February 5, 2019

Sub.: Summary of my qualifications (REF.: **Design Engineering** opportunities in your organization)

Dear Sir/Madam,

I, **Abhijit D. Dingare**, am serving as a Staff Mechanical Engineer within the Bengaluru Engineering Center for Applied Materials India Private Limited (**AMAT India**) and got your reference through my professional network. This letter is to express my interest in seeking mechanical engineering opportunities within any of your India-based teams. Based on my skills in subsystem-/system-level product development with an emphasis on design for excellence (**DFX**), I am confident that I would be a great complement to any of your hardware engineering teams.

A résumé that highlights my abilities and knowledge in **design engineering and product validation/testing** as applied to **automotive/heavy machinery applications** is enclosed. During close to six years of my experience with my last employer (*i.e. Navistar, Inc.*), I have handled multiple responsibilities in new/current product introduction (**NPI/CPI**), mainly catering to the performance integration, value innovation (**VA/VE**), manufacturing readiness and regulatory/volume certification at the end-product level. This skill-set has been well complemented through my recent project work at AMAT India wherein I am responsible for detailed design, analysis and implementation of **precision-manufactured components** refined to survive extreme operating conditions within the chemical process chambers for semiconductor applications.

Prior to this role, I have served on a specially formed cross-functional team (CFT) set up to undertake a wide-spanning **value-engineering** program aimed at quality improvement and cost reduction for a popular Navistar heavy-duty truck family. As a part of this program team, I was entrusted with harmonizing efforts of a team of test engineers, CAE analysts and technicians that would conduct iterative modal and interior noise frequency (FFT) analyses of several cabin-level vibration isolation (*cab mounting*) proposals to arrive at an optimized specification that would maintain current levels of ride quality as well as interior sound levels at a significantly reduced **material** (**BOM-level**) **cost**. Herein, I shouldered a responsibility of ensuring that the chosen configuration (*with a net **USD 532/unit savings***) invited no additional risk of a degraded driving comfort.

Further, having spent **close to 10 years** working in roles that spanned cradle-to-grave spectrum of a new product development **(NPDE) lifecycle**, I am confident that I can congenially partner with your engineering, quality and manufacturing teams to innovate win-win technical solutions guaranteed to achieve an end user's satisfaction. Secondly, I am available on an **immediate** basis and already domiciled in **Pune as well as Bengaluru** areas.

Thank you in advance for your time! I would appreciate an opportunity to meet and review my qualifications in more detail with your recruitment team.

Sincerely,

Abhijit Dingare
Bengaluru, KA 560066
+91-9763948743

ABHIJIT DINGARE

Whitefield, Bengaluru-560066 +91-9763948743 Abhijit.Dingare@yahoo.com

SUMMARY

Mechanical engineer with 10 years of experience in design integration, tolerance stack-up and physical validation; Quick learner with skills in risk assessment (FMEA/DVP/DFX), 360-degree problem solving and value engineering

KEY COMPETENCIES

New/Current Product Introduction (NPI/CPI) drawing upon CAD/CAE aids; Detailing of concept-level ideas with GD&T incl. manufacturability & assembly (DFM/A) considerations; Disciplined problem solving (Lean/Six-sigma) against field failures and manufacturability concerns (5 Whys/8D), cost-benefit value analysis (VA/VE) and supplier negotiations; CFT-based design assessment (Phase-Gate) reviews; Build planning, prototype testing and project management

SOFTWARE TOOLS

CAD & Tolerance Stack-up	**Data Analysis**	**Test & Measurements**	**CAE/PLM/PDM/ERP**
UG/NX, Vis VSA	Xfmea, Minitab	B&K PULSE	MSC.Marc, CFD-ACE+
Creo, Solid Edge	NI LabVIEW	HEAD ArtemiS	Teamcenter, MatrixOne
AutoCAD, Vis Mockup	MATLAB & Simulink	LMS Test.Lab	SAP, Oracle

INDUSTRY EXPERIENCE

APPLIED MATERIALS (AMAT) INDIA PVT. LTD.

AMAT India Engineering Center — Bengaluru, India

Staff Mechanical Engineer - Dielectric Systems and Modules (**DSM**) — Nov. 2017 - Present

Playing a multi-faceted role that covers concept-to-production range of design engineering services supporting NPI on special purpose machines (**SPMs**) catering to the dielectric deposition processes (DDP) in semiconductors industry

- Successfully implemented **gage inspections** to avert high temperature **cracking** of **ceramic** slit-valve **liners**
- Resolved an escalated **customer complaint** through a uniquely packaged **low-cost thermal insulation**
- Performed analyses to predict tolerance stack-up (**GD&T**) in assemblies and mitigated field issues (**8D, SPC**)
- Designed, modeled, drafted and released several critical process parts and kits within **NX/Teamcenter**
- Coordinated with global teams, interfaced with suppliers, shaped decisions by interpreting **simulations data**

NAVISTAR, INC.

Navistar Integrated Product Development Center — Chicago Area, IL (USA)

DFX Champion - Product Validation & Analysis (PV&A) — Nov. 2014 - Oct. 2017

Fulfilled versatile duties towards design robustness (**DFX**) initiative supporting Adv. Product Quality Planning (**APQP**)

- Authored/facilitated **Design/Process FMEA** and **DVP/Control Plan** roll-outs for important NPI/CPI programs
- Organized **110+ FMEA** CFT reviews and addressed the identified risks via suitable **design/validation actions**
- Captured high risks from **warranty history** and presented project status in Program/Executive Reviews
- Negotiated with vehicle integration and vendor teams to uphold test schedule committed for within the **DVP**
- Revised engineering work standards to mitigate process impediments and promote **reliability growth**

Test Lead - Product Integration & Validation (PI&V) — Sept. 2012 - Nov. 2014

Spearheaded testing function in a systems team for noise and vibration (NVH) attributes across all truck/bus programs

- **Validated** a long-haul chassis for optimized elastomeric isolation leading to a total of **USD 532/unit** cost outs
  - **Cost/mass reduction** proposal dictated thinner chassis (*9.5 mm to 7.1 mm*) and elimination of struts
- **Value-engineered** a heavy cab to allow implementation of a **proposal** translating into USD 6.5M/year savings
  - Performed **in-situ testing** with before/after interiors and prevented in-cab noise degradation
- **Metricized** door slam noise responses from competitors with a NI LabVIEW-based instrumentation
  - Verified a cheaper door damper material estimated to yield **USD 62.5K/year** bottom line improvement
- Muffled airflow noise by **3.5 dBA** with a resonator device that was developed in-house utilizing B&K PULSE
  - Devised solution against **driver dissatisfaction** from annoying pinging noise during compressor runs
- Designed experiments (**DoE**) and improved measurement techniques (**DAQ**) emphasizing automation
- Controlled (*post initial containment*) **100+ field/plant concerns** at root cause (**RCA**) generating **90+ reports**

Test Engineer (*on contract*), Truck Group — Jan. 2012 - Aug. 2012

Responsible for acoustic testing, proving ground upkeep and fleet maintenance (*following PDCA/5S practices*)

- **Homologated** various on-highway transport variants to meet pass-by/exterior noise targets/regulations
- Compiled lab procedures, published **measurement practices**, collated databases and guided technicians

CUMMINS, INC.

Cummins Technical Center — Columbus, IN (USA)

Project Engineer, Mid-range Diesel (MRD) Engines — Jan. 2008 - Jan. 2009

- **Coordinated** a cross-functional **Six Sigma** (DMAIC) team for a novel closed crankcase ventilation (**CCV**)
- Designed a composite valve/breather cover in **Pro/Engineer** and released drawings in MatrixOne PDM
- Championed **DVP&R**, led **VA/VE** and selected suppliers towards this **Tier 4 emissions** kit (*40K /year volume*)

MAHINDRA & MAHINDRA LTD.
Mahindra & Mahindra R&D Center Nashik, India
Junior Engineer, Automotive Sector Sept. 2004 - Aug. 2005

- Configured **FIE** (*Fuel Injection Equipment*) to achieve **BS-3 emission** compliance for an MRD **engine family**
- **Tested** such MRD-powered utility vehicles (*≥ 63 HP*) on dynos to prepare for **ARAI/VRDE certifications**
- Implemented electronic control for EGR (*Exhaust Gas Recirculation*) and **reduced** tailpipe **smoke by 35%**

Graduate Engineer Trainee (GET), Automotive Sector Aug. 2003 - Aug. 2004

- Initiated simplified suspensions for a **new** three-wheeled **vehicle platform** employing Unigraphics CAD/CAE
- Fabricated proof-of-concept (PoC) that is **23.4 kg lighter** and projected to slash BOM by **INR 2565/vehicle**

OTHER WORK EXPERIENCE (*as a student*)

UTC Aerospace Systems, Troy, OH (USA) Jan. 2006 - Dec. 2007

- Analyzed an aircraft wheel hub (*FEA in MSC Nastran*) and acquired **strain data** per experimental (**DoE**) plan
- Processed this test data in **Minitab** for statistical traits, and assessed **experimental-simulation correlation**
- Examined sensitivity, consulted sponsors, and established methodology for modeling of **critical bolted joints**

R&D Establishment (Engineers), Ministry of Defence, Pune, India Jul. 2002 - Jun. 2003

- Engineered a **test-rig** (*self-conceived using **AutoCAD***) to measure torsion properties of laminated bars
- Fabricated hardware with CNC Machining Centers and employing **TIG Welding** techniques
- Commissioned the setup, conducted pilot runs and proved agreement (**≤ 5%**) with **first principle** calculations

EDUCATION

The Ohio State University, USA (M.S., *Mechanical Engg.*, 2007, **GPA: 3.7/4.0**); *Focus*: Design and Manufacturing
Thesis: Advanced Analysis of Aircraft Bolted Joints (*sponsored by UTC Aerospace Systems company*)

Government College of Engineering, University of Pune, India (B.Eng., *Mechanical Engg.*, 2003, "**First Class**")
Project: Design, Development and Fabrication of Laminated Torsion Bar Test Rig (*sponsored by Government of India*)

PUBLICATIONS AND PRESENTATIONS

- An **Invention Disclosure** (IDF) published for "Temperature-independent Ceramic Sealing Hardware", Oct. 2018
- Dingare, A.D., "Design review on Tier 4 valve/breather cover as a fix for angularity issue", *Cummins Inc.*, Dec. 2008
- Ingle, R.B., Joshi, M.A., Dingare, A.D., and Gadre, S.S., "An experimental investigation of laminated rectangular torsion bar", *13th National Conference of Indian Society of Mechanical Engineers*, Roorkee, India, Dec. 2003
- Dingare, A.D., "Modern Packaging Technology", *Government College of Engineering*, Pune, India, May 2003
- Dingare, A.D., Gadre, S.S., "Mechatronic Systems", *TechTryst'03*, Jamshedpur, India, Feb. 2003. Won **first prize**

HONORS AND AWARDS

- "Cummins Mid-Range Engineering Extra Effort Award", *Cummins Inc.*, 2008
- "Forbes Marshall Outstanding Project Award" for baccalaureate engineering project, *University of Pune*, 2003
- "National Talent Search Scholarship", *Government of India*, 1997-2003

TRAINING AND CERTIFICATIONS

- Underwent a 5-day course on "**Vacuum Technology and Process Applications**" from *IIT-Kharagpur*, Nov. 2018
- Completed "**Fundamentals of GD&T**" certification through *ASME India Chapter*, 2017
- Accredited as an "Effective FMEA Facilitator", ReliaSoft Corporation, USA, 2017
- Achieved "**Lean Certification**" based on "An Efficient Field Concern Resolution Process", *Navistar, Inc.*, 2016
- Certified for "Design Robustness (**DFX**) Toolset", *University of Wisconsin-Madison*, USA, 2012
- Classes facilitated through *Navistar Inc.*, USA, 2012-15:
  - Practical Approach to Sound and Vibration Problem Solving
  - Fundamentals of Durability and Fatigue
  - Principles of **Six Sigma**
  - Apprentice Training in **Statistical Problem Solving** (SPS)
  - **Design Review**, Change Control Board (CCB) and Quality Improvement Process (QIP)
- Coursework undertaken at *Cummins Inc.*, USA, 2008:
  - Fundamentals of Reciprocating **Engine Design**
  - GD&T per **ASME Y14.5-1994 standard**
  - Design for (*Cost Effective*) Manufacturing and Assembly (**DFM/A**)
  - **Pro/ENGINEER** Practices and Procedures
  - Design for Die Casting
- Languages: English, German, Hindi, Marathi

References available upon request. Notice period in present organization is less than 15 days.