

Developing an International Face of Fusion International Projects

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[Academic Profile](#)



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FUSION IN ACTION

Starting Local: Activity in Renewable Energy & Renewable Technology

Forming Renewable Energy & Renewable Technology (RERT) interest group

[Poole Tidal Energy Partnership:](#)

Zulfiqar Khan as founding Director

'Aims to harness the power of the tide in the harbour, and the spirit of the community in a manner that is economically sustainable, is sensitive to the local environment and contributes to the vision for clean energy'





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PTEP Supporters:

[Transition Town Poole](#)

[Borough of Poole](#)

[Poole Harbour Commissioners](#)

[East Dorset Friends of the Earth](#)

[Carter Community School](#)

[Association of Sustainability Practitioners](#)

[Dorset Energy Advice Centre](#)

[National Trust](#)

[Business Link](#)

[Dorset Agenda 21](#), [Rockley Park](#) - Caravan Holiday Park

2 Poole MPs

[Poole Housing Partnership](#) - providing social housing across the area

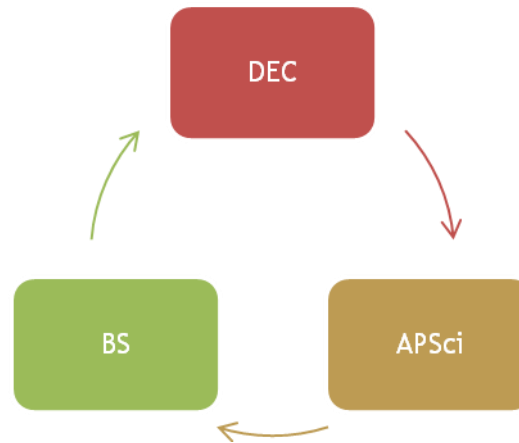
[Bournemouth University](#) - Green Knowledge Economy Centre; Sustainable Design Research Centre; School of Design, Engineering and Computing,

[Public Engagement \(PR Video\)](#) (please click on the link watch PR video, password is: ptep)

Timeline of International Collaboration



Fusion at BU - Renewable Energy & Renewable Technology (RERT)



DEC – ApSci –BS Fusion Award – (£8,320)



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FUSION IN ACTION: Research

1: EU INTERREG IV A Programme (£111,331)

The definitive name of the project is: **GRECC (GReen Energy Channel Cluster)**

**PHYSICAL MODELING AND DIAGNOSTICS OF MARINE TURBINES/
MODELISATION PHYSIQUE ET DIAGNOSTIC DES HYDROLIENNES**

Partenaires/ Partners:

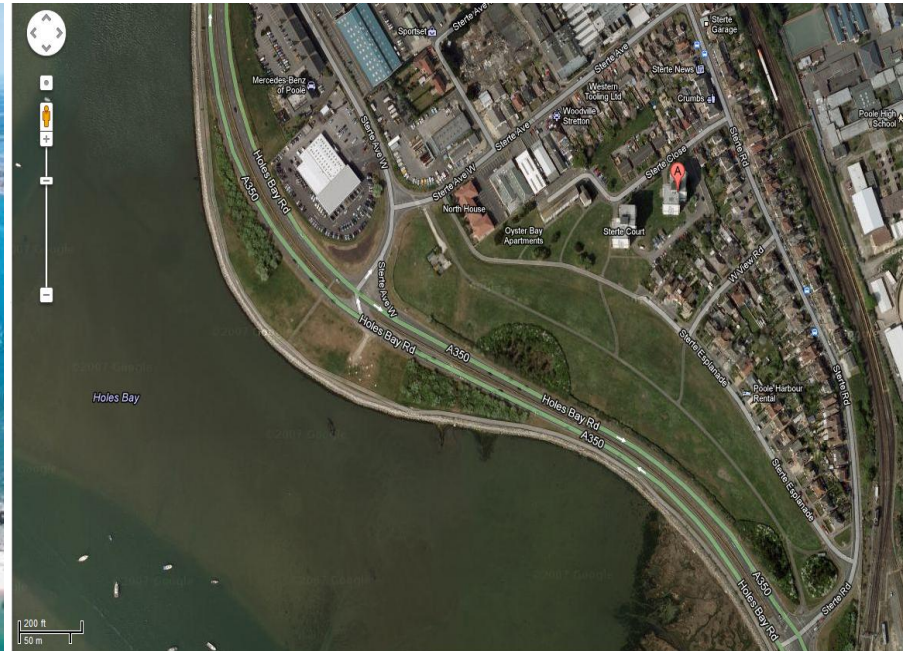
France	England
CNRS	University of Brighton
Université du Havre	Bournemouth University
Université de Rouen	University of Plymouth
INSA de Rouen	University of Swansea
Université de Cane-Basse Normandie	University of Huddersfield
Université de Bretagne Occidentale	

2: Energy Company Fully Funded PhD (£48,000): Oct 2012

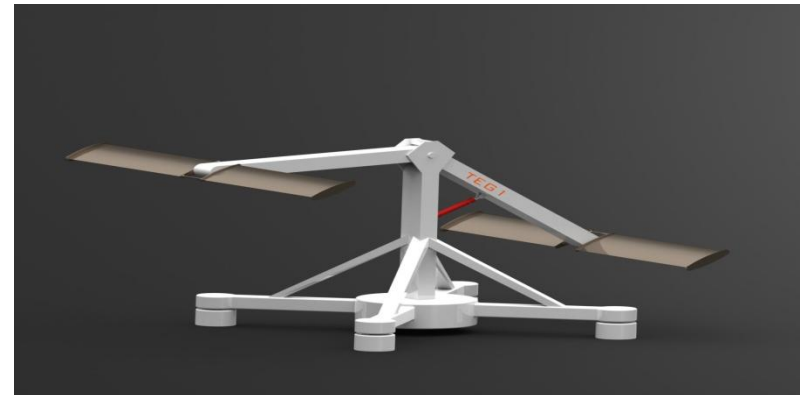
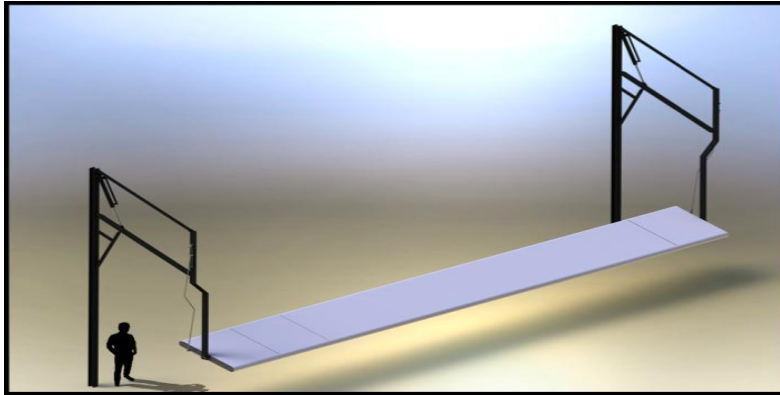
3: Schaeffler match funded PhD (£24,000): Feb 2013

4: AmpereWave intent to part fund (£24,000): Mar 2013

FUSION IN ACTION: Education



Design Engineering Level I (2nd Year UG Students) Live Projects Design of a non-rotary tidal turbine [DE 2 cohort]

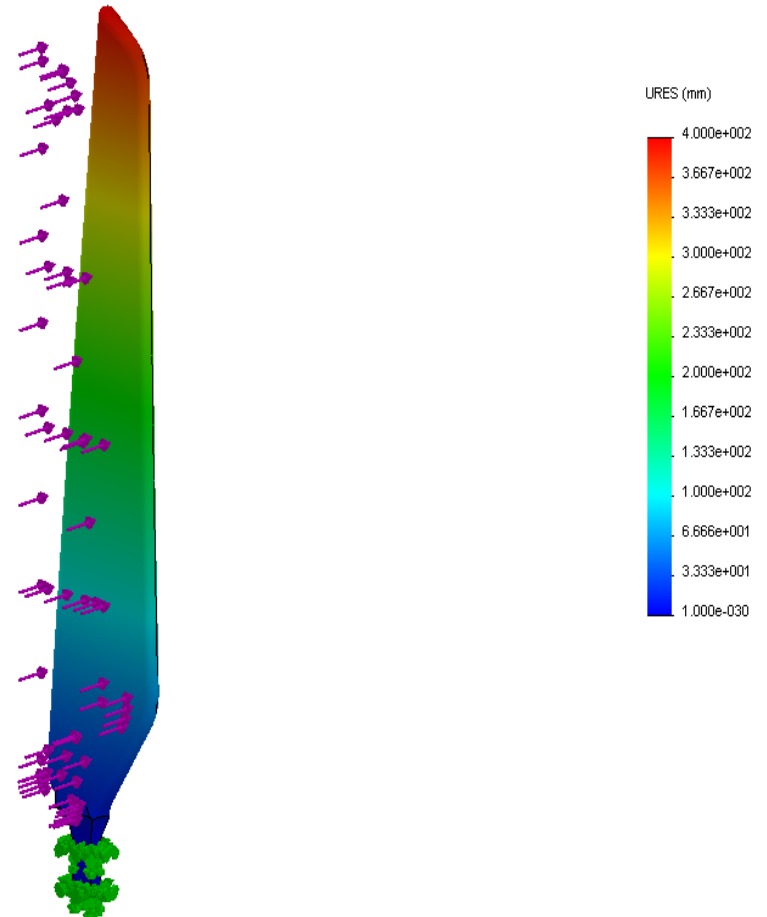
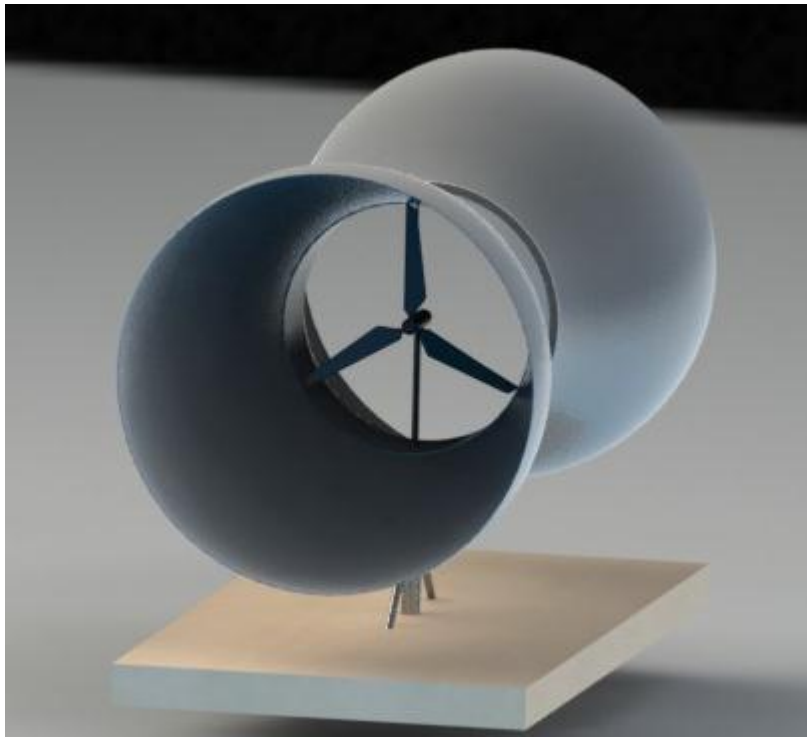




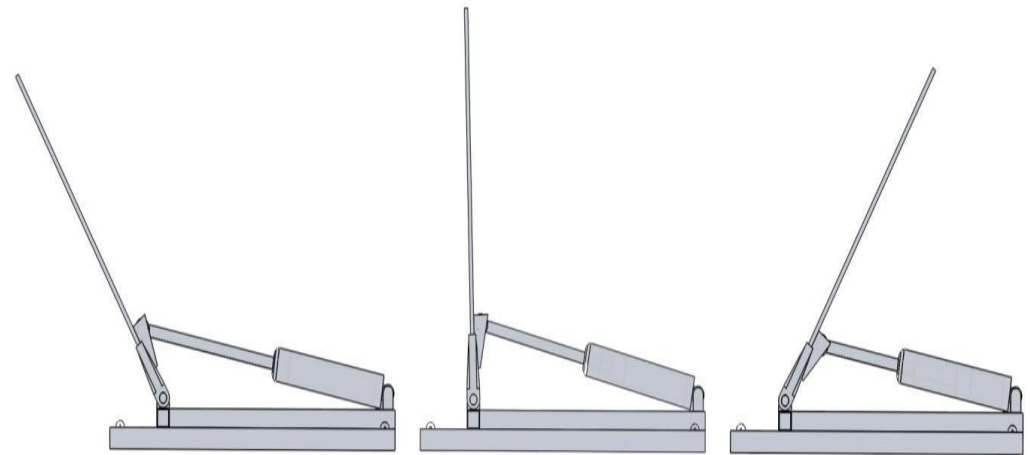
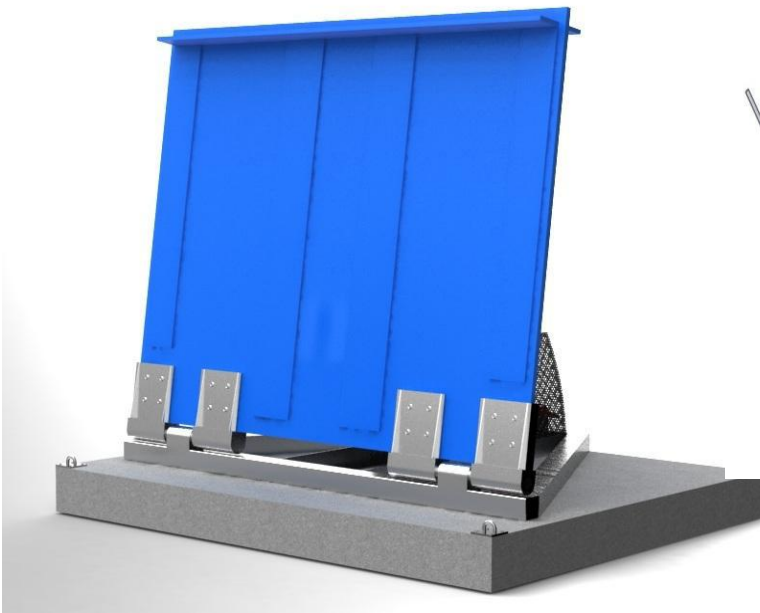
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Student Led Community Interest Projects

Design Engineering Level H (Final Year UG Students) Live Projects
Design of a rotary tidal turbine [Z Khan, J Thomas]

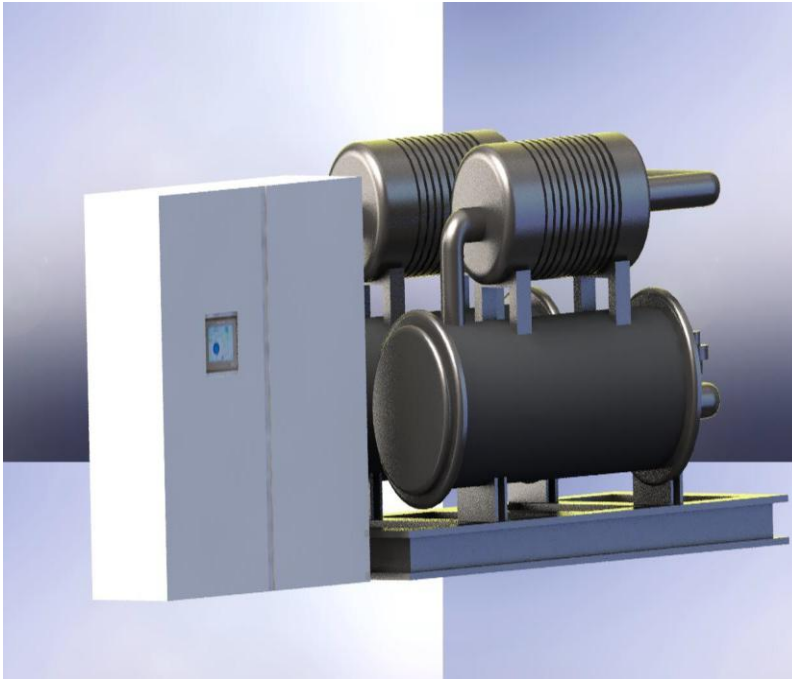


Design Engineering Level H (Final Year UG Students) Live Projects
Design of a non-rotary turbine [Z Khan, S Willington]



Students Led Community Interest Projects

Design Engineering Level H (Final Year UG Students) Live Projects
Design of a heat pump [Z Khan, T Caroprese]





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Fusion Bid Success:

June 2012

PES IT VP visit/activity:

Nov-Dec 2012

Education

DE 1 & 4:

Design Methods and Projects (20 credit unit)

AT&I (40 credit unit)

Research

Bid development

Joint Publications



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Fusion Bid Success:
June 2012

ZK visit to PESIT:
Feb 2013

Education
Final Year Mechanical Engineering

Research
Bid development
Joint Publications





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Outcomes:

Bids

Project Title	Start Date	End Date	Organisation	PI	Income
Collaborative links / networks TECHNO III	15/07/2013	26/07/2013	JASMINE Erasmus Mundus	ZK	£77,092
Advances in Engineering Design and their Industrial Applications	15/07/2013	26/07/2013	Conference delegates	ZK	£14,141
Technical Education Quality Improvement Programme (TEQIP) bid	01/06/2013	31/05/2016	The World Bank	ZK	£126,341
Development of Novel Coatings for Aerospace and Engineering Applications by Environmentally Friendly Advanced Spray Techniques	01/01/2014	31/12/2016	EPSRC	ZK	£254,753



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Outcomes:

Publications

Pre Fusion Fund

1. Ramesh, C. S., Shreeshail, M. L., Gudi, H. R., & Khan, Z. (2012, September 23). Air jet Erosion Wear behavior of Al6061-SiC-Carbon fibre Hybrid Composite. In *15th International Conference on Advances in Materials and Processing Technologies (AMPT 2012)*, 2012. Wollongong, Australia. Retrieved from <http://ampt2012.org/index.cfm>
2. Ramesh, C. S., Khan, S., Khan, Z., & Sridhar, K. S. (2012, September 23). Slurry Erosive Wear Behavior of Hot Extruded Al6061-Si₃N₄ Composite. In *15th International Conference on Advances in Materials and Processing Technologies (AMPT 2012)*, 2012. Wollongong, Australia. Retrieved from <http://ampt2012.org/index.cfm>
3. Khan, Z. A., Chinnakurli, R., & Ahamed, A. (2011). Study on Slurry Erosive Wear Behaviour of Al 6063-TiB₂ In Situ Composites. In *STLE 2012 Annual Meeting & Exhibition*. St Louis: STLE. Retrieved from <http://www.stle.org/events/annual/default.aspx>
4. Khan, Z. A., Chinnakurli, R., Mp, H., & Ks, N. (2011). Development of Nickel-CNT Electro Composites. In *STLE 2012 Annual Meeting and Exhibition*. St Louis: STLE. Retrieved from <http://www.stle.org/events/annual/default.aspx>



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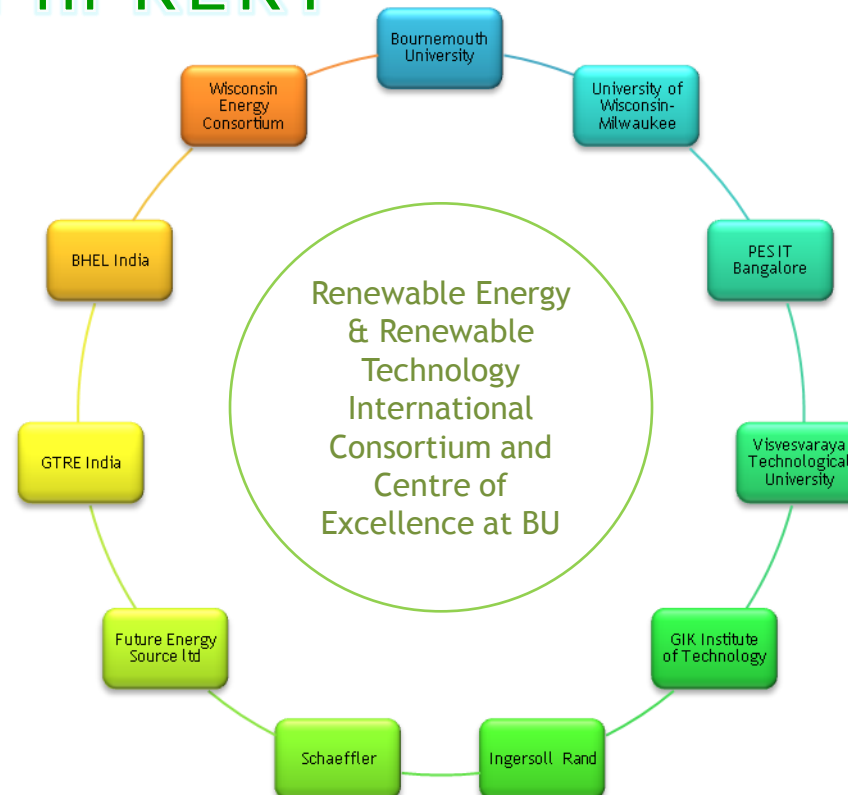
Outcomes: Publications: [Post Fusion Fund](#)

1. Chinnakurli, R., Adarsha, H., Pramod, S., & Khan, Z. (2013). Tribological Characteristics of Innovative Al6061-Carbon Fibre Rod Metal Matrix Composites. *Materials and Design, Volume 50* (September 2013), 597-605. doi:[10.1016/j.matdes.2013.03.031](https://doi.org/10.1016/j.matdes.2013.03.031)
2. Wilton-Smith, K., Khan, Z., Saeed, A., & Hadfield, M. (2013). Accelerated Corrosion tests of Waste-gated Turbocharger's Adjustable and Fixed End Links. In *11th International Conference on Surface Effects and Contact Mechanics*. Siena, Italy: Wessex Institute of Technology, UK. Retrieved from <http://www.wessex.ac.uk/13-conferences/contact-and-surface-2013.html>
3. Denham, L., & Khan, Z. (2013). The prevention of corrosion and corrosion stress cracking on structural members of fixed deep sea oil rigs. *The Journal of Corrosion Science and Engineering, 16*, 1-13. Retrieved from <http://www.jcse.org/>
4. Dobson, P., & Khan, Z. (2013). Design considerations for carbon steel pipes materials' selection applied in fossil powered plants subjected to wet-steam flow accelerated- corrosion review paper. *Journal of Corrosion Science and Engineering, 16*, 1-13. Retrieved from <http://www.scopus.com/source/sourceInfo.url?sourceId=12326&origin=recordpage>
5. Ramesh, C. S., Prasad, T. B., & Khan, Z. (2013). The Effects of TBC on Diesel/Biodiesel Fuelled C I Engine Performance. In *STLE 2013 Annual Meeting & Exhibition*. Detroit, USA. Retrieved from <http://staffprofiles.bournemouth.ac.uk/individual?uri=http%3A%2F%2Fstaffprofiles.bournemouth.ac.uk%2Findividual%2Fzhan>
6. Ramesh, C. S., Silva, D., Trinadh, R., & Khan, Z. (2013). Wire Spraying of Aluminium on Ni-P Coated GFRP Panels. In *STLE 2013 Annual Meeting & Exhibition*. Detroit, USA. Retrieved from <http://www.stle.org/default.aspx?>
7. Ramesh, C. S., S Jain, V. K., Keshavamurthy, R., & Khan, Z. (2013). Prediction of Slurry Erosive Wear Behavior of Al6061 Alloy using Fuzzy Logic Approach. In *Contact and Surface 2013*. Siena, Italy. Retrieved from <http://library.witpress.com/>

* Paper 2, 3 & 4 are Final Year UG Design Engineering Students

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Near Future Plans: Multinational Consortium in RERT



Near Future Plans Multinational Consortium in RERT

Objectives

1. To explore future opportunities of external funds e.g.
2. [National Science Foundation](#) (NSF)
3. [The World Bank](#), [EPSRC-DST](#) (Department of Science and Technology India)
4. Joint research proposals
5. Developing case studies for UG and PGT taught provisions
6. Staff/students exchanges



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@ZulfiqarKhan_SW



The End