



## **An Executive Overview**

- **New Business Opportunities for the Plastics Industry**
- **Improving the Efficiency of Injection Molding Operation using Scientific Processing Techniques**

### **Presented by:**

- **Vishu Shah**
- **Suhas Kulkarni**

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*“If you want to compete on a global stage, you absolutely need to understand how to get a competitive edge”*

*- CEO, Fortune 500 Company.*

**Are you a plastics Industry executive interested in emerging technology?**

**Are you concerned about the Megatrends affecting plastics industry?**

**Do you know how to confront and overcome the challenges facing manufacturing sector of the economy?**

**Are you interested in learning about cutting edge technology that can separate your company from others?**

**Are you ready to redefine your business?**

**If so, you must take half a day out of your busy schedule to attend this informative session**

## **What will be covered?**

### **Part 1**

#### **New Business Opportunities**

The presentation will focus on the cutting edge emerging technologies that will be certain to create new opportunities for progressive entrepreneurs. We are at the threshold of the new beginning, a new era of materials technology beginning with Nano Materials technology, Biobased materials, bio absorbable materials, and newly developed alloys and composites. More research is being conducted and many opportunities exist in processing arena. Topics of major interest are Gas Assist molding, In-mold decoration, Multi-material molding, water assist molding, Micromolding, LSR molding, thin wall molding, etc. In terms of equipment, refinement continues with all electric molding machines, all electric blow molding machines, energy efficient auxiliary equipment, and robotics. Newly developed additive fabrication technology may revolutionize mold making industry in near future. Other novel technologies of interest are cell manufacturing, RFID, fuel cells, solar cells, memory plastics and many more.

The talk will also cover how companies can apply these new technologies and be successful by taking advantage of the current available knowledge base.

### **Part 2**

#### **Improving the Efficiency of an Injection Molding Operation using the Scientific Processing Techniques**

The molding process consists of several variables. Each of these variables has an effect not only on the final quality of the part but also on the efficiency of the production run. It is imperative that the molding process parameters be optimized to produce an acceptable part. The final goal in any molding operation must be to have (i) Shot to shot consistency, (ii) Cavity to Cavity consistency and (iii) Run to run consistency. A process that needs constant tweaking from shift to shift and/or run to run is an unstable and un-optimized process. Mold trial iterations not only cost a lot of money but also take away valuable time.

The class will cover an introduction to understanding what controls the Injection Molding process and the underlying scientific principles. It will discuss the important aspects of the factors required to develop a robust injection molding process, using the techniques of Scientific Molding and Scientific Processing. Scientific principles related to the complete molding process, from when the plastic pellet enters the facility to when it leaves as a finished product, will be discussed. Design of Experiments, Cavity Pressure Information and Rheological Shear imbalances specifically for Injection Molding will be covered. Correlation Studies between dimensions and cavity pressure will be discussed. Finally, a summary will outline the use and place of each of the Scientific Processing techniques, together with a road map to a successful operation of a molding operation.

## PRESENTERS



**Vishu H. Shah** President, Consultek Consulting Group  
Brea, CA USA

Vishu H. Shah is President of Consultek Consulting Group, a technical and management consulting firm. His 35 years of extensive practical experience in plastics Industry includes positions as president and cofounder of Performance Engineered products, Senior Plastics Engineer of Rain Bird Corporation and Nibco Inc. His areas of expertise include product design, processing, automation, materials, rapid prototyping, tooling, failure analysis and testing. His industry-related experience ranges from developing and training personnel, writing standard operating procedures, obtaining certifications, negotiating major contracts, and developing business plans for growth and expansion as a custom Injection Molder, Providing technical services to engineering and quality assurance staff in the area of material selection, product development, processing, tooling design, and inspection techniques, setting up and running PVC compounding operation, developing formulations, automation projects and serving as expert witness for legal community.

He is the author of *Handbook of Plastics Testing Technology* and has taught various plastics related subjects throughout his career. Currently, he is teaching classes covering, Plastics Theory and Practice, Scientific Molding, Product Design and Tooling at CAL POLY, Pomona. An active, involved professional, he is a senior member, president of So. Cal. SPE section and also a board member of SPI Western Moldmakers Division. Vishu is a graduate of UMass Lowell where he received his B.S. and M.S. degree in Plastics Engineering.



**Suhas Kulkarni**  
President, FIMMTECH, Vista, CA USA

### Biography:

- President of FIMMTECH, a consulting firm that specializes in injection molding services
- MS, Plastics Engineering Department, University of Massachusetts, Lowell
- BS, Polymer Engineering, University of Poona, India
- Extension faculty, University of California, San Diego
- Contract Faculty, University of Massachusetts, Lowell
- 17 years of hands on experience as a process engineer
- Area of Expertise - Scientific Processing for Injection Molding
- Developed a custom software called Nautilus for Injection Molding Process Development
- Presenter and author of various seminars and articles on Injection Molding

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For more information, please contact any one of the following  
Vishu Shah at [vishu@consultekusa.com](mailto:vishu@consultekusa.com) Website: [www.consultekusa.com](http://www.consultekusa.com)  
Sahas Kulkarni at [Sahas@fimmtech.com](mailto:Sahas@fimmtech.com) Website: [www.fimmtech.com](http://www.fimmtech.com)

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