Curriculum Vitae

Name: KAILASH JHA

Present Designation: Associate Professor (CAS) in Dept. of Mechanical Engineering

Date of Joining: 24.11.2004 (as Assistant Professor)

Education

Ph. D. 1999, Mechanical Engineering, Indian Institute of Science, Bangalore.
Thesis Title   : Extracting Multiple Feature Interpretations and Automatic Propagation of Feature Modification

M. Tech. 1993, Mechanical Engineering, Regional Engineering College (Presently, NIT), Durgapur
Specialization: Design and Production Engineering
Thesis Title   : Analysis of Plane Stress by Finite Element Method.

B. E. 1991, Mechanical Engineering, Regional Engineering College (Presently, NIT), Durgapur, India.

Experiences

11/2006 – till date: Associate Professor(CAS), Department of Mechanical Engg., IIT (ISM), Dhanbad – 826 004, India.

11/2004 – 11/2006: Assistant Professor (Mechanical), Department of Mechanical Engg. and Mining Machinery Engg., IIT (ISM), Dhanbad – 826 004, India.

June, 2001 to November, 2004: SSE, **Scicom Infotech Private Ltd. Noida**, India.

January 2001 to 20th June, 2001: SSE, **IIS Scientific Computing Limited, New Delhi**, India.

 June, 1999 to Dec., 2000: SSE, **XOX Technologies Private Ltd, Bangalore**, India.

9th November, 1998 to June, 1999: Senior System Analyst, EMRC, Bangalore, India.

Courses Taught

UG Level
- CAD and Geometric Modeling,
- Machine Design,
- Mechanical Engineering Design,
- Mechanical Engineering-1,
- Finite Element Method

- Mechanical Vibrations
- Engineering Mechanics
- Mechanics of Solids
- Theory of Machines

PG Level
- Lubrication and Bearing Design
- Computer Aided Engineering Design

Research

Research Interest
- CAD and Geometric Modeling.
- Water Pipe networking
- Curve and Surface Modeling
- Fluid Flow Analysis
- Coating Technology

Ph. D. Guidance

Completed: 2 as sole guide

On-going: 5 as sole guide out of which one is under evaluation and the external examiner has submitted the review report.

Completed Theses

- **Computer Aided Analysis of Pipe Network**

- **"Multi-Objective Optimization of Gas Cyclone Separators"**

Theses close to completion

- A thesis title "Enhancement of surface properties by rare earth reinforced composite TIG cladding on Ti-6Al-4V alloy" is under evaluation and the external examiner has submitted his review report.

Externally Funded Projects

1. **R & D Project entitled "Construction of 3D surfaces from incompatible curves" sponsored by UGC, Amount sanctioned: Rs. 6,77,800/-, Duration of Project: From 01.04.2010 to 31.01.2013, No Co-PI**

Outreach Programme Completed

Two-days EDP on MECAD was successfully conducted from 24-25 April 2024.

Administrative Responsibilities

At Present

- Member, SPGC(Advanced), IIT (ISM), Dhanbad

- Convenor, DPGC(Mechanical Engineering)

- Co-ordinator, M.Tech(Design)
- Examination in-Charge (Mech. Engg.)

Other administrative Contributions

- Member, BOG, ISM, Dhanbad
- Member, Research Council, ISM, Dhanbad
- Moderator, Mech. Engg., ISM, Dhanbad
- Member of DFSC (Assistant Prof.)

Contributions to Laboratory Development

- First Faculty-in-charge, CAD/CAM, Center, ME & MME Department

- **Started the following laboratories in the Department:**
  - CAD/CAM Center

Other Relevant Information

- **Chairman of three DSCs in the Department of Mechanical Engineering**
- **Chaired a session in an International Conference (PLMSS-2006) organized by ADA, NAL, HAL, DRDO, IISc, Bangloare.**
- **Received International Travel Support(ITS)** from DST to present a paper in an international conference(USA).

Publications

(a) International Journals

1. *Jha, K and Gurumoorthy, B 2000 ``Multiple feature interpretation across domains", Computer in Industry, 42(1), pp 13-32.SCIE.*
2. *Jha, K and Gurumoorthy, B 2000 ``Automatic propagation of feature modification across domains", Computer Aided Design, 32(12), pp 691-706, SCI.*
3. *Jha, Kailash, 2004 ``Minimum Energy Based Interpolation for Interactive Incremental Well-path design". International Journal of Computer Aided Engineering and Software, 21(7), PP: 679-691, SCIE.*
4. *Jha Kailash, 2005 ``Energy based multiple refitting for skinning", International Journal of CAD/CAM, Vol. 5, No. 1, 11-88. Now Journal of Computational Design and Engineering (ESCI).*
5. *Jha Kailash, 2007 ``Automatic Minimal Loop Extraction and Initialisation for Water Pipe Network Analysis", International Journal of Simulation, Systems, Science and Technology, Vol. 9 No. 2, PP 8-19. Scopus, H Index 17.*
6. *Jha Kailash, 2008 ``Construction of branching Surface from 2-D Contours", International Journal of CAD/CAM", Vol 8. No.1, 21-18. Now Journal of Computational Design and Engineering (ESCI).(Q1)*

7. *Jha, Kailash, 2009 ``Energy Based Approximation and Interactive Visualization of Eventualities in Earth Layers for Optimal Well Path", International Journal of Simulation, Systems, Science and Technology, No. 4, Vol. 10, 1-10. Scopus, H Index 17.*

8. *Jha Kailash, 2012,`` A New Method for Reconstruction of Smooth Branching Surface from Contours" "International Journal of CAD/CAM", Vol 12. No. 1, pp29-37. Now Journal of Computational Design and Engineering (ESCI).(Q1)*

9. *Mishra Manish, Jha K. 2017, ``Graph-based loop extraction for automatic analysis of a water pipe distribution network and comparison with EPANET" SIMULATION:* Transactions of the Society for Modeling and Simulation International. DOI: 10.177/0037549717708037, 93(11),921-933. SCIE(Q4)

10. *Vikash Kumar & Jha K, ``Numerical investigations of the cone-shaped vortex finders on the performance of cyclone separators" Journal of Mechanical Science and Technology, July, Vol. 32 No.11, 2018. SCIE(Q3)*

11. *Vikash Kumar & Jha Kailash, 2018 ``Multi-Objective Shape Optimization of Vortex Finders in Cyclone Separators Using Response Surface Methodology and Genetic Algorithms" Separation and Purification Technology, 215, 25-31, 2018, SCIE,(Q!)*

12. *Vikash Kumar & Jha Kailash, 2019`` Effects of Convergent-Divergent Vortex Finders on the Performance of Cyclone Separators using CFD Simulations, Simulation Journal, SCIE, 93(11), 921-933(Q4)*

13. *Jha Kailash and Manish Mishra, 2020, ``Object-Oriented Integrated Algorithms for Efficient Water Pipe Network by Modified Hardy-Cross Technique" Journal of Computational Design and Engineering,7(1), 56–64(Q1)*

14. *Monty Kr, Shakti Kr, Kailash Jha and A. Mandal, 2022`` **Composite coating by TIG cladding with different rare earth oxides, Surface Engineering , 38(30), 271-287(Q2)***

15. *Modi Sita Ram & Jha K, 2023`` Multi-mode fracture analysis for critical crack size and life estimation of hip prosthesis using extended finite element method",JMST, 37(2), 1047-1053(Q3)*

16. *Monty Kr, Shakti Kr, Kailash Jha and A. Mandal, 2023``* Deposition of hard solid-lubricating composite coating on Ti-6Al-4V alloy with enhanced mechanical, corrosion, and electrical discharge wear properties" Surface and Coating Technology, 475, 129315(Q1)

17. **Monty Kr,** Anubhav Kumar Sharma, Kailash Jha and A. Mandal, 2023 ``Influence of CeO2 on mechanical, metallurgical and tribological properties of composite coating fabricated on Ti-6Al-4V substrate" accepted in International Journal of Surface Science and Engineering on 16/4/2023(Q4)

18. **Monty Kr, Shakti Kr, Kailash Jha and A. Mandal, 2023`` Parametric optimization and clad characterization of composite coating prepared on Ti-6Al-4V alloy using TiB_2-Ni-Yb_2O_3 precursor powders**, Volume 308, 15 October 2023, 128248, Materials chemistry and physics.

19. Monty Kr, Anubhav Kumar Sharma, Kailash Jha and A. Mandal, 2023 `` **Die-sink EDM texturing to fabricate hydrophilic and wear resistant surface. VOL. 39, NO. 5, 591–599**, Surface Engineering

20. *Modi Sita Ram & K P Ajit, Jha K, 2023,* Numerical and experimental crack

analysis of annealed TC4 ELI alloy in the room and body fluid environment, Accepted for publication on 26/10/2023 in Arabian Journal of Science and Engineering.

21. Dinesh Kumar, Vikash Kumar, K Jha, 2024, `` Effects of hyperboloid vortex finder and inlet angle on the cyclone flow pattern and separation efficiency" Journal of Chemical Engineering and Design, 204(2024) , 81-96
https://doi.org/10.1016/j.cherd.2024.02.017

22. Dinesh Kumar, K Jha, Vikash Kumar, Lakhbir Singh Brar, 2024, ``Performance evaluation of cyclone separators with elliptical cross-section using large-eddy simulation" Powder Technology, 438(2024), 119610
https://doi.org/10.1016/j.powtec.2024.119660

(b) Conferences

1. International

a) *Jha, K, 2001 "Local Minimum-Energy, Finite-Element Based Formulation for Well-Path Design", PROLAMAT-2001, Budapest(Hungary), 7-10 Nov, pp206-17.*

b) *Jha Kailash, 2003 ``Energy based multiple curve refitting for skinning", International Conference CAD/ Graphics, Macao(China).*

c) *Jha Kailash, 2004 ``Automatic Extraction of Minimal Cycles for Initialization of Graph Network", International Conference in Discrete Mathematics and its Application, Amrita Vishwa Vidyapitham Coimbatore (India).*

d) **Jha Kailash, 2006 ``Automatic Loop Extraction and Initialization for Water Network Analysis", Paper has been accepted for presentation in 15th Congress of Asia and Pacific Division of the International Association of Hydraulic Research and International Symposium on Maritime Hydraulics, pp1315-23, 7-10 August, Deptt. of Ocean Engineering, IITM, Chennai, India.**

e) **Jha Kailash, 2006 `` Catmull-Clark Subdivision and Skinning of Incompatible Curves" ,International Conference on Trends in Product Life Cycle, Modeling, Simulation and Synthesis (PLMSS-2006), IISc., Bangalore(India), pp-83-90.**

f) *Jha Kailash, 2007 ``Construction of 3-D Surface from 2-D Contours having Branches" CAE 07, Deptt. Of Mechanical Engg. IITM, Chennai, pp 588-594.*

g) **Jha K, `` Reconstruction of Branching Surface and its Smoothness by Reversible Catmull-Clark Subdivision" 5545, PP 759-769, LNCS, CGGM-09, Baton Rouge, Louisiana, USA.**

h) **Jha Kailash, 2011 "A New Method for Reconstruction of Smooth**

Branching Surface from Contours" PLMSS-11, PSG College of Technology, Coimbatore, 5-7 December, 2011, pp20-28

i) Jha Kailash, Minimal loop extraction for leak detection in Water pipe network. Vol. 2 260-266, Rait-2012, ISM Dhanbad.

j) Mishra M., & Jha K., ``Computer aided automatic water pipe network analysis", ICAD&M, NIT, Trichy, 5-7 December, 2014.

k) *Jha K, Mishra M., 2016, "Computer Aided Automatic Water Pipe Network Analysis by Simultaneous Loop Equation Solution Method" 3rd IEEE International Conference(RAIT-16), 3-5 March, 2016 Vol. II, PP691-699.*

l) *V Kumar, LS Brar, K. Jha, 2016, The effect of converging vortex finder on the performance of cyclone separators. Second, International Conference on Powder, Granule and Bulk Solids: Innovations and applications, December 1-3, 2016, Jaipur, Rajasthan.*

m) *Mishra M K & Jha Kailash, 2018, ``Algorithms of Minimal Number of Sensors Placement Using Pressure Sensitivity Analysis for Leak Detection in Pipe Network", STIWM-2018, IITR February, 16-19, 2018.*

n) *Jha Kailash and Manish Mishra, 2018, `` Modified Newton- Raphson Technique for Integrated Object-Oriented Water* Pipe Network Analysis" WDSA/CCWI 2018, Queen's University, Kinston, Canada

o) Modi, Sita Ram & Jha K., 2022`` Modal and Dynamic Analysis of Femur bone for Different Bone-Implant Materials", **published in IPoMM2022, Dept. of Mech. Engg., III(ISM), Dhanbad, India**

p) *Aashiya Parween, Monty Kumar, Amitava Mandal and Kailash Jha, 2022, `` Fabrication of hard WC + Cu + La 2 O 3 coating on Ti-6Al-4V alloy using reverse EDM process." published in IPoMM2022, Dept. of Mech. Engg., III(ISM), Dhanbad, India*

q) *Dinesh Kumar & Jha Kailash, 2023, ``Effect of hyperbolic outlet duct length and shap on the flow pattern and efficiency of cyclone separators ", ISME-2023, PESU Bangalore, 13-15 July, 2023.*

r)

2. National

a) *Jha, K and Gurumoorthy B, 1996 ``Multiple feature interpretations of a part", National Conference on Machines and Mechanisms, Jan, CMERI, Durgarpur, pp c44--c50.*

b) *Jha K and Gurumoorthy B, 1997 ``Efficient updating of feature models across domains", ``National Conference on Machines and Mechanism", IIT, Kanpur, Dec, pp c43-c59.*

c) *Jha, K, 1997 "Automatic propagation of feature modification across domains to support concurrent engineering", ``3rd students' in-house symposium Dept of Mech. Engg, Indian Institute of Science, Bangalore INDIA", October 7.*

d) *Jha K, 2001 ``Computer Aided Energy based Interactive Discrete*

Well Path Design" NACOMM-2001, IIT, Kharagpur, 21-22 December, PP 313-322.

e) *Jha, Kailash, 2005* ``**Energy based approximation for eventualities in earth layers for optimal well path", published in All India Conference in CAD/CAM, Robotic and Futuristic Factories", 10-11 December, BIT, Mesra, Ranchi (India)**

f) **Jha, Kailash, 2006 ``Real Time Monitoring of Well-Path and Geological Structures",** *National seminar on* **Condition Monitoring Overview & advanced Techniques (COMOAT- 06), pp321-327, 15-16, September, Indian School of Mines, Dhanbad, India**

g) *Jha K, 2009* ``**SKINNING REVERSIBLE CATMULL-CLARK SURFACE FROM INCOMPATIBLE CURVES AND CONVERGENVE OF POLYGONS TOWARDS CUBIC B-SPLINE CURVE", RAIT-09, Deptt. of Computer Science and Engineering ISMU, Dhanbad (India), pp 448-457.**

h) *Jha K, 2010, 'Innovative and Collaborative Real-Time Well- Path Planning for Drilling" National Seminar on Drill and Drilling-An Update. Deptt. of ME&MME, ISM Dhanbad. 23-24 September, 2010.*

Books/Reports/Chapters/General articles etc. *(Top 10)*

Sl. No.	Title	Author's Name	Publisher	Year of Publication
1.	Digital Enterprise Challenges(Life-Cycle Approach to Management and Production	G L Kovacs, Peter Bertok and Geza Haidegger	Kluwer Academic Publishers	2002
2.	Discrete Mathematics and its Application	M. Sethumadhavan	Narosa Publication	2006
3.	**Water Management and Water Governance**	**Pandey**, A., **Mishra**, S.K., **Kansal**, M.L., **Singh**, R.D., **Singh**, V.P	Springer	2020
4.	Computational Fluid Dynamics	Dr. Suvanjan Bhattacharyya	Intech Open	ISBN 978-1-83968-248-3, 2021-22

Training Performed

Year	Title	Duration	Organized by
1996	Shapes Geometry Kernel Training	One Week	XOX Technologies, Bangalore
2001	Effective communication	One week	IIS Scientific Computing Ltd., New Delhi
2006	Pro/Engg. Trainee	Three days	Rolta India Ltd., Kolakata
2007	AutoDesk Educational solution	Two days	Comptech International, Ranchi.

2007	Set training	Three days	SAE India Southern Sectio
2008	Workshop in nonlinear finite	Three days	Deptt. of Computer Science and Engineering, IIT, Kharagpur

TECHNICAL SKILLS:

Hardware: Sun/ SGI and PCs
Software: Geometry Kernels (SHAPES,
ACIS) GITA UNIGRAPHICS, Pro/E
Operating System: HP-Unix, Window NT ,Windows 7(user level)
Languages: C, C++, VC++, OpenGL

(Kailash Jha)

Dept. of Mech. Engg.