneous time-variation in damping and spring constants, *Journal of Sound and Vibration*, **171**, pp. 411-419.
- (35) B.Ravindra and A.K.Mallik(1994) - Stability analysis of the harmonic solution of a non-linearly damped Duffing oscillator, *Journal of Sound and Vibration*, **171**, pp. 708-716.
- (36) B.Ravindra and A.K.Mallik (1994) - Role of nonlinear dissipation in soft Duffing oscillators, *Physical Review (E)*, **49**, pp. 4950-4954.
- (37) A.K.Mallik (1994) - Mobility and type identification of four-link mechanisms, *Journal of Mechanical Design, Trans. ASME*, **116**, pp. 629-633.
- (38) B.Ravindra and A.K.Mallik (1995) - Chaotic response of a harmonically excited mass on isolator with nonlinear stiffness and damping characteristics, *Journal of Sound and Vibration*, **182**, pp. 345-353.
- (39) S.Chatterjee, A.K.Mallik and A.Ghosh (1995) - On impact dampers for non-linear vibrating systems, *Journal of Sound and Vibration*, **187**, pp. 403-420.
- (40) S.Chatterjee, A.K.Mallik and A.Ghosh (1996) - Periodic response of piece-wise non-linear oscillators under harmonic excitation, *Journal of Sound and Vibration*, **191**, pp. 129-144.
- (41) S.Chatterjee and A.K.Mallik (1996) - Bifurcation and chaos in autonomous self-excited oscillators with impact damping, *Journal of Sound and Vibration*, **191**, pp. 539-562.
- (42) S.Chatterjee, A.K.Mallik and A.Ghosh (1996) - Impact dampers for controlling self-excited oscillations, *Journal of Sound and Vibration*, **193**, pp. 1003-1014.
- (43) S.Chatterjee and A.K.Mallik (1996) - Three kinds of intermittency in a non-linear mechanical system, *Physical Review (E)*, **53**, pp. 4362-4367.
- (44) K.Ramesh, D.P.S. Chouhan and A.K.Mallik (1997) - Free vibration of an annular plate with periodic radial cracks, *Journal of Sound and Vibration*, **206**, pp. 266-274.
- (45) S.Bhattacharya, A.Ghosh and A.K.Mallik (1997) - Cathode shape prediction in electrochemical machining using a simulated cut-and-try method, *Journal of Materials Processing Technology*, **66**, pp. 146-152.

- (46) G.Chakraborty, A.K.Mallik and H.Hatwal (1998) - Normal modes and near-resonance response of beams with non-linear effects, *Journal of Sound and Vibration*, **210**, pp. 19-36.
- (47) B.Ravindra and A.K.Mallik (1998) - Dissipative control of chaos in nonlinear vibrating systems, *Journal of Sound and Vibration*, **211**, pp. 709-715.
- (48) N.Chandra Shekhar, H.Hatwal and A.K.Mallik (1998) - Response of nonlinear dissipative shock isolators, *Journal of Sound and Vibration*, **214**, pp. 589-603.
- (49) G.Chakraborty and A.K.Mallik –(1998) Parametrically excited non-linear travelling beams with and without external forcing, *Nonlinear Dynamics*, **17**, pp. 301-324.
- (50) A.K.Mallik, V.Kher, M.Puri and H.Hatwal (1999)- On the modelling of non- linear elastomeric vibration isolators, *Journal of Sound and vibration*, **219**, pp. 239-253.
- (51) I.Tandon, A.K.Mallik and P.Gupta Bhaya (1999)- Performance characteristics of a vibration isolator with electro-rheological fluids, *Journal of Sound and Vibration*, **219**,pp. 395-404.
- (52) G.Pohit, A.K.Mallik and C.Venkatesan (1999)- Free out-of-plane vibrations of a rotating beam with non-linear elastomeric constraints, *Journal of Sound and Vibration*, **220**, pp. 1-25.
- (53) G.Chakraborty, A.K.Mallik and H.Hatwal (1999) - Non-linear vibration of a travelling beam, *International Journal of Non - Linear Mechanics*, **34**, pp. 655-670.
- (54) N. Chandra Shekhar, H. Hatwal and A.K. Mallik (1999) Performance of nonlinear isolators and absorbers to shock excitations, *Journal of Sound and Vibration*, **227**, pp. 293-307.
- (55) G. Chakraborty and A.K. Mallik (1999) - Stability of an accelerating beam, *Journal of Sound and Vibration*, **227**, pp. 308-320.
- (56) G. Chakraborty and A.K. Mallik (1999) - Non-linear vibration of a travelling beam having an intermediate guide, *Nonlinear Dynamics*, **20**, pp. 247-265.
- (57) B. Ravindra, P. Hagedorn and A.K. Mallik (1999) - Sweep tests on vibrating systems with power-law damping, *Non-linear Dynamics*, **20**, pp. 297-308.
- (58) G. Chakraborty and A..K. Mallik (2000) – Wave prpagation in and vibration of a traveling beam with and without non-linear effects. Part I: Free Vibration, *Journal of Sound and Vibration*, **236**, pp. 277-290.

- (59) G. Chakraborty and A.K. Mallik (2000) – Wave propagation in and vibration of a travelling beam with and without non-linear effects, Part II: Forced vibration, *Journal of Sound and Vibration*, **236**, pp. 291-305.
- (60) G. Shukla and A.K. Mallik (2000) - Detection of a crank in six-link planar mechanisms. *Int. J. Mech. and Mach. Theory*, **35** (7), pp. 911-926.
- (61) A.K. Mallik and G. Chakraborty (2000) – Wave approach for non-linear vibration of axially moving continua - Invited paper in *Nonlinear Phenomena*, Ed.: S.K. Malik, M. K. Chandrashekar and N. Pradhan (INSA), pp. 905-930.
- (62) G. Pohit, C. Venkatesan and A.K. Mallik (2000) - Elastomeric damper model and limit cycle oscillation in a bearingless helicopter rotor blade - *Journal of Aircraft*, (AIAA), **37**, pp 923-926.
- (63) G. Chakraborty and A.K. Mallik (2001) – Dynamics of a weakly nonlinear periodic chain. – *Int. J. of Nonlinear Mechanics*, **36**, pp. 375-389.
- (64) S. Sen, B. Dasgupta and A.K. Mallik (2003) – Variational approach for singularity-free path- planning of parallel manipulators. – *Mechanism and Machine Theory* **38**, pp. 1165-1183.
- (65) A.K. Mallik – From natural numbers to numbers and curves in nature – *Resonance* Part – I, Sept. (2004), pp. 29 – 37, Part – II, Oct. (2004), pp. 34 – 40.
- (66) G. Pohit, C. Venkatesan and A.K. Mallik (2004) – Influence of nonlinear elastomer on isolated lag dynamics and rotor/fuselage aeromechanical stability – *Journal of Aircraft*, (AIAA.), **41**, pp. 1449 – 1464.
- (67) A.K. Mallik, S. Chandra and A.K. Singh (2006) – Steady-state response of an infinite beam on elastic foundation subjected to a moving load – *Journal of Sound and Vibration*, **291**, pp. 1148 – 1169.
- (68) J. Das and A. K. Mallik (2006) – Control of friction driven oscillation by time-delayed state feedback – *Journal of Sound and Vibration*, **297**, pp. 578 –594.

(b) Accepted for Publication

1. N. S. Patil and A.K. Mallik – Experimental investigation of the response of a harmonically excited hard Duffing oscillator. *Pramana*
2. A.K. Mallik – Curious consequences of simple sequences. *Resonance*

(c) Sent for Publication

1. P. Mukherjee, B. Dasgupta and A.K. Mallik – Generalized dynamic equations of 6-UPS Stewart Platform and dynamic stability indices of manipulators.
2. P. B. Zinjade and A. K. Mallik – Impact dampers for controlling friction-driven oscillations.

2. Papers in Conference Proceedings and Invited lectures:

- (1) A.K.Mallik and A.Ghosh (1973) - Improvement of damping capacity of structural members by introduced stress concentration, ASME Paper No. 73 - DET - 76.
- (2) A.K.Mallik and A.Ghosh (1974) - Fatigue strength of structural members with high-damping elastic inserts, Proc. of First ASME Design Technology Transfer Conference, Washington, pp. 449-455.
- (3) A.K.Mallik and S.Narayanan (1980) - Control of parametric instabilities of a periodically supported pipe with dynamic absorbers - Proc. of the International Conference On Recent Advances in Structural Dynamics, Southampton, pp. 661-676.
- (4) A.Ghosh and A.K.Mallik (1980) - Mechanics of stamping and blanking operations - Proc. of Ninth AIMTDR Conference, Kanpur.
- (5) A.Bagchi, H.Hatwal and A.K.Mallik (1989) - A computational geometric approach for determining redundant manipulator configuration in a plane with circular obstacles, Proc. of SME World Conference. On Robotics Research, Maryland, pp. 4.39-4.50.
- (6) A.Bagchi, H.Hatwal and A.K.Mallik (1989) - Collision free configurations for planar manipulators with redundancy, Twelfth IASTED International Symposium on Robotics and Manufacturing, California.
- (7) A.K.Mallik and A.Ghosh (1990) - Visual aid in teaching kinematics, NACOMM - 90, Roorkee.
- (8) K.P.Ravindran, H.Hatwal and A.K.Mallik (1991) - Analysis and synthesis of task space errors by using modified Powell's method - Proc. of International Symposium on Intelligent Robotics, Bangalore, pp. 532-543.
- (9) M.Hussain, A.K.Mallik and A.Ghosh (1992) - Design improvement of manipulators by minimizing shaking force/moment and driving torques, Twenty second ASME Mechanisms Conference, Arizona.
- (10) A.K. Mallik (1995) – Nonlinear aspects of vibration control – Golden Jubilee Lecture at Mech. Engg. Dept., IISc, Bangalore.

- (11) M.Hegde, S.Mukherjee and A.K.Mallik (1996) - Workspace Issues in design of a Stewart Platform. Proc. of Seventh NACOMM Conference, Durgapur, pp.B.69-75.
- (12) S.N.Shome, J.Basu and A.K.Mallik (1996) - Analysis of spline manipulator, Proc of Seventh NACOMM Conference, Durgapur, pp. B.132-138.
- (13) A.K.Mallik and S.Chatterjee (1996) - Impact dampers for non-linear and self excited oscillators, Proc. of INDUSVAN, IIT Delhi, pp. 257-266.
- (14) G. Pohit, C. Venkatesan and A.K. Mallik (1998) – Dynamics of an idealised bearingless helicopter rotor blade with non-linear elastomer, Proc. of Eighth NASAS on Nonlinear Mechanics, IIT Madras, 9-10 Oct., pp. 151-158.
- (15) G. Pohit, C. Venkatesan and A.K. Mallik (2000) – Influence of nonlinear elastomer on isolated lag dynamics and rotor/fuselage aeromechanical instability, 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Material Conference, Atlanta, USA, 3-6 April, paper No. 2000-1691.
- (16) A.K. Mallik (2000) - Dynamics of linear and nonlinear periodic systems – Plenary lecture in Vetomac I, October 25-27, IISc, Bangalore.
- (17) A.K. Mallik (2000) – A series of 4 invited lectures on Chaos in mechanical vibratory systems – IIT Kharagpur
- (18) A.K. Mallik (2000) – Nonlinear vibration of a beam axially moving over simple supports. – ICRAMS2000, December 20-22, Kharagpur.
- (19) A.K. Mallik (2000) – Angle trisection and generation of straight lines by static and moving geometry - Lecture delivered in CYLPS programme of CSIR at CMERI, Durgapur.
- (20) A.K. Mallik (2001) – Modelling of nonlinear vibration isolators, Invited paper presented in India-USA Symposium on Emerging Trends in Vibration and Noise Engineering at Ohio, USA, December 10-12.
- (21) A.K. Mallik (2001) – Evolution of Theory of Machines – From steam engine to mechatronics – Keynote Address in NaCOMM, 2001 at IIT Kharagpur, December 21-22.
- (22) G. Pohit, C. Venkatesan and A.K. Mallik (2001) – Dynamic response of a bearingless helicopter rotor blade with a nonlinear elastomeric damper - Paper No. 64. Proc. of second ICTACEM, at IIT Kharagpur Dec. 27-30.

- (23) A.K. Mallik (2002) Chaired a session in the conference on Stochastic Nonlinear Dynamics held at University of Urbana-Champaign (Illinois).
- (24) A.K. Mallik (2003) – Some observations on the trends of research in kinematics during the three decades (1972 – 2001) – Keynote Address in The National Symposium on Mechanisms and Design, Indian Institute of Science, Bangalore, July, 25.
- (25) S.Sen, B. Dasgupta and A.K. Mallik (2004) – Comparison of feedback control strategies for parallel manipulators - ASME Conference.
- (26) A.K. Mallik (2004) – Uncommon, unsolved and unsolvable problems in Euclidean geometry – General Lecture delivered in Techkriti at IIT Kanpur.
- (27) A.K. Mallik (2004) – From natural numbers to numbers and curves in nature – M.N. Saha Memorial lecture at IACS (Kolkata) Dec. 13, 2004.
- (28) A.K. Mallik (2005) – Response of a hard, Duffing oscillator to harmonic excitation – an overview, Invited lecture in NCNSD, Aligarh, Feb. 24-26.
- (29) A.K. Mallik (2005) – Stability problems in applied mechanics – an invited lecture at Mech. Engg. Dept. Jadavpur University, Kolkata.
- (30) A.K. Mallik (2006) – Curious consequences of simple sequences – an invited lecture in CYLPS programme of CSIR at CMERI, Durgapur, and in the summer programme in Civil Engg. Dept. at IIT Kanpur.
- (31) A.K. Mallik (2006) – Delivered 4 lectures on chaotic dynamics and two popular lectures in Indian Academy of Science sponsored summer school held at IIIT, Hyderabad.
- (32) A.K. Mallik (2006) - From natural numbers to numbers and curves in nature, lecture delivered at Physics Dept. IIT Kanpur in the Horizon series.

3. List of Books:

(a) Chapter contributed to books

- (1) A.K.Mallik and B.Ravindra - Nonlinear Mechanical Vibrations pp. 71-126 in the book “Modelling of Complex Systems “, - Ed. J.K.Bhattacharjee and A.K.Mallik, Narosa Publishing House, New Delhi/London (1997).
- (2) A.K. Mallik – Passion is the key. pp. 85 – 89 in the book “Secrets of Good Teaching” Ed. V. Kirpal, ICFAI University Press, Hyderabad, (2006)

(b) Books - authored or edited

- (1) A.Ghosh and A.K.Mallik - Theory of Mechanisms and Machines, Affiliated East-West Press (P) Ltd., New Delhi (1976), pp. 476. Revised Second Edition (1988), pp. 586. Reprinted 1990, 1992, 1994, 1995. Revised Third Edition (1998) pp. 634. Reprinted in 1999, 2001, 2002, 2004, 2005.
- (2) A.Ghosh and A.K.Mallik - Manufacturing Science, Affiliated East-West Press (P) Ltd., New Delhi (1985), Ellis - Horwood Pvt. Ltd., Chichester, England and John Wiley & Sons (1986), pp. 433. Reprinted 1988, 1990, 1991, 1992, 1993, 1994, 1996, 1998, 2000, 2002, 2004.
- (3) A.K.Mallik - Principles of Vibration Control, Affiliated East - West Press (P) Ltd., New Delhi (1990), pp. 220.
- (4) A.K.Mallik, A.Ghosh and G.Dittrich - Kinematic Analysis and Synthesis of Mechanisms, CRC Press Inc. Boca Raton, U.S.A (1994), pp. 668.
- (5) J.K.Bhattacharjee and A.K.Mallik (Editors) - Modelling of Complex Systems, Narosa Publishing House, London/New Delhi, (1997), pp. 439.
- (6) A.K. Mallik and J. K. Bhattacharjee – Stability Problems in Applied Mechanics, Narosa Publishing House, /New Delhi, Alpha Science International Ltd. Oxford, U.K (2005) pp. 126.