


Brief Biodata

Name: Vinod Kumar

Designation:	Technical Officer	
DP No. and Name:	DP#1.02, Length, Dimension & Nano Metrology	
DU No. and Name:	DU#01, Physico-Mechanical Metrology Division	
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Date of Joining CSIR-NPL:	6 th July 2009	
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Research Area/ Interest

Length, Dimension and relevant parameters

Educational Qualifications

(Please write latest qualification first)

Degree	Subject	University/ Institute	Year
Diploma in Mech. Engg.	All subjects of Mech. Engg.	Pusa Polytechnic, Delhi	2004

Academic / Research Experience

Grade / Post	Institute	Duration		Research Field
		From	To	
Technical Officer	CSIR-NPL, India	2016	2021	Length & Dimension
Technical Assistant	CSIR-NPL, India	2009	2016	Length & Dimension

No. of Publications

No. of Publications in SCI Journals	No. of Publications in non-SCI Journals	No. of Publications in Conference Proceedings	Books	Total
Three	One	Nil	Nil	Four

Selected Publications

(i)	<i>A publication on "Measurement Uncertainty Evaluation using Monte Carlo Simulation for Newly Established Line Scale Calibration Facility at CSIR-NPLI" (MAPAN, Vol 34, issue 3, pages 325-331, year 2019).</i>
(ii)	<i>A publication on "comparative study was done for roundness using CMM and form tester with different filters/speed" (Elsevier, Vol 25, part 4, pages 821-826, year 2019).</i>
(iii)	<i>A publication on "Calibration of 1-D CMM artefacts: Step Gauges (EURAMET. LK-5.2016) for results and uncertainty (Metrologia, Vol 57, Number 1A, Tech. Suppl. 04002, year 2020).</i>
(iv)	<i>A publication on "Measurement uncertainty assessment of articulated arm coordinate measuring machine for length measurement errors using Monte Carlo simulation". Int J Adv Manuf Technol (2022). https://doi.org/10.1007/s00170-021-08416-1</i>

Patents----- Nil

Current Activities

(Not more than 100 words)

- Involved in the calibration of various length standards using Co-ordinate Measuring Machine (CMM) using contact and non- contact method (viz. calibration of step gauges, caliper checker, depth micro checkers, and various other length standards). Some of our key customers include: BHEL, HAL, DRDO, RRSL, NCCBM, CIPET, Air India, Tata Motors, Maruti Suzuki, Hero motocorp, Ultratech cement, Mitutoyo Corporation, and SAARC countries viz. Nepal, Bhutan, Sri Lanka, Bangladesh etc.
- Calibration of Secondary standard Meter bar, by camera (QVP) using non contact method.
- Onsite calibration of PLM, GBC, I-Checker, CMM etc. using laser interferometers and Step gauges.
- Active participation in Inter-comparisons with other NMI in length parameter to establish NPLI's calibration and measurement capability at par with other NMIs globally.
- Impart practical training/demonstration to trainees of Indian firms/labs and SAARC Nations.
- Maintenance /upadation of assigned quality documents with active participation in Quality audits of the section (Internal /External).

Honour(s)/Award(s)/ Fellowship(s)

Awarded by fellowship from JICA (Japan International Cooperation Society) to participate in training program in length metrology for 42 days in the year 2012 at National Institute of Metrology Thailand (NIMT),Thailand.

Contributions to AcSIR

Actively involved to impart practical training in length measuring instruments to the Post graduate diploma – Precision Measurement and Quality Control (PGD-PMQC) students, a course approved by AcSIR.

Membership of Professional Societies/ Institutions

Life Member of Metrology Society of India (MSI).

Any other Information

(Not more than 100 words)

- Actively participated in Peer review of length standard in year 2009 and 47 approved CMCs were published in KCDB in the year 2011.
- Participated in Bi-lateral comparison between NMIJ and NPLI titled “APMP.L-K5.2006.1” for 1000 mm step gauge in the year 2012-2013.
- Participated in international Key comparison in length titled “EURAMET.LK-5.2016” of Step gauge with NPL-UK as pilot lab and NMIs of other countries, using 3D-CMM for length measurement in which NPLI qualified all measurement results with $En(max)=0.57$ and $En (min)=0$. Measurement outcomes published in KCDB and Metrologia general (BIPM).
- Attended five days training program in Kawasaki, Japan for Coordinate Measuring Machine (CMM) in the year 2014.
- Member of Legal metrology project titled “Establishment of reference standard for length at RRSL, Bengaluru-India using Laser interferometer”.