CORPORATE PROFILE

VIKAS TOSHNIWAL
BUSINESS HEAD – FOOD & TECHNICAL ENZYMES
About us

- Pioneered enzyme production in India in 1958
- Leading producer of enzymes in Asia
- Exports to 45+ countries across 6 continents
- 68+ enzymes & probiotics, and 400+ products
- Safe, eco-friendly and biodegradable solutions for 25+ industries
- State-of-the-art manufacturing facilities that are ISO and WHO cGMP certified
History & Milestones

1958: India’s first enzyme manufacturing plant (for Papain) is pioneered by Mr. L.C. Rathi

1978: Rathi Papains Pvt. Ltd. was incorporated

1986: Specialty Enzymes & Biotechnologies, United States is set up

1989: Advanced Enzymes is incorporated (Originally under the name of Advanced Biochemicals Pvt. Ltd.)

1994: Commissioning of our 1st fermentation facility at Sinnar, Maharashtra

2008: Commissioning of 2nd fermentation facility at Pithampur, Madhya Pradesh

2016: Public listing on NSE, Acquired 70% Stakes in JC Biotech (India)

2017: Acquired 100% Stakes in Evoxx Technologies (Germany) Setup subsidiary Advanced Enzymes Malaysia Sdn Bhd
Awards & Recognition

2010: 1. Bio Excellence Award in Industrial Biotechnology – Govt. of Karnataka
2. Emerging India Awards in Life Science – Pharmaceuticals & Chemicals – ICICI Business Banking & CNBC TV18

2013: Fastest Growing Mid-Sized Business Awards – Inc. India

2014: Bio Excellence Awards in Industrial Biotechnology – Govt. of Karnataka

2016: 1. Best Nutraceutical Company of the Year
2. Biotech Leader of the Decade

2017: Awarded Best IPO of the year by IR Society
BUSINESS STRUCTURE
Group Structure

Advanced Enzyme Technologies Ltd. (AETL)

Advanced Bio-Agro Tech Ltd (60%)
- Animal Feed Products
- Agro Products
- Focus on South Asia

Advanced EnzyTech Solutions Ltd (100%)
- Eco-friendly Solutions
- Non-food industries
- Focus on South Asia

Advanced Enzymes USA Inc. (100%)
- Complementary Production Capabilities

JC Biotech Private Ltd (70%)

Advanced Enzymes (Malaysia) Sdn. Bhd. (80%)
- Complementary Production Capabilities

Advanced Enzymes Europe B.V. (100%)
- Complementary Production Capabilities

Advanced Supplementary Technologies Corp. (100%)
- Systemic enzyme supplements
- Targeted at Health-care professionals

Cal-India Foods International (100%)
- Business-to-Business
- Custom-formulated enzymes

Dynamic Enzymes, Inc. (100%)
- Enzyme supplements
- Retail focused

Enzyfuel Innovation, Inc. (100%)
- Biodiesel focused

Evoxx Technologies GmbH (100%)
- Complementary Production Capabilities

Enzyme Innovation, Inc. (100%)
- Marketing of Animal Nutrition & Bio-processing Solutions
- Focus on Americas
Business Segments

Advanced Enzymes

Healthcare & Nutrition
- Human Nutrition
  - API / Intermediate
  - Nutraceutical Blends
  - Probiotics
- Animal Nutrition
  - Poultry
  - Pigs
  - Probiotics

Processing Industries
- Food Processing
  - Baking
  - Brewing & Malting
  - Dairy & Cheese Processing
  - Fruit & Vegetable Processing
  - Oils & Fats
  - Protein Modification
  - Starch & Grain Processing
  - Wine Processing
  - Yeast Processing
  - Natural & Herbal Extraction
  - Specialty Applications
  - Probiotics
- Non-Food Processing
  - Bio-Catalysis
  - Bio-Fuels
  - Detergents & Cleaning Aids
  - Leather Processing
  - Pulp & Paper Processing
  - Textile Processing
  - Effluent Treatment
  - Agro Processing
GLOBAL PRESENCE
Global Footprint

International Presence

Manufacturing Facilities – 9

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R&D Centres - 7

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Offices - 4

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RESEARCH AND INNOVATION
Research & Development

- **Investments**: 6%+ of annual sales re-invested in R&D
- **Dedicated Team**: 100+ scientists, microbiologists, Biotechnologists, Food Technologists, Engineers
- **Fully Integrated Research**: end-to-end solutions, right from microbes to process development to application development
- **Innovation**: 28 registered patents, 4 patent applications submitted
- **Current Portfolio**: 68+ enzymes & probiotics and 400+ products
Application Expertise
Manufacturing Sites

- Fermentation, Recovery, Mixing & Blending facility at Sinnar, Maharashtra, India
- Fermentation, Recovery, Mixing & Blending facility at Pithampur, Madhya Pradesh, India
- Fermentation, Recovery, Mixing & Blending facility at Ongole, Andhra Pradesh, India
- Extraction & Recovery plant at Satpur, Maharashtra, India
- Mixing & Blending facility at Vashind, Maharashtra, India
- Two Mixing & Blending facilities at Chino, California, USA
- Two facilities at Monheim & Potsdam, Germany
Fermentation, Recovery, Mixing & Blending facility at Pithampur, Madhya Pradesh, India
WE OFFER SOLUTIONS FOR ...
Human Nutrition

All-natural Active Ingredients such as

- Serratiopeptidase
- Nattokinase
- Lactase
- Fungal Diastase
- Alpha Galactosidase
- Hemicellulase
- Fungal Lipase
- Various other nutritional blends and combinations
- Probiotics
Human Nutrition

Customized Blends for . . . .

- Improved Lactose Tolerance
- Improved Gluten Tolerance
- Improved Digestion
- Reduced Flatulence
- Faster Healing
- Immunity Enhancement
- Better Circulatory Health
- Weight Management
Animal Nutrition

- Improving FCR & Gut Health in Poultry & Pigs
- Galacto-mannan Hydrolysis and In-situ Production of MOS
- Breakdown of α-galactosides and Release of Energy
- Reducing Intestinal Viscosity & NSP Digestion
- Protein & Peptide Breakdown and Release of Vital Amino Acids
- Release of Entrapped Phosphorus, Calcium and Other Vital Minerals from Feed Ingredients
Food Processing

Baking

- Prolonged Softness / Increased Shelf life
- Dough Handling & Volume Increase
- Improved Whiteness / Finer Crumb Structure
- Replacing Chemicals & Hazardous Oxidizers
- Increasing Volume in High Fiber Bread
- Sugar Replacement / Improved Crust Color
- Gluten Correction in Biscuits & Wafers
- Egg Reduction in Cakes
Food Processing

Starch & Grain Processing

- Starch Separation & Viscosity Reduction (NSP Hydrolysis)
- Gluten Hydrolysis
- Medium / Low Temperature Liquefaction & Dextrinization
- High Maltose Syrup Production
- Fermentation Enhancement & Increased FAN content
Food Processing

Brewing & Malting

- Barley Steeping & Germination
- Improving Filtration
- Higher Yields from Under-modified Malts
- Increasing Brew House Efficiency
- “Low-Carb” Beer (Attenuation Control)
- “Gluten-Free” Beer
- Chill Haze Prevention / Beer Stabilization
- Barley Brewing
Food Processing

Fruit & Vegetable Processing

- Extraction & Depectinization (Clarification) of Apple, Pear and Tropical Fruit Juices
- Maceration, Color Extraction & Depectinization of Grapes & Berries
- Color Extraction of Beet Root & Carrot
- Cloud Stability of Juices
- Starch Haze Clarification of Juices
- Vegetable Juice & Oil Extraction
- Fruit & Vegetable Firming
- Improving Throughput and Membrane Cleaning
Food Processing

Wine Processing

- Settling & Clarification of all Types of Grape Musts & Wines
- Elimination of Wine Haze
- Red Grape Skin Maceration & Improving Colour Stability
- White Grape Skin Maceration & Increasing Fruity Flavour
- Improving Filtration Efficiency & Wine Stabilization
Food Processing

Dairy & Cheese Processing

- Microbial Coagulant for Cheese Making
- Lactase for Whey Processing / Production of Ice creams & Yogurts
- Flavour Enhancement
- Firming of Fruits in Yogurts
Food Processing

Oils & Fats Modification

- Plastic Fats like Margarines, Shortenings, etc and Trans-free Fats
- Structured Lipids like - Cocoa Butter Equivalents, Human Milk-Fat Substitutes, Dietary Fats etc
- Omega 3 (EPA / DHA) Concentrates
- Monoglycerides & Diglycerides
- Free Fatty Acids Reduction in Edible Oils
- Utilization of Waste Oils to Produce Biodiesel
Food Processing

Protein Modification

- Meat Tenderization
- Fish Protein Hydrolysis / Fish & Sea Food Processing
- Gluten-free Products
- Production / Enhancement of Savory Flavours
- Hydrolysis of Vegetable Proteins
- Amino Acid Production
- Debittering of Peptides
Food Processing

Yeast Processing

- Protein Endo-Hydrolysis (Yeast cell-wall breakdown)
- Degradation of Yeast Beta-glucans
- Glutamic Acid Release
- Guanosine Monophosphate (GMP) Release
Food Processing

Specialty Application

- Tea Fermentation
- Herbal Extraction
- Oil Extraction
- Natural Color Extraction
- Flavour Enhancement
- Natural & Herbal Extraction
Non-Food Processing

Bio-Catalysis

- Chiral Drug Intermediates
- Cosmetic Esters
- Flavour / Perfume Esters
- Fine Chemical Synthesis
- Emulsifiers
- Polymers
Non-Food Processing

Biodiesel

- Improving Yields with a High Rate of Reaction
- Increasing Purity Level
- Milder Reaction Conditions
- Energy Saving
- Reducing Environmental Pollution
Non-Food Processing

Cellulosic Ethanol
- Maximizing Output from Various Types of Lignocellulosic Biomass
- Complete Breakdown of Cellulosic Oligomers into Glucose Monomers
- Increasing Availability of C6 Sugars
Non-Food Processing

Other industries: Leather / Detergents & Cleaning Aids

- Bating
- Lime & Sulphide-free Finishing of Leather
- Degreasing
- Laundry Detergents
- Dish-washing Detergents
- I & I Detergents
- Effluent Treatment
Non-Food Processing

Pulp & Paper

- Deinking of Recycled Paper
- Bio-refining of Pulp
- Bleach Boosting in Virgin Pulp
- Stickies Control
- Pitch Control
- Starch Modification
Non-Food Processing

Textile Processing

- Desizing
- Bio-fading
- Anti-backstaining
- Bio-polishing
- Bio-scouring
- Peroxide Killing
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THANK YOU!