Project 38/2011 – Nano-reinforced Protective Coatings on Biofuel Engine Systems

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<tr><td>Project Number</td><td>38/2011</td></tr>
<tr><td>Project Title</td><td>Nano-reinforced protective coatings on biofuel engine systems</td></tr>
<tr><td>Principal Investigator (PI)</td><td>Prof. Alan Kin-Tak Lau, Department of Mechanical Engineering, The Hong Kong Polytechnic University</td></tr>
<tr><td>Project summary</td><td>The project aims to study nano-reinforced protective coatings for biodiesel engine systems, including rubber tubing and metal fuel connections in the fuel system of automobiles, when a conventional diesel engine is running on biofuel-blended diesel fuels.</td></tr>
<tr><td>Research Theme</td><td>Green transport technologies, application and performance</td></tr>
<tr><td>Project Duration</td><td>24 months</td></tr>
<tr><td>Proposed Budget</td><td>The total budget is $1,724,950, comprising the following items:
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<tr><th>Item</th><th>Amount requested ($)</th></tr>
<tr><td>Manpower
- Research Assistant I
@ $15,000/month × 24 months
- Technician
@ ~$20,000/month × 24 months</td><td>360,000

468,450</td></tr>
<tr><td>Material characterization
SEM, DMA, XRD, DSC (500hours/each)</td><td>215,000</td></tr>
<tr><td>Experimental materials
- include testing materials, such as biofuel, nanomaterials, nanofillers in the protective coatings and the matrix material in the nanocomposites</td><td>50,000</td></tr>
<tr><td>Venue charge
- include renting of the testing centre from service provider, as well as equipment and the operation charges</td><td>334,500</td></tr>
<tr><td>Equipment charge</td><td>84,000</td></tr>
<tr><td>Fuel, parts and consumables</td><td>213,000</td></tr>
<tr><td>Total:</td><td>1,724,950</td></tr>
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Summary of Assessments/Remarks	See Appendix. Members are invited to advise whether the application for ECF should be supported and if supported, the exact amount of fund to be granted.

Secretariat, ECF Research Projects Vetting Subcommittee
December 2012_