

Dr. Nitin Pandurang Wasekar



Academics

Doctor of Philosophy (Metallurgy), 2013, **Indian Institute of Technology** Madras, Chennai, India

Master of Engineering (Metallurgy), 2001-2003, **Indian Institute of Science, Bangalore**, India

Bachelor of Engineering (Metallurgy), 1997-2001, **National Institute of Technology (NIT)**
(Formerly Regional Engg College) **Nagpur**, India

Professional Experience

Scientist, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) Hyderabad, 2003-present

Recognitions

- Research paper entitled “Sliding wear behavior of electrodeposited Ni-W alloy and hard chrome coatings” ranked **1st** amongst ScienceDirect top 25 most downloaded articles for Wear journal from October-December 2015
- Research paper entitled “Sliding wear behavior of nanocrystalline Ni coatings: Influence of grain size” ranked at **8th** amongst ScienceDirect top 25 most downloaded articles for Wear journal from October-December 2012
- Awarded Research Scholarship by Department of Education, Ministry of Human Resource Development (MHRD) during Master of Engineering program in Indian Institute of Science, Bangalore (2001-2003).
- All India Rank (**AIR**) 38 in the Graduate Aptitude Test in Engineering (GATE) in Metallurgical Engineering discipline (2001).
- Fourth Rank in Nagpur University: Bachelor of Engineering program in Metallurgical Engineering (2001).

Reviewer

Surface and Coatings Technology, Electrochimica Acta, Journal of Materials Engineering and Performance, Journal of Alloys and Compounds

Patents

- (1) A PROCESS FOR CONTINUOUS COATING DEPOSITION AND AN APPARATUS FOR CARRYING OUT THE PROCESS
FR2937342-A1; **GB2464378-B (Granted)**; DE102009044256-A1; IN200801829-I1; ZA200906786-A; **US 8486237-B2 (Granted)**; JP2010156040-A (**Granted**); BR200904232-A2
- (2) AN IMPROVED METHOD FOR PREPARING NICKEL ELECTRODEPOSITE HAVING PREDETERMINED HARDNESS GRADIENT
Indian Patent: IN200901455-I1
- (3) A METHOD AND AN APPARATUS FOR PREPARING NICKEL TUNGSTEN BASED NANOCOMPOSITE COATING DEPOSITION
Indian Patent Filed (Application No. 201611001190)

UK Patent Application **GB 2464378 A**

(1) Application No: 0917396.3
(2) Date of Filing: 02.10.2009
(3) Priority Date: (1) 10/2008 (2) 16.10.2008 (3) 94

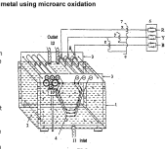
(4) Applicant: International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) Department of Science and Technology, Govt Of India, No.27 Green Park Extension, New Delhi-110017, India

(5) Inventor: Lingamasetti Rama Krishna, Nitin Pandey, Bhaskar Govindan Sundarajan

(6) Agent and/or Address for Service: Shrikanth Chaitu A Laxmi LLP, Hyderabad House, 41 Madhavani Road, Central Milton Keynes, MK3 3SN, United Kingdom

(7) Title of the Invention: A process for continuous coating deposition and an apparatus for carrying out the process
Abstract Title: Apparatus and method of coating a metal using microarc oxidation

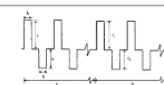
(8) A method and device which uses the technique of microarc oxidation (MAO) or plasma electrolytic oxidation (PEO) to create a microarc oxidation coating on metal sheets, foil or wire. The device comprises a first metal metal plate 1 which is fixed with three reinforced plastic (FRP) and contains an alkaline electrolytic solution, perforated nylon screens 2, three bar nylon guides 4, three copper rods 5 which are supplied with power by high conductive copper clamps 8 that are connected to a power system comprising transformer 6 and transformers 7, a rotation drive 10, three collecting nylon rods 9, electrolyte mist 11 and electrolyte outlet 12. The nylon bar guides 4, copper rods 5 and the collecting nylon rods 9 are rotated by the drive means 10. In use, the metal to be coated passes through the electrolytic solution along the copper rods 5 and the nylon bar guides 4 where a coat forms before being collected by the collecting nylon rods 9.



GB 2464378 A

2011-084102/15 M28 ARCI-2009.07.15
ARCI INT ADVANCED RES CENT POWDER *IN 200901455-I1
METALL (M28-A)

2009.07.15 2009-DE01455+2009IN-DE01455 (2011.01.21) C25C 01/08; I/08
Improved method for preparing nickel electrodeposits having predetermined hardness gradient (Eng)
C2011B84102
Addit. Data: WASEKAR N P, SUNDARARAJAN G
2009.07.15 2009IN-DE01455



(Dwg.No.1/1)

NOVELTY
Disclosed is an improved method for preparing nickel electrodeposits having predetermined hardness gradient by continuously varying the average pulse reverse current for selected periods when applied to an electrically conducting substrate in an aqueous acidic electrolytic bath containing minimum amount of stress relievers and anti-pitting agents. The total deposition time of the coating is equal to the sum of time periods for which each of the pulse waveform is varied. Each waveform can also be used separately to produce the coatings of single individual hardness values. Image 1/1

IN 200901455-1

特許証
特許第 5442396 号
Patent No. 5442396

発明の名称
連続式コーティング装置及び該装置を用いた方法

特許権者
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公開番号 特許 2009-237921
公開日 平成 21 年 10 月 15 日 (October 15, 2009)
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特許庁長官
SHIRO YAMAGUCHI
羽藤秀雄

Publications

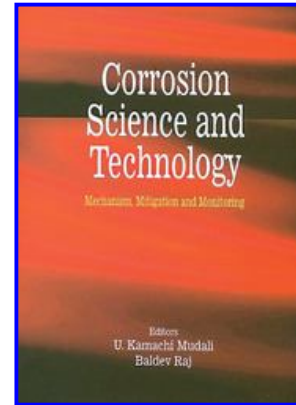
1. Book Chapter

Corrosion Science and Technology

Ed: U. Kamachi Mudali and Baldev Raj

Book Details

- Pub. Date: July 2008
- Publisher: Taylor & Francis, Inc.
- ISBN-13: 9780849333743
- ISBN: 0849333741



Chapter Details: Coating for Corrosion Resistance. Page number: 243-283

2. International Journals

- [1] O.S. Rahman, **Nitin P. Wasekar**, G. Sundararajan, A. K. Keshri, Experimental investigation of grain boundaries misorientations and nano twinning induced strengthening on addition of silicon carbide in pulse electrodeposited nickel tungsten composite coatings,
Materials Characterization (Under Review)
- [2] **Nitin P. Wasekar**, Prathap Haridoss, S.K. Seshadri, G. Sundararajan, Influence of mode of electrodeposition, current density and saccharin on the microstructure and hardness of electrodeposited nanocrystalline nickel coatings,
Surface and Coatings Technology 291 (2016) 130-140.
- [3] S. Singh, M. Sribalaji, **Nitin P. Wasekar**, S. Joshi, G. Sundararajan, R. Singh, A.K. Keshri, Microstructural, phase evolution and corrosion properties of silicon carbide reinforced pulse electrodeposited Nickel-tungsten composite coatings,
Applied Surface Science, 364 (2016) 264-272.
- [4] S. B. Chandrasekhar, **Nitin P. Wasekar**, M. RamaKrishan, Nagini, T. N. Rao, B. Kashyap, Dynamics of grain boundary and grain interior strengthening in nano to micron grain sized polycrystalline Cu-1wt% Al₂O₃ composite.
Philosophical Magazine & Philosophical Magazine Letters (Under Review).
- [5] S. B. Chandrasekhar, **Nitin P. Wasekar**, M. RamaKrishan, P. S. Babu, T. N. Rao, B. Kashyap, Evidence of dynamic strain ageing at room temperature in fine grained Cu-1wt% Al₂O₃ composite,
Journal of Alloys and Compounds, 656 (2016) 423-430.

- [6] **Nitin P. Wasekar**, G. Sundararajan, Sliding wear behavior of electrodeposited Ni-W alloy and hard chrome coatings,
Wear 342 (2015) 340-348
- [7] **Wasekar, N.P.**, Jyothirmayi, A., Hebalkar, N., Sundararajan, G., Influence of pulsed current on the aqueous corrosion resistance of electrodeposited zinc,
Surface and Coatings Technology 272(2015) 373-379
- [8] Telasang, G., Dutta Majumdar, J., **Wasekar, N.**, Padmanabham, G., Manna, I., Microstructure and Mechanical Properties of Laser Clad and Post-cladding Tempered AISI H13 Tool Steel,
Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, Vol 46 (5)(2015)Pages 2309-2321.
- [9] **Wasekar, N.P.**, Haridoss, P., Seshadri, S.K., Sundararajan, G., Sliding wear behavior of nanocrystalline nickel coatings: Influence of grain size,
Wear, Vol. 296 (2012) Pages 536-546.
- [10] Sanikommu, N., **Wasekar, N.P.**, Joshi, A.S., Sundararajan, G., A virtual instrument for pulsed electrodeposition: A novel technique for obtaining graded coatings,
Journal of Scientific and Industrial Research, Vol.70 (12) (2011) Pages 1026-1028.
- [11] **Wasekar, N.P.**, Jyothirmayi, A., Sundararajan, G., Influence of prior corrosion on the high cycle fatigue behavior of microarc oxidation coated 6061-T6 Aluminum alloy,
International Journal of Fatigue, Vol.33 (9) (2011) Pages 1268-1276.
- [12] Sundararajan, G., **Wasekar, N.P.**, Ravi, N., The influence of the coating technique on the high cycle fatigue life of alumina coated Al 6061 alloy,
Transactions of the Indian Institute of Metals, Vol.63 (2010) Pages 203-208.
- [13] **Wasekar, N.P.**, Ravi, N., Suresh Babu, P., Rama Krishna, L., Sundararajan, G., High-cycle fatigue behavior of microarc oxidation coatings deposited on a 6061-T6 Al alloy,
Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, Vol.41 (1) (2010) Pages 255-265.
- [14] **Wasekar, N.P.**, Jyothirmayi, A., Krishna, L.R., Sundararajan, G., Effect of micro arc oxidation coatings on corrosion resistance of 6061-Al alloy,
Journal of Materials Engineering and Performance, Vol.17 (5) (2008) Pages 708-713.
- [15] Krishna, L.R., Sudhapurnima, A., **Wasekar, N.P.**, Sundararajan, G., Kinetics and properties of micro arc oxidation coatings deposited on commercial Al alloys,
Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, Vol. 38(2) (2007) Pages 370-378.

3. Conferences/Presentations

1. **Nitin P. Wasekar**, D. S. Rao, G. Sundararajan, Dry Sliding wear behavior of pulse electrodeposited Ni-W-SiC nanocomposite coatings as an alternative for hard chrome replacement, **Euromat 2015** Sept 20-24, Warsaw, Poland
2. G. Sundararajan, **Nitin P. Wasekar**, Solid particle erosion behavior of electrodeposited nanocrystalline nickel coatings. **MS&T 2015**, Oct 4-8, Columbus, Ohio, USA.
3. S. K. Gautham, C. David, M.S. Karthiselva, B.K. Panigrahi, **Nitin P. Wasekar**, B. Srinivasa Rao. The effect of nanocrystalline grain size on mechanical property variation during irradiation of electrodeposited nickel coatings. **TMS-2014**, Feb 16-20, San Diego, CA, USA.
4. G. Sundararajan and **Nitin P. Wasekar**. Influence of tungsten additions on mechanical and tribological behavior of pulsed electrodeposited nanocrystalline nickel coatings. International Conference on Processing and Manufacturing of Advanced Materials, **THERMEC-2013**, Dec 2-6 2013, Las Vegas, USA.
5. G. Sundararajan and **Nitin P. Wasekar**. Solid particle erosion behavior of nanocrystalline nickel coatings: Influence of grain size and adiabatic shear bands. **MS&T-2013**, Montreal, Quebec, Oct 27-31, Canada.
6. **Nitin P. Wasekar**, G. Sundararajan, Prathap Haridoss and S K Seshadri. Mechanical Properties of Nanocrystalline graded and layered Ni coatings, International Symposium for Research Scholars on Metallurgy, **ISRS-2010**, 20-22 Dec, **IITM** Chennai India.
7. G. Sundararajan, **Nitin P. Wasekar**. Nanostructured and Layered Nickel coatings: Mechanical and Tribological Behavior, **TMS-2010**, 139th Annual Meeting and Exhibition, Feb 14-18, Seattle, Washington, USA.
8. **Nitin P Wasekar**, G. Sundararajan, L. RamaKrishna, N. Ravi. High Cycle Fatigue Performance of Micro Arc Oxidation Coatings deposited on 6061 Al alloy at 32nd International Conference & Exposition on Advanced Ceramics and Composites (**ICACC-2008**) Jan 27-Feb1, Daytona Beach, Florida, USA.
9. G. Sundararajan, P. S. Phani, **Nitin P. Wasekar**. Indentation Behavior of Porous Copper, **3rd International Indentation Workshop**, 15-21st July 2007, Cambridge, United Kingdom.
10. **Nitin P. Wasekar**, A. Jyothirmayi, G. Sundararajan. Corrosion Behavior of Micro Arc Oxidation coatings at National Symposium on Electrochemical Science and Technology, Indian Institute of Science Bangalore, 22-23 July 2005, conducted by The Electrochemical Society of India, Bangalore

Membership of Professional Bodies:

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Electrochemical Society (# 352176)

MRSI (# LMB2369)