นิยามกรอบการวิจัยตามยุทธศาสตร์ มทร.ธัญบุรี

1. **Agro-food Innovation**: Smart Farming, Bio-Agriculture, Food Safety, Value-Added Processing, Agricultural-Based Materials, Functional Foods, BCG Model, AI, Innovative Materials, and Carbon Innovation
   - Smart Farming and Precision Agriculture
   - Bio-agriculture and sustainable farming practices
   - Food safety and quality assurance technologies
   - Value-added food processing and agro-industrial innovation
   - Agricultural waste utilization for innovative materials
   - Functional foods and nutraceuticals
   - BCG (Bio-Circular-Green) Economy Model for agriculture and food industries
   - AI-driven solutions in agriculture and food production
   - Innovative materials derived from agricultural products
   - Carbon Innovation for sustainable agro-food systems
   - Blockchain technology for traceability in agro-food supply chains
   - IoT and automation in food production and supply chain management
   - Alternative proteins and plant-based food innovations
   - Biodegradable mulch materials for agriculture application,

2. **Logistic Innovation:** Aviation, Rail Systems, Biodegradable Material Innovations, AI, and Carbon Innovation
   - Aerospace and aviation technology
   - Rail transportation systems and smart railway innovations
   - Biodegradable material innovations for sustainable logistics
   - Artificial Intelligence (AI) in logistics and supply chain management
   - Carbon Innovation in transportation and logistics
   - Autonomous and electric vehicle logistics
   - Smart warehousing and automation in logistics
   - Green logistics and sustainable supply chain solutions
   - Blockchain for logistics and freight management
   - Hyperloop and next-generation transportation systems
   - Railway Operations and Transportation
   - High-Speed Rail,
   - Safety and Risk assessment,
   - Smart Logistics,
   - AI technology with transport,
   - Green Industry,
   - Safety Management,
   - Transportation,
   - EV,

- Green Industry,
- Resource Recovery,
- BCG Model

Manufacturer
- Smart Machine Design
- Green Industry
- Renewable Energy
- Waste Treatment and Reuse
- Resource Recovery
- Safety Management
- Data/IT Management
- Computer Program Development
- Safety Management
- Smart Electricity System
- Civil/Structure Engineering
- Green Building Design

Transportation
- EV
- Low Carbon Emission
- Renewable Energy
- Vehicle Maintenance
- Vehicle Innovation
- IT/IoT Transportation

Warehouse and Storing
- Safety Management
- Green Building Design
- Civil/Structure Engineering
- Data/IT/IoT Management
- Energy Saving
- Smart Electricity System
- Storage System

Picking
- Data/IT Management
- Computer Program Development

Packing
- Biodegradable Material
- ECO Packaging Design
- Recycle
- Plant-Based
- Packaging Technology and Materials

Receiving

- Data/IT/IoT Management
- Machine Transportation Design
- Computer Program Development

Checking

- Service
- Data/IT Management
- Computer Program Development

Cross-docking

- Service
- Data/IT Management
- Computer Program Development

Shipping

- EV
- Low Carbon Emission
- Renewable Energy
- Vehicle Maintenance
- Vehicle Innovation
- IT/IoT Transportation

Returns

- Service
- Data/IT Management
- Computer Program Development

3 **Digital Economy: Cloud Automation, Big Data, E-Commerce, ICT, AI, Innovative Materials, Carbon Innovation**

- Artificial Intelligence (AI), Deep Learning, Robotics, Smart City, Smart Healthcare, Smart Farming
- Big Data, Data Science, and Data Engineering
- Logistics technology and E-Commerce business platforms
- High-speed communication technology: 5G, 6G
- Cybersecurity technology
- Quantum computing technology
- Blockchain technology
- Virtual Reality (VR) and Augmented Reality (AR) technologies
- 3D Printing technology
- Machine Learning technology
- Drone technology
- Operation Control Center (OCC)
- Deep Learning
- Image Processing

4   **4. Tourism & Creative Innovation**

Urban Development Models for Value Creation in Arts, Culture, AI, Innovative Materials, and Carbon Innovation
- Learning and preserving language, literature, and folklore
- English language and cultural promotion for the service industry
- Tourism and hospitality management
- Service industry development
- Public administration, policy, and governance
- Workforce development in communication for the service industry
- Sustainable social and environmental development models
- Innovative creative products from tourism and hospitality services
- Aesthetic

5   **Health and Wellness**

Comprehensive well-being encompassing physical, emotional, intellectual, and social aspects.
- Design for performance enhancement
- Design for quality of life
- Design for well-being
- Product design for wellness
- Health-promoting recreational equipment
- Health products and dietary supplements
- Packaging design to promote health awareness
- Graphic packaging design for best practice guidelines
- Health-oriented product design
- Creative inventions for better health
- Art therapy: Creating art and aesthetics to enhance emotional and social well-being
- Balancing life through art
- Innovations for well-being and social problem-solving
- Innovative herbal and health food solutions
- Health and beauty products
- Innovative medical materials