

CURRICULAM VITAE

BIRANCHI NARAYAN SAHOO

PhD (Mechanical Engineering)

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EDUCATIONAL QUALIFICATION:

Examination	Board	Institution	Subject	Year of Passing	% of Mark
Ph.D	IIT Madras	IIT Madras	Mechanical Engg.	2019	7.75 (C.G.P.A.)
M.Tech	NIT RKL	NIT RKL	Mechanical Engg.	2011	8.83 (C.G.P.A.)
B.Tech	Biju Pattanaik University of Technology	Orissa School of Mining Engineering, Keonjhar	Mechanical Engg.	2007	7.10 (C.G.P.A.)

WORK EXPERIENCE: (TOTAL=2.5 YRS)

Name of the organization	Designation/Name of the post	Period
P.I.E.T.,RKL	Lecturer	26/04/2008-31/07/2009
OSME, KJR	Lecturer	20/10/2011-31/01/2012
RITE, BBSR	Assistant Professor	03/02/2012-22/08/2012
CUTM, BBSR	Assistant Professor	23/08/2012-18/12/2012
PDPU, GANDHINAGAR	Assistant Professor	05/06/2019-29/11/2019
SVNIT, Surat	Assistant Professor	02/12/2019-Till Date

RESEARCH INTEREST:

➤ **Development of advanced materials, study their fundamentals and manufacturability:**

Metal matrix/Nano composites, *In-situ* composites, Ultrafine grained in-situ/ex-situ composites, High strength light weight Al, Mg based metallic materials, Structure-Property-Manufacturability (Machining /Joining) correlation of such developed materials.

➤ **Plasticity and deformation behavior of materials:**

Deformation behavior at sub-zero to high temperature range, Processing map development, Tribology properties, Wear map development.

PROJECT WORK:

PhD Thesis: *Development, deformation behavior and tribological study of magnesium matrix hybrid (TiC-TiB₂) In-situ composite.*

Being lightest metallic material, magnesium (Mg) alloys find their suitability in automotive and aerospace industries. However, Mg alloys are not practically being used in structural components of such industries due to: (a) low strength properties, (b) tension-compression yield asymmetry and (c) manufacturing challenges due to their inherent flammable tendency. In this work a novel manufacturing route has been established to develop (TiC+TiB₂) reinforced *in-situ* Mg composite. The process can be successfully used in industrial scale. Also, the developed materials proved a potential candidate to improve tension-compression yield symmetry which makes it suitable for producing industrial components. In addition to this, the composite material shows improves tribological and machinability properties and also exhibit high thermal stability.

M-Tech Thesis: *Effect of Cryogenic treatment on tungsten carbide inserts and study of its performance on machining.*

B-Tech: *Temperature Control System using microcontroller and Sensor.*

PUBLICATIONS:

International Journals (Scopus h Index-5): Total Scopus Citation :78

Sl. No.	Authors	Title	Journal	Volume/Year/ Page Number
01	S.K. Sahoo, B. N. Sahoo , S.K. Panigrahi	Development of nano in-situ TiC+TiB ₂ reinforced ZK60 Mg matrix composite	Materials Science and Engineering A (Elsevier)	Accepted (2020)
02	B.N. Sahoo , S.K. Panigrahi,	Development of wear maps of in-situ TiC+TiB ₂ reinforced AZ91 Mg matrix composite with varying microstructural conditions	Tribology International (Elsevier)	135 (2019) 463-477
03	B.N. Sahoo , S.K. Panigrahi,	Deformation behavior and processing map development of AZ91 Mg alloy with and without addition of hybrid in-situ TiC+TiB ₂ reinforcement	Journal of Alloys and compounds (Elsevier)	776 (2019) 865-882
04	I Jaseem, R.J Immanuel, P.N Rao, F. Khan, B.N Sahoo , M. Kamaraj, S.K Panigrahi	Synergetic effect of cryorolling and postroll aging on simultaneous increase in wear resistance and mechanical properties of an al-cu alloy	Journal of Tribology (ASME)	140 (2018) 061607-1-11
05	B.N. Sahoo , F. Khan MD, S. Babu, S.K. Panigrahi, G.D. Janaki Ram,	Microstructural modification and its effect on strengthening mechanism and yield asymmetry of in-situ TiC-TiB ₂ / AZ91 magnesium matrix composite	Materials Science and Engineering A (Elsevier)	724 (2018) 269-282

06	B.N. Sahoo, S.K. Panigrahi,	Effect of in-situ (TiC-TiB ₂) reinforcement on aging and mechanical behavior of AZ91 magnesium matrix composite	Materials Characterization (Elsevier)	139 (2018) 221–232
07	B.N. Sahoo, S.K. Panigrahi,	A study on the combined effect of in-situ (TiC-TiB ₂) reinforcement and aging treatment on the yield asymmetry of magnesium matrix composite	Journal of Alloys and compounds (Elsevier)	737 (2018) 575–589
08	B.N. Sahoo, S.K. Panigrahi,	Synthesis, characterization and mechanical properties of in-situ (TiC-TiB ₂) reinforced magnesium matrix composite	Materials & Design (Elsevier)	109 (2016) 300–313

International Conferences:

1. **B.N.Sahoo**, S. K. Panigrahi, “Effect of In-situ reinforcement on the hot compressive deformation behavior of TiC-TiB₂+AZ91 magnesium matrix composite on the base of processing map” *International Conference on Processing & Manufacturing of Advanced Materials Processing, Fabrication, Properties, Applications July 8-13, 2018, Paris, France.*
2. **B. N. Sahoo**, S. K. Panigrahi, “Microstructure and mechanical behavior of FSP processed (TiC-TiB₂)/AZ91 in-situ hybrid composite”, *Nano SPD-7 Sydney, Australia.*
3. F. Khan MD, **B. N Sahoo**, S. K. Panigrahi, “Strategies to Reduce Tension-Compression Yield Asymmetry in Magnesium Alloys”, *The 4th International Conference on Advances in Materials & Processing(ICAMMP4).*
4. Aavek Mohanty, **Biranchi Narayan Sahoo**, Soumya Gangopadhyay, Krishna Pramanik, “Effect of Deep Cryogenic Treatment on Various Characteristics of P30 Cemented Carbide Tool”, *Proceedings of International Conference on Smart Technologies for Mechanical Engineering, page-755-759, ISBN: 978-93-83083-35-0.*

National Conferences:

1. B.C.Behera, S.K.Sahoo, **B.N.Sahoo**, L.N.Patra, P.R.Dhal, S.Kata, “Finite Element Analysis of Ultrasonic Stepped Cylindrical Horn for Vibration Assisted Turning”, *2011 AICTE Sponsored National Conference on Emerging Trend & its Application in Engineering (NCETAE 2011), page-234-237.*

Books and book chapters:

Book Title : Heat Transfer
 Publisher : B.K. Publication
 Pages : 1-374
 ISBN No. : 978-93-80422-49-7

AWARDS AND ACHIEVEMENTS:

1. Institute research award IIT Madras for best academic research.
2. DST foreign travel grants (ITS/2018/002119) for attending international conference in Paris, France (THERMEC-2018)

3. Recipient of Ministry of Human Resource Development (MHRD) scholarship at IIT Madras, Chennai, India, 2013-to-2018.
4. Recipient of Ministry of Human Resource Development (MHRD) scholarship at NIT Rourkela, India, 2009-2011.

PERSONAL DETAILS:

Father's Name : Late Banshi Dhar Sahoo
Sex : Male
Marital Status : Married
Nationality : Indian
Languages : Oriya, Hindi, English

DECLARATION:-

I hereby declare that the particulars above are true to the best of my knowledge and belief.

DATE:10.12.2019

PLACE: Surat

(BIRANCHI NARAYAN SAHOO)