

LIST OF PEER REVIEWED PUBLICATIONS

INDRANIL MANNA

(As on June 30, 2012)

Dissertations

1. **Mechanism and Kinetics of Discontinuous Transformations**
Premchand Roychand Scholarship (P.R.S.) thesis (1998), Calcutta University
Supervisor: Self
2. **Some Aspects of Discontinuous Transformations in Pb-Sn and Cu-Ag Alloys**
Doctoral (Ph.D.) Thesis (1990), I.I.T., Kharagpur
Supervisor: Prof. S. K. Pabi
3. **Development of Cube Texture and Recrystallisation Behaviour Study in Cu Bearing soft Magnetic Ni-Fe Alloys**
Master's (M. Tech.) Thesis (1984), I.I.T., Kanpur
Supervisors: Prof. K. P. Gupta and Prof. R. K. Ray
4. **Effect of Thermal Cycling on Fe-Ni-Mn Maraging Steels**
Bachelor's (B.E.) Thesis (1983), University of Calcutta, B.E. College
Supervisors: Late P. P. Das and Prof. S. N. Basu

Book/Journal Edited

1. J Dutta Majumdar, **I. Manna**
Laser-Assisted Fabrication of Materials
Hardback Book, Publisher: Springer-Verlag Berlin and Heidelberg GmbH & Co. KG
ISBN-13: 9783642283581
2. J Dutta Majumdar, S Pityana, V S Raja, Y Zhang, R Sing, **I. Manna** (Guest Editors)
Corrosion of Alloys Developed by Non-equilibrium Processing (Special Issue) under
International Journal of Corrosion (Hindwai Publishing Corporation Ltd.) 2012
3. J Dutta Majumdar, S. Sun, I. Smurov, **I. Manna** (Guest Editors)
A special issue on "Advances in Metallic Materials Processing" under the Advanced
Materials Science and Engineering series (Hinwai Publishing Corporation Ltd.) 2011
4. **I. Manna**, Guest Editor
SURFACE ENGINEERING OF STEEL – Two special issues of STEEL TECH, a quarterly
journal on Steel Technology, Editor: Dr Amit Chatterjee (August and October 2008).
5. **I. Manna**, Guest Editor
NANO SCIENCE AND TECHNOLOGY – A special issue of the Transactions of the
Indian Institute of Metals, vol. 58 (6) (2005) pp. 939-1227 (27 articles, 288 pages).

Patents

1. **A Process for Surface Hardening of Low-Carbon Steel by Using High Powder Diode Laser Beam Adaptable to Automotive Components**
An application for an Indian patent (825/Kol/2010) filed on 10 July 2010, in collaboration with Tata Steel and ARCI Hyderabad, under review.
I. Manna, B. Syed, A. Haldar, G Padmanabhan
2. **A Device for measuring the Thermal Conductivity of a fluid with dispersion of ultra-fine solid particles**
An application for an Indian patent (390/Kol/2005) filed in February 2005, under review.
I. Manna, P. K. Das and M. Chopkar
3. **Development of Nano-intermetallic Dispersed Al-matrix Composites from the Al-Cu-X Ternary Metastable Precursors**
Indian patent granted on January 20, 2006 (Application No. 355/Cal/2000 filed in Kolkata, June 2000).
I. Manna, P. P. Chattopadhyay and S. K. Pabi

Book Chapters Authored

1. J. Dutta Majumdar and **I. Manna** (2010): ‘Corrosion Protection by Laser Surface Modification’ (accepted as an invited article), Corrosion Reviews (eds.: Dr. B. Raj and Dr. U. Kamachi Mudali), Narosa Publishing House, N. Delhi..
2. J. Dutta Majumdar and **I. Manna** (2010): ‘Laser Surface Engineering’(as an invited article), Surface Engineering (eds. D. Srinivasa Rao and S. V. Joshi), Centre for Science and Technology of the Non-Aligned & other Developing Countries (NAM S&T Centre), 2010, Daya Publishing House, N. Delhi.

Peer Reviewed Papers [A] In Archival Journals

2012

1. J. Chakraborty, **I. Manna**
Development of ultrafine ferritic sheaves/plates in SAE 52100 steel for enhancement of strength by controlled thermomechanical processing
Mater. Sci. Engg. A (2012, accepted)
2. S. Bera, **I. Manna**
Synthesis of CuCr and CuCrAg alloy with nano-ceramic dispersion by mechanical alloying and consolidation by laser assisted sintering
Materials Chemistry and Physics **132** (2012) 109-118.
3. G Paul, T Pal, P K Das, **I Manna**
Concentration and Size Dependence of Nano-Silver Dispersed Water Based Nanofluids
Journal of Colloid and Interface Science **371** (2012) 20-27.

4. B.B. Straumal, Y.O. Kucheev, L.I. Efron, A.L. Petelin, J. Dutta Majumdar, and **I. Manna**
Complete and Incomplete Wetting of Ferrite Grain Boundaries by Austenite in the Low-Alloyed Ferritic Steel
Journal of Materials Engineering and Performance **21** (2012) 667-670.
5. Mitun Das, Vamsi Krishna Ball, Debabrata Basu, Indranil Manna, T.S. Sampath Kumar and Amit Bandyopadhyaya
Laser processing of in situ synthesized TiB–TiN-reinforced Ti6Al4V alloy coatings
Scripta Mater (In press, 2012) doi:10.1016/j.scriptamat.2012.01.010
6. S. K. Karak, J. Dutta Majumdar, W. Lojkowski, A. Michalski, L. Ciupinski, K. J. Kurzydłowski, **I. Manna**
Microstructure and Mechanical Properties of Nano-Y₂O₃ Dispersed Ferritic Steel Synthesized by Mechanical Alloying and Consolidated by Pulse Plasma Sintering
Philosophical Magazine, **92** (2012) 516-534.
7. A. Basu, J. Dutta Majumdar, **I. Manna**
Structure and properties of CrxN coating
Surface Engineering **28** (2012) 199-204
8. T. Rakshit, S. Mandal, P. Mishra, A. Dhar, **I. Manna**, S. K. Ray
Optical and Bio-Sensing Characteristics of ZnO Nanotubes Grown by Hydrothermal Method
J NanoScience & Nanotechnology **12** (2012) 308-315.

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9. J.Dutta Majumdar, **I. Manna**
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10. S.K. Karak, T. Chudoba, Z. Witczak, W. Lojkowski, **I. Manna**
Development of ultra high strength nano-Y₂O₃ dispersed ferritic steel by mechanical alloying and hot isostatic pressing
Materials Science and Engineering A-Structural Materials Properties Microstructure and Processing, **528** (2011) 7475-7483
11. D. Roy, A. Sinha, P.P. Chattopadhyay, **I. Manna**
Nanoindentation behavior of bulk metastable Al(65)Cu(20)Ti(15) alloy prepared by consolidation of the ball milled powder
Materials Science and Engineering A **528** (2011) 8047-8050
12. S.K. Sinha, T. Rakshit, S.K. Ray, **I. Manna**
Characterization of ZnO-SnO(2) thin film composites prepared by pulsed laser deposition
Applied Surface Science, **257** (2011) 10551-10556
13. J.Dutta Majumdar, I. Smurov, **I. Manna**
Advances in Metallic Materials Processing
Advances in Materials Science and Engineering, Article Number: **180623** DOI: **10.1155/2011/180623** (2011).
14. D. Roy, R. Mitra, O. A. Ojo, W. Lojkowski, **I. Manna**
Microstructural Evolution and Mechanical Properties of Nanointermetallic Phase Dispersed Al₆₅Cu₂₀Ti₁₅ Amorphous Matrix Composite Synthesized by Mechanical Alloying and Hot Isostatic Pressing

- Metallurgical and Materials Transactions A-Physical Metallurgy and Materials Science*, **42A** (2011) 2498-2508
15. A. Sinha, A. Samanta, **I. Manna**, W. Lojkowski, P. P. Chattopadhyay
Micromechanical characterization of bulk composite prepared by sintering of mechanically alloyed aluminum-316 stainless steel (35 wt %) powder blend
Materials Science and Engineering A-Structural Materials Properties Microstructure and Processing, **528** (2011) 6034-6038
 16. Gayatri Paul, John Philip, Baldev Raj, Prasanta Kumar Das, **Indranil Manna**
Synthesis, characterization, and thermal property measurement of nano-Al(95)Zn(05) dispersed nanofluid prepared by a two-step process
International Journal of Heat and Mass Transfer, **54** (2011) 3783-3788
 17. A. K. Prasad, R. Jha, R. Ramaseshan, S. Dash, **I. Manna**, A. K. Tyagi
Comparison of microstructure and electronic properties of TiO(2) thin films grown by different techniques
Surface Engineering, **27** (2011) 350-354
 18. B. Straumal, A. O. Rodin, A. L. Petelin, B. Baretzky, S.G. Protasova, S. V. Dobatkin, J. D. Majumdar, **I. Manna**
Grain Boundary Segregation and Amount of Bulk Carbides in Severely Deformed Fe-C Alloys
Grain Boundary Diffusion, Stresses and Segregation, Dss 2010 Moscow Book Series: Defect and Diffusion Forum Series, **309-310** (2011) 51-62
 19. S. K. Sinha, R. Bhattacharya, S. K. Ray, **I. Manna**
Influence of deposition temperature on structure and morphology of nanostructured SnO₂ films synthesized by pulsed laser deposition
Materials letters, **65** (2011) 146-149
 20. Prasana Sahoo, S. Dhara, S. Dash, Baldev Raj, **I. Manna**, A. K. Tyagi
Air trapped nanocavity induced superhydrophobicity on GaN microbelt
Applied Physics Letters, **98** (2011) Article Number: **043103** DOI: 10.1063/1.3541877
 21. M. Pastor, **I. Manna**, S. Maiti, A. Pandey, K. Biswas
Effect of dysprosia doping on structural and electrical property of stabilized zirconia for intermediate-temperature SOFCs
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22. J. Dutta Majumdar and **I. Manna**
Mechanical properties of a laser-surface-alloyed magnesium-based alloy (AZ91) with nickel
Scripta Materialia, **62** (2010) 579-581
23. J. Dutta Majumdar, A. K. Nath, **I. Manna**
Studies on laser surface melting of tool steel-Part I: Surface characterization and it's electrochemical behavior
Surface and Coatings Technology, **204** (2010) 1321-1325
24. J. Dutta Majumdar, A. K. Nath, **I. Manna**
Studies on laser surface melting of tool steel-Part II: Mechanical properties of the surface
Surface and Coatings Technology, **204** (2010) 1326-1329

25. M. Pastor, S. Goenka, S. Maity, K. Biswas, **I. Manna**
Phase evolution, dielectric and impedance spectroscopic study of SrNb₂O₆ columbite phase
Ceramics International, **36** (2010) 1041-1045
26. S.K. Karak, C.S. Vishnu, Z. Witezak, W. Lojkowski, J. Dutta Majumdar, **I. Manna**
Studies on wear behavior of nano-Y₂O₃ dispersed ferritic steel developed by mechanical alloying and hot isostatic pressing
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27. S. P. Mondal, S. K. Ray, J. Ravichandran, **I. Manna**
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28. J. Chakraborty, P.P. Chattopadhyay, D. Bhattacharjee, **I. Manna**
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J Colloid Interface Sci, **349** (2010) 434-437
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32. D. Gupta, B.L. Mordike, S. Shariff, G. Padmanabhan, **I. Manna**, J.D. Majumdar
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Synthesis of copper alloys with extended solid solubility and nano Al₂O₃ dispersion by mechanical alloying and equal channel angular pressing
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34. **Indranil Manna**
Synthesis, Characterization and Application of Nanofluid – An Overview
Journal of the Indian Institute of Science **89** (2009) 21-33 [journal.library.iisc.ernet.in]
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36. S. Maiti, M. Pastor, R. S. Sundaram, J. Ravichandran, A. Kumar, K. Biswas, **I. Manna**
Synthesis and Characterization of Nanocrystalline Dysprosia Stabilized Zirconia Based Electrolyte for Intermediate-Temperature Solid Oxide Fuel Cell

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Direct laser cladding of Co on Ti-6Al-4V with a compositionally graded interface
Journal of Materials Processing Technology **209** (2009) 2237-2243
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Surface Engineering **25** (2009) 141-145.
 39. S. S. Singh, D. Roy, R. Mitra, R. V. Subba Rao, R. K. Dayal, Baldev Raj, **I. Manna**
Studies on laser sintering of mechanically alloyed Al₅₀Ti₄₀Si₁₀ composite
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 40. J. Dutta Majumdar, **I. Manna**, Ajeet Kumar, P. Bhargava, A. K. Nath
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Materials Processing Technology, **209** (2009) 2237-2243
 41. B. Vigneashwari, A. K. Tyagi, S. Dash, P. Shankar, **I. Manna**, S. Suthanthiraraj
Self-organization of In₂S₃ quantum dots into fractal nanostructures by electrophoretic deposition
Journal of Nanoscience and Nanotechnology, **9**(2009) 5183-5187
 42. J. Chakraborty, D. Bhattacharjee, **I. Manna**
Development of ultrafine bainite + martensite duplex microstructure in SAE 52100 bearing steel by prior cold deformation
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A benchmark study on the thermal conductivity of nanofluids
Journal of Applied Physics, **106** (2009) 094312 (14 pp.)
 44. S. Bera, W. Lojkowski, **I. Manna**
Development of wear-resistant Cu-10Cr-3Ag electrical contacts with nano-Al₂O₃ dispersion by mechanical alloying and high pressure sintering
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 45. D. Roy, S. S. Singh, B. Basu, W. Lojkowski, R. Mitra, **I. Manna**
Studies on wear behavior of nano-intermetallic reinforced Al-base amorphous/nanocrystalline matrix in situ composite
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46. A. Ray, D.Panda, T. Rakshit, S.K Mandal, **I. Manna**, S.K. Ray
Growth and Optical properties of $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3/\text{ZnO}$ Heterojunctions
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48. D. Roy, S. S. Singh, R. Mitra, M. Rosinski, A. Michalski, W. Lojkowski, R. Mitra, **I. Manna**
Synthesis and characterization of precipitation hardened amorphous matrix composite by mechanical alloying and pulse plasma sintering of $\text{Al}_{65}\text{Cu}_{20}\text{Ti}_{15}$
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49. A. Biswas, Lin. Li, U.K. Chatterjee, **I. Manna**, Jyotsna Dutta Majumdar,
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50. S. K. Mandal, T. K. Nath, **I. Manna**
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51. J. Dutta Majumdar, **I. Manna**
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Microstructural evolution of wear-resistant FeCrB and FeCrNiCoB coating alloys during high-energy mechanical attrition
Wear **264** (2008) 940–946
53. Ashok Kumar and **I. Manna**
Ionic conductivity and electrical relaxation of nanocrystalline scandia-stabilized zirconia using complex impedance analysis
Physica B: Condensed Matter **403** (2008) 2298-2305.
54. J. Chakraborty, D. Bhattacharjee, **I. Manna**
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55. G.C. Jha, S.K. Ray and **I. Manna**
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56. M. Chopkar, S. Sudarshan, P. K. Das, and **I. Manna**
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57. M. Chopkar, A. K. Das, **I. Manna**, P. K. Das
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Heat and Mass Transfer/Waerme- und Stoffuebertragung **44** (2008) 999-1004.

58. D. Roy, R. Mitra, T. Chudoba, Z. Witzczak, W. Lojkowski; H. J. Fecht, **I. Manna**
The mechanical properties of nano-TiO₂ dispersed Al₆₅Cu₂₀Ti₁₅ amorphous / nanocrystalline matrix bulk composite prepared by mechanical alloying and high pressure sintering
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59. D. Roy, R. Mitra, T. Chudoba, Z. Witzczak, W. Lojkowski, H-J Fecht, **I. Manna**
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Materials Science Engineering A **497** (2008) 93-100
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Effect of Sintering on Microstructure and Mechanical Properties of Nano-TiO₂ Dispersed Al₆₅Cu₂₀Ti₁₅ Amorphous/Nanocrystalline Matrix Composite
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The Mechanical Properties of Nano-TiO₂ Dispersed Al₆₅Cu₂₀Ti₁₅ Amorphous / Nanocrystalline Matrix Bulk Composite Prepared by Mechanical Alloying and High Pressure Sintering
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63. J. Dutta Majumdar, B. Ramesh Chandra, A.K. Nath and **I. Manna**
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