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Кнеза Михаила 36  
11 000 Београд  
Србија

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Научном већу Математичког института САНУ  
Академику Проф. др Драгошу Цветковићу

Стручни извештај о учешћу на научном скупу  
**ICAMEN 2019 – International Conference on Advances in Mechanical  
Engineering and Nanotechnology,  
March 08-09, 2019  
Manipal University Jaipur, India**

Поштовани,

У периоду од 08-09.03.2019. године одржана је конференција "**ICAMEN 2019 – International Conference on Advances in Mechanical Engineering and Nanotechnology**" у организацији **Manipal University Jaipur, India**, <https://icamen2019.co.in/>. На позив Prof. Santosh Patil-a, младог колеге са којим сам сарађивала интензивно у оквиру његове докторске дисертације одбрањене на универзитету Technologi PETRONAS у Малезији, а који је сада на позицији ванредног професора и заменика проректора за међународну сарадњу на универзитету Manipal у Jaipur-у у Индији, прихватила сам учешће у овој конференцији у улози члана међународног научног комитета. Од председника организационог одбора добила сам позив да одржим предавање по позиву, што сам и прихватила. Припремила сам предавање: ON BIOMIMETICS IN MACHINE ELEMENTS DESIGN.

Конференцији на жалост нисам присуствовала и поред припремљеног пута, због неизвесне безбедносне ситуације у том делу Индије у том периоду времена. Међутим, на моје велико задовољство планови о учешћу на конференцији и јачању сарадње са колегама са овог универзитета нису изостали. Ово је поткрепљено и потписивањем Меморандума о сарадњи Математичког института САНУ и Manipal University Jaipur, India. С обзиром на испред поменуте околности, предавање је снимљено у Математичком институту САНУ, у оквиру састанка Семинара Механика машина и механизма – модели и математичке методе и послато организаторима. Након презентације предавања, питања су постављана путем интернета, тако да смо на обострано задовољство испунили планирано. Кратки апстракти предавања су штампана у виду књиге апстраката која је доступна на сајту конференције, а објављивање целих радова се очекује до јуна у серији AIP Conferences Proceedings реферисаној на Web of Science и Scopus.

У прилогу Извештаја достављам: Позивно писмо за предавање по позиву на конференцији, Копију Сертификата о одржаном предавању по позиву, Копију првих страна Књиге апстраката и Копију објављеног апстракта, mail поруку и Извештај који сам од колеге Santosh Patil-а добила након завршене конференције,

С поштовањем,

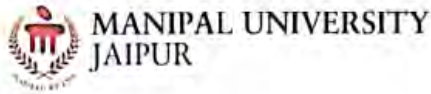
У Београду, 01.04.2019.



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др Ивана Атанасовска,  
виши научни сарадник

Прилози:



04<sup>th</sup> December, 2018

**DR. IVANA ATANASOVSKA**  
Associate Research Professor  
Mathematical Institute of the Serbian Academy of Sciences and Arts  
Kneza Mihaila 36, 11001 Belgrade, Serbia

Dear Sir,

**REF: INVITATION TO DELIVER A KEYNOTE/INVITED ADDRESS DURING THE INTERNATIONAL CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING AND NANOTECHNOLOGY" (ICAMEN-2019), ORGANISED JOINTLY BY MANIPAL UNIVERSITY JAIPUR (MUJ), INDIA AND UNIVERSITI MALAYSIA PAHANG (UMP), MALAYSIA**

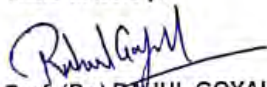
The above matter is referred,

It is our privilege to invite you to deliver the Keynote/Invited Lecture during the sessions of ICAMEN-2019 which will be held on 8<sup>th</sup> and 9<sup>th</sup> March 2019. The conference will be the platform in addressing the key research issues in the field of Advances in Mechanical Engineering and Nanotechnology. We believe that your expertise and experience will enlighten the participants and young researchers.

**The organizing committee, ICAMEN-2019 at MUJ will cover your accommodation and daily expenses/local transport during your stay. However, your paper registration and travel expenses will be borne by yourself.**

Look forward for your gracious presence at Manipal University Jaipur.

Yours Sincerely,



**Prof. (Dr.) RAHUL GOYAL**  
Convener, ICAMEN-2019,  
Head, Department of Mechanical Engineering  
Manipal University Jaipur  
Tel : +91 1413999100 Ext: 670  
Email : rahul.goyal@jaipur.manipal.edu



MANIPAL UNIVERSITY  
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# ICAMEN 2019

INTERNATIONAL CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING AND NANOTECHNOLOGY

MARCH 8-9, 2019

DEPARTMENT OF MECHANICAL ENGINEERING, MANIPAL UNIVERSITY JAIPUR

## CERTIFICATE of INVITED SPEAKER

*This is to certify that*

**Dr. Ivana Atanasovska**

has successfully presented an invited talk on a topic  
“On Biomimetics in Machine Elements Design”  
during ICAMEN2019.

Prof. Rahul Goyal  
Convener

Dr. Santosh Patil  
Organizing Secretary



MANIPAL UNIVERSITY  
JAIPUR



Universiti  
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Engineering • Technology • Creativity

# ICAMEN 2019

INTERNATIONAL CONFERENCE  
ON  
ADVANCES IN MECHANICAL ENGINEERING AND  
NANOTECHNOLOGY

**March 08-09, 2019**

**Jointly Organized by:**

Department of Mechanical Engineering,  
Manipal University Jaipur, India

&

Faculty of Mechanical Engineering,  
Universiti Malaysia Pahang, Malaysia

**Venue**

**Department of Mechanical Engineering,  
Manipal University Jaipur**

Website - [www.icamen2019.co.in](http://www.icamen2019.co.in)  
Email - [icamen2019@gmail.com](mailto:icamen2019@gmail.com)  
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## **Technical Session-2**

### **Design Engineering**

**Session Chair:** Dr Ivana D Atanasovska

**Session Co-chair:** Dr Dhaneshwar Mishra

**Venue:** 117 D, Academic Block-1

**Time:** 14:00-16:00

## Technical Session 2

Paper ID-DE3302

**An Investigation on Churning Power Loss of Worm Gear drive through Experimentation & optimization techniques**Hardik G Chothani<sup>1, a)</sup> and Dr. Kalpesh D Maniya<sup>2, b)</sup><sup>1</sup>Research Scholar, Mechanical Engineering Department,  
Gujarat Technological University Ahmedabad, India,<sup>2</sup>Associate Professor, Mechanical Engineering Department  
C K Pithavala College of Engineering and Technology, Surat, India**Abstract**

This paper probes the optimization of process parameters on the churning power loss (CPL) in worm gear box. For Lubrication of worm gear drives, usually flash lubrication is used from the oil sump. During operation, substantial amount of energy is used up in overcoming the friction between meshing gears and in reducing losses arising out of churning of oil. The experiments were performed under varying speed of worm, immersion depth of lubricant and temperature of lubricant inside the gear box using Taguchi L27 orthogonal array. The deviation of the churning power loss and total power loss with process parameters is mathematically modelled by using standard regression technique. The adequacy of the developed mathematical models is checked by Analysis of Variance (ANOVA) and problem is formulated as a multi-objective optimization. Based on statistical analysis, it has been construed that immersion depth and temperature of lubricant are adequately influential parameters for churning power loss. Confirmation test result demonstrates the application of the optimization technique for predicting optimal combinations of input variables for better output responses.

Paper id-DE3304

**On Biomimetics in Machine Elements Design**Ivana D. Atanasovska<sup>1, a)</sup> and Dejan B. Momcilovic<sup>2, b)</sup><sup>1</sup>Mathematical Institute of the Serbian Academy of Sciences and Arts,  
Kneza Mihaila 36, 11000 Belgrade, Serbia<sup>2</sup>Institute for Testing of Materials-IMS Institute,  
Bulevar vojvode Misica 43, 11000 Belgrade, Serbia**Abstract**

In this paper the discussion and the results of the application of biomimetics principles in machine elements design are given. The basic definitions and history of the developing of this discipline are presented. The biomimetics is one of the inter-disciplinary disciplines which reach their full attention during last decade. The engineers are realizing the benefits which can be gained by the biomimetics principles according with the new requirements in machine design such as: size reduction, energy efficiency increasing and higher reliability. Therefore, biomimetics has intents to grow up in a new and progressive discipline widely use in machine elements design. In this paper, the focus is on the geometric optimizations in machine elements design based on the nature design as inspiration. As the example of the machine elements design based on the biomimetics principles, the new design for the transition zone of the particular high loaded shaft is developed and analyzed. The new design is inspired with the design solutions which Nature made in the case of trees. The comparative Finite Element Analysis is performed for both transition zone designs: the traditional engineering design and the design based on the biomimetics. The conclusions about the increased load capacity obtained with innovative biomimetics design are discussed.

Re: ICAMEN2019

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From: santosh patil (santosh045@gmail.com)

To: iviatanasov@yahoo.com

Date: Tuesday, March 12, 2019, 10:38 AM GMT+1

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Dear Ivana,

Greetings.

The conference ICAMEN2019 was a huge success as Vice Chancellor of UNIVERSITI MALAYSIA PAHANG, Malaysia made his gracious presence and their Dean was a plenary speaker. A brief report is attached for your reference. Any additional data required kindly ask for the same. Also, attached is the Abstract proceeding for your reference. Later the AIP Proceedings will be obtained propably in June 2019. Your lecture was very much appreciated from our faculty members and participants. Thanks.

I hereby attach the signed MoU between MUJ and MISANU. Please find the same and awaiting for future research cooperation and collaboration. Hope to see you soon. I am planning to visit Serbia, hope I get the funding accordingly. Thanks.

Thanks for all your kind support. wish more and more research collaboration.

Regards,

Dr. Santosh S. Patil

Organising Secretary, ICAMEN 2019 - [www.icamen2019.co.in](http://www.icamen2019.co.in)

Deputy Director- International Collaborations. MUJ

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## **ICAMEN2019 Report**

**Manipal University Jaipur:** A two day International Conference on Advances in Mechanical Engineering and Nanotechnology - ICAMEN2019 (March 08-09, 2019) was organized at Manipal University Jaipur. The conference was a joint venture of Department of Mechanical Engineering (MUJ) and Faculty of Mechanical Engineering, Universiti Malaysia Pahang, Malaysia. The focal theme of the conference was the ongoing advances in the field of Mechanical Engineering and Nanotechnology. Delivering the welcome address, convener of the conference, Professor Rahul Goyal states the relevance and implications of nanotechnology on biofuel and development of other allied fields. Prof. G. L. Sharma, who chaired the conference, explained the importance of academic conferences and the necessity of co-operation between different universities for the further development of technology. Prof. Jagannath Korody (Dean, Faculty of Engineering at MUJ) zero in on the importance of practical, experiment-based education, and relevance of industry-academia connect for betterment in engineering education. Vice Chancellor (Universiti Malaysia Pahang) Professor Dato' Sri Dr. Daing Mohammed Nasir Daing Ibrahim, vice Chancellor of UMP, Malaysia was the Chief Guest and shared the benefits of collaboration in making the technical universities stronger. Prof. Rizalman Mamat was the Guest of Honour and also presented a plenary

address on Renewable Energy resources. Mr Akhilesh Prasad, Ex GM of SAIL was another Guest of Honour and shared his experience and promoted industry-academia connect.

The conference screening committee received more than 180 papers from all parts of the globe. 90 papers were selected after proper screening and review for presentation. There were altogether four keynote addresses and eight invited talks. Papers were presented from India as well as abroad namely Indonesia, Malaysia, Serbia, Oman, Saudi Arabia etc. Dr. Rizalman Mamat, Dean, UMP thanked MUJ for hospitality and providing UMP opportunity to be a collaborative partner for this conference. Dr. Santosh Patil, who was the organizing secretary of the conference, delivered the formal vote of thanks. The faculty members of Department of Mechanical Engineering (MUJ) played a pivotal role for making this conference successful.

Glimpses of the ICAMEN2019:



