

## COMPLETED PROJECTS

Title **Polymer Composites (GFRP) Sports Car Body Panel (Vot: 61727)**  
 From 1995  
 To 1996  
 Position held Project Leader  
 Funding Institution RMC UTM  
 Grant Amount (RM) 50,000  
 Major output Sports Car Prototype

Title **Solar Race Vehicle**  
 From 1995  
 To 2001 (Completed)  
 Position held Project Team Member  
 Funding Institution RMC UTM (Flagship)  
 Grant Amount (RM) 300,000  
 Major output Solar vehicle to race in the World Solar Challenge, Australia 1996

Title **Engineering Design Data of Advanced Polymer Composites (Vot: 71219)**  
 From 1997  
 To 1999 (Completed)  
 Position held Project Leader  
 Funding Institution RMC UTM  
 Grant Amount (RM) 20,000  
 Major output Composites Database for Development of Solar Race Car and FORMULA-M Body Construction

Title **Composites Bicycle Design (Vot: 71368)**  
 From 1988  
 To 1999  
 Position held Team Member  
 Funding Institution RMC UTM  
 Grant Amount (RM) 20,000  
 Major output Design and Prototype (Mock-up Model)

Title **Development of Innovative Use of Fibre Reinforced Plastic in Construction Industry (Vot: 72134)**  
 From 1999  
 To 2000 (Completed)  
 Position held Project Team Member  
 Funding Institution IRPA (Science Fund)  
 Grant Amount (RM) 659,300  
 Major output Pultrusion machine design/Database for Pultruded FRP Composites and Publication of papers

Title **Development of Torpedo Prototype (Vot: 71220)**  
 From 1998  
 To 1999 (Completed)  
 Position held Project Team Member  
 Funding Institution RMC UTM  
 Grant Amount (RM) 30,000  
 Major output Torpedo prototype/Publication of papers

Title **Behaviour of Beams Strengthened with CFRP Composites (Vot: 72272)**  
From 1999  
To 2001 (Completed)  
Position held Project Team Member  
Funding Institution IRPA (Science Fund)  
Grant Amount (RM) 94,240  
Major output MSc students/Publication of papers

Title **Solar Vehicle (2<sup>nd</sup> Generation)**  
From 1999  
To 2003 (Completed)  
Position held Project Team Member  
Funding Institution IRPA (Science Fund)  
Grant Amount (RM) 1,000,000  
Major output World Solar Car Championship, Australia 2001

Title **Design and Optimisation of Solar Photovoltaic System for Semi-Recumbent Aerodynamic Solar Powered Cycle (Vot: 72344)**  
From 2000  
To 2002 (Completed)  
Position held Project Team Member  
Funding Institution IRPA (Science Fund)  
Grant Amount (RM) 131,100  
Major output World Solar Race Australia 2001/Solar Bike Race, USA 2002

Title **Performance of GFRP Plates as Strengthening Material for Reinforced Concrete Beams (Vot: 71688)**  
From 2000  
To 2001 (Completed)  
Position held Project Team Member  
Funding Institution IRPA (Science Fund)  
Grant Amount (RM) 100,000  
Major output Publication of papers

Title **The Study of Bonding Behaviour Between Fibre Reinforced Polymer Composite Plate and Concrete Prism Under Tropical Climate (Vot: 71688)**  
From 2002  
To 2003 (Completed)  
Position held Project Team Member  
Funding Institution RMC UTM  
Grant Amount (RM) 30,000  
Major output Publication of papers/PhD Thesis

Title **Long-term Performance of Eternally Bonded Fibre Reinforced Polymer Composites (FRP) as Strengthening Material for Reinforced Concrete Beam (Vot: 74180)**  
From 2003  
To 2006 (Completed)  
Position held Project Team Member  
Funding Institution IRPA (Science Fund)  
Grant Amount (RM) 179,000  
Major output Publication of papers/MSc and PhD Thesis

Title **The Study of Composites Based Honeycomb Structure for Road Vehicle (Vot: 75072)**  
From 2004  
To 2004 (Completed)  
Position held Project Team Member  
Funding Institution RMC UTM  
Grant Amount (RM) 20,000  
Major output Database for CFRP Composites Road Vehicle and Publication paper

Title **GFRP Composite Footbridge – UTM Experience (Vot: 73045)**  
From 2004  
To 2004 (Completed)  
Position held Project Team Member (PUSKOM/UTM special project)  
Funding Institution RMC UTM  
Grant Amount (RM) 70,000  
Major output GFRP Bridge Prototype UTM and Publication paper

Title **Design, Fabrication and Commercialization of Trash Trap Made of GFRP – Phase 1**  
From 2005  
To 2006  
Position held Project Team Member  
Funding Institution RMC UTM  
Grant Amount (RM) 50,000  
Major output Publication of paper/Prototype 1<sup>st</sup> Generation

Title **Database for Fibre Reinforced Polymer Products and Application in Malaysia**  
From 2005  
To 2006  
Position held Project Team Member  
Funding Institution CIDB  
Grant Amount (RM) 70,000  
Major output Publication of papers

Title **Investigation of the Hydraulic Characteristics for Potable Rubbish and Sediment Trap (FRP Cage Design) (Vot: 78105)**  
From 2007  
To 2008  
Position held Project Team Member  
Funding Institution RMC UTM  
Grant Amount (RM) 40,000  
Major output GFRP Trash Trap Design and Prototypes of 2<sup>nd</sup>/3<sup>rd</sup> Generation/Ready for Commercialisation (ICC/Atostech Fibreglass Sdn. Bhd.)

Title **Fundamental Bonding Characteristics of Thermoplastic Resin as Adhesive for the CFRP-Concrete Strengthening System (Vot: 78023)**  
From 2007  
To 2008  
Position held Project Team Member  
Funding Institution RMC UTM  
Grant Amount (RM) 50,000  
Major output Publication of papers

Title **Mechanical Properties of Hybrid Glass Fibre Recyclate/ Montmorillonite Nanofiller Reinforced Polymer Composites (Vot: 09J63)**  
From 2014  
To 2015  
Position held Project Leader  
Funding Institution RMC UTM (Tier 2)  
Grant Amount (RM) 30,804  
Major output Publication of papers

Title **Natural Fibre Reinforced Epoxy Composites Poles for Marine Yacht Structure**  
From 2014  
To 2015  
Position held Project Team Member  
Funding Institution RMC UTM (Tier 1)  
Grant Amount (RM) 41,606  
Major output Publication of papers

Title **Structural and Durability Performance of Steel/CFRP Bonding System under Tropical Climate (Vot: 07H32)**  
From 2014  
To 2016  
Position held Project Team Member  
Funding Institution RMC UTM (Tier 1)  
Grant Amount (RM) 40,000  
Major output Publication of papers/PhD Student

Title **Sustainable Hydrokinetic Renewable Energy (SHRE) - Hydrokinetic Turbine Energy Transmisson System (HTETS) (Vot: 4B163)**  
From 2014  
To 2016  
Position held Project Leader  
Funding Institution JKR Research Malaysia/KETHHA  
Grant Amount (RM) 225,000  
Major output Prototype (on-going) and Publication of papers

Title **Development of Advanced Disaster Relief Utility Vehicle**  
From 2015  
To 2016  
Position held Project Team Member  
Funding Institution RMC UTM (Flagship)  
Grant Amount (RM) 450,000  
Major output ADRUV Prototype/Publication of papers

Title **Sustainable Biomimetics Design of Polymer Composite Rotor Shaft for Hydrokinetic Application (Vot: 10H22)**  
From 2015  
To 2016  
Position held Project Leader  
Funding Institution RMC UTM (Tier 1)  
Grant Amount (RM) 48,750  
Major output Publication of papers

Title **Development of Lightweight Bullet-Proof Panel using Hybrid Composites**  
From 2015  
To 2016  
Position held Project Team Member  
Funding Institution RMC UTM (Tier 1)  
Grant Amount (RM) 50,000  
Major output Publication of papers