

**Dr. SUDARSHANA MUKHERJEE(GHOSH)**

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Technical Manager (Product Development)

Avery Dennison India Pvt. Ltd., Pune

Since April 2012 – Present (~6 Years)

Previous Organization      Dow Chemical Int. Pvt. Ltd., (2 Years)  
   IISER Pune (Research Associate) (1 Year)  
   Kyoto University (Post Doc) (1 Year)

Education                      University of Karlsruhe, Germany (Ph.D.)

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**Profile Summary:**

- Experienced Professional with 8+ years in R&D, presently leading the New Product Development platform translating voice of customer/consumer to design new products & enhance the product portfolio.
- Innovate to reduce costs, increase margins and differentiate as well grow in High value segments for Avery Dennison: Speciality, Durables and Graphics business.
- Continue growing in core business of Prime paper, film, and adhesives through innovation, Technology transfer, localizations, and supplier /Toller developments.
- Develop high performing teams.

**Core Strengths:**

**Innovation Leadership, Drive for Execution, Strategic focus, Portfolio Gap mapping, Technology Deployment, Integrating with Diverse teams, Six Sigma, ELS, Stage Gate Process, Problem Solving, Listening & Decision-making skills**

**Expertise:**

**Inorganic & Material Science(Functional Inorganic materials), Polymer & Adhesion Science, Pressure sensitive adhesive chemistries (Hot melt, water borne (emulsion), solvent borne), Structural Adhesive (Polyurethane, Epoxy Chemistries, Coatings or Primer systems, Analytical Chemistry, Root cause analysis.**

**Achievements & Awards:**

1. Drive Action & Execution 2018- Leading the New Product Introduction team, and worked with cross-functional team starting from Operations, Product Management, Supply Chain, and Finance to work as a team & deliver the New Product Scorecard of USD 7.0 M for the region.
2. Challenge Achievers 2017: Delivering Hard Disk Drive sealing Label for the Asean market worth 3M USD opportunity.
3. Leadership Excellence Award 2014 –new innovation product launching. Met the objectives in spite of challenges and persisted in terms of end user focus and collaborating across boundaries. Displayed ownership and accountability.
4. Innovation Award 2014: Souvenir for the new Idea submission.
5. Promoted to Technical Manager in October 2015.

## WORK EXPERIENCE

### AVERY DENNISON: April 2012 till present (> 6 years)

Significant contributions in Avery Dennison involve the Product Development & Commercialization of Pressure sensitive adhesive laminate for different labelling applications. Driven team who has contributed on below NPI (New Product Introduction) Platforms-

1. **Drive Cost out for the region** by localization, alternate substitution, diversification of vendors for Hot Melt Rubber Adhesives, Acrylic Adhesives, Paper and Film to achieve cost savings for the complete construction of Paper-Adhesive laminate or Film Adhesive laminate.
2. **Drive High Value Market Segments-**
  - (1) **Pharmaceuticals:** Developed Labelling PSA (pressure sensitive adhesive) solution for Blood Bag, Syringes, Cryogenics, Security solutions. IP protected. Worked on Solvent based Acrylic systems with high temperature resistance and low surface energy adhesion.  
*Patent: Breathable polypropylene based pressure sensitive adhesive coated sheet for blood bag application. US 20160319164 A1*
  - (2) **Food/HPC:** Re-closure & Removable Labels (worked on solvent and water based acrylic systems to achieve low tack and low adhesion with no zippy performance).
  - (3) **Lubricant and Drum labelling:** PSA system were developed which have high tack and high adhesion to withstand bottle shrinkage and temperature of hot filling applications. Developed solution for lube oil label market.
  - (4) **Durables-** Sealing Label for Electronic devices (worked on Solvent Acrylics with low outgassing and low contamination laminates with high tack and adhesion to hard disks to be used as sealing label): IP protected, worked on Labels for Mobile Phone Protective Film using Clear on Clear removable Adhesive, Labels for Automotive POP and appliances, Labels for Mobile battery applications.  
*Patent Application 201711036351: Low outgassing clean adhesive for electronic application (filed Oct 12, 2017)*
  - (5) **Beer & Beverage market:** Worked on various adhesive and top coats to enhance brand appearance, functional applications: High Opacity face/adhesive laminates.  
Water Resistant Top Coat: Patent Application AD201700016
  - (6) **Graphics-** New Product Line extensions such as Banners, Short life promotional PVC films, and perforated window films, Removable adhesive for Graphics, Signage, Automotive OEM's, Leverage global innovation. Deep Dive into the Motorbike decal segment developing Gasohol/Gasoline resistant solvent adhesive construction and PVC structure. Structure Property relationship of PVC to derive and apply to needed applications.
3. **Vendor/ Toller Development:** Worked with Several Regional and Global Adhesive, Film, Paper Suppliers to bring innovation or cost driven benefits. Developed local vendors for localization of differentiated or Cost competitive products.
4. **Technology Deployment:** Worked with Global teams to deploy new adhesive technologies and process to the South Asia region to achieve better performance needed for the respective countries in South Asia (Asean, Australia, New Zealand, India, South Africa) markets with cost savings for the region. Key aspect was to achieve the CTQ as per region and develop solution based on that.
5. **Technical Exposure** involved evaluating Chemical, mechanical, thermal properties of plastics, polymers, Coatings and composite materials using ASTM and ISO standards. Adhesive performance evaluation by shear, peel strength, loop tack, mandrel hold and rheology studies.
6. **Aligning Innovation to Business**
  - Screening ideas through Benefit & Effort Model, SWOT analysis, Resource mapping.

- Building Pipeline based on gaps and needs of the region.
- Benchmarking Products to achieve Good, Better, Best mapping and evaluate value proposition for customers.
- Developing Product Roadmaps based on internal and external innovations.
- Developing Cost to Performance maps
- Connect with Market Analysts to understand the growth of product categories in the respective regions, regional gaps, innovation gaps, business growth and direction.
- Collaborate with Finance & Product Management to understand AOP sales, business growth, and gaps in the portfolio.
- Work with Business through technical services and BDM teams and align with Product Leadership team to deliver for the markets and customers.

#### **Dow Chemical Int. Pvt. Ltd., Pune**

##### **Senior Analyst**

2010 – 2012 (2 years)

Problem solving, Trouble Shooting, Supporting Customer solutions, Problem handling, deep dive for root cause analysis using material science tools and expertise. Key Contribution was to support business and innovation through Characterization & analysis to generate data and convert data to meaningful results. I had worked to provide solution to customer and technical service team.

**Size Exclusion Chromatography/GPC, LC-MS, GC-MS, TGA, DSC, ICP-OES, Titrimetric methods, CHNSO Analysis**

**Project Management:** Six Sigma Green Belt Project Leader Certified.

**Innovation Ideas:** Driving several Innovation ideas in the area of adhesives and coatings. Developed and carried out proof of concept experiments to establish the ideas so as to obtain business support for them. Contributed to new ideas in the area of adhesives, coatings- 2 ICD

Filed ICD on idea for structural adhesive based on epoxy/silicone system for adhesion to metal substrates for automotive application.

Key Deliveries: Structural analysis of PU systems. Reaction monitoring studies of PU system by hydroxyl content and isocyanate content evaluation, also by FTIR, NMR, CHNS analysis. Studies on migration of slip additives based on type of PU system.

#### **ACCOMPLISHMENTS AT DOW**

- Nominated as “High Potential” candidate for 2011.
- Carat award for **leadership** in driving & establishing analytical protocols in supporting Dow Microbial Control business. “Demonstrated high energy, passion for science and commitment to deliver.”
- Carat award for **valuable contribution** in the solar solution project and the willingness to work in creating new opportunities for Dow.
- Completed project deliveries and documentation process- **5 internal DOW publications.**
- Carat award for **ownership of project milestones** from Formulation Science Team.

#### **Ph.D. & Post-Doctoral Work**

I have worked in the area of Organic-inorganic hybrid materials (Inorganic polymers - self-assembled by coordination of suitable metal ions/clusters with predesigned organic building blocks) for potential

applications in gas storage, separations, sensors, and catalysis. The work included correlation of structural features with physical properties and to design synthetic methods to prepare functional materials and to tune their structures and properties. Powder X-ray diffraction (PXRD), thermo gravimetric analysis (TGA), elemental analysis, vibrational spectroscopy (IR), studies of gas sorption, porosity measurements, etc, were my key studies. The synthesized materials were studied for chemical separation, gas storage, magnetism, and heterogeneous catalysis.

#### **ACADEMIC & PROFESSIONAL BACKGROUNDS:**

**2003** B.Sc. in Chemistry, **Banaras Hindu University (B.H.U.)**, Varanasi, India.

**2005** M.Sc. in Chemistry, **Indian Institute of Technology (IIT), Roorkee**, India.

**2008** PhD in Inorganic Chemistry under Prof. A. K. Powell, **University of Karlsruhe, Germany.**

**Thesis Title:** Control over Dimensionality and Magnetic Properties in Metal Complexes formed with Substituted Salicyl Ligands. (Synthesis, Characterization, functional studies for inorganic complexes and polymers).

Publications in several international journals (ACS, Elsevier, Supramolecular chemistry etc.)

**2008** Postdoctoral fellow in Prof. Susumu Kitagawa's group, **Kyoto University**, Japan.

**2009** Research/Teaching Associate at IISER Pune.

**2010 June** Lead Analyst at DOW Chemicals

**2011 -2012 March-** Senior Analyst at DOW Chemicals

**2012 April until now -** at Avery Dennison.

**2017-** Pursing 12 month, web-based certificate program of **The Adhesive & Sealant Council (ASC)**, The **Training Academy Certificate (TAC) Program** to excel in the adhesive and sealant industry.

#### **FELLOWSHIPS/HONOURS/AWARDS:**

- Quantum Effects in Molecular Nanomagnets (**QuEMolNa**), European Union research Fellowship.
- CSIR Fellowship, 2005 (Qualified, National Eligibility Test **NET-JRF/CSIR**).
- Qualified, Graduate Aptitude Test in Engineering (**GATE**) Examination in Chemistry (**95.87 percentile**) held by MHRD, India, 2005.
- Dr. A.N. Khosla Medal for obtaining **highest CGPA** in M.Sc /M.Tech (Science) courses at **IIT Roorkee**.
- Summer Project Fellowship from **INDIAN ACADEMY OF SCIENCES** at IIT Kanpur.
- Certificate of Merit for standing **First** in B.Sc (Chemistry Hons.) at BHU in 2003.