



Dr. R. M. Sorrell
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Professor Bill O'Neil
Dept. of Engineering
Cambridge University

Dear Professor O'Neil,

ESPRC Grant Application - "Cambridge Bid in Advanced Materials"

BP is a global energy business, and innovation and developing new products and processes is crucial to our success. To this end we seek out and work with internationally leading academic teams to provide us with the very best new technology. We have recently (August 2012) launched a US\$100 million, 10 year programme for materials research, the International Centre for Advanced Materials (ICAM). Cambridge University is one of three universities we have selected to participate as a "spoke" alongside the ICAM "hub" at The University of Manchester. Cambridge were selected as a founder member of ICAM on the basis of their capability to carry out ground-breaking research in the area of alloy design and smart materials and surface science for fouling mitigation, and we expect to take up a number of opportunities to do further research in the area of surface science and other areas with Cambridge through ICAM.

Indeed, we have already set up a project that Cambridge will lead under ICAM in the area of surface science that will benefit directly from this proposal, funded to the tune of £1.6M. I have discussed your bid with Stuart Clarke who leads this activity for BP ICAM in relation to the 'Near ambient XPS system'. BP fully supports the leading edge research that this equipment would enable and we can see how it would deliver immediate benefits to our surface science program. There are several threads/themes in our ICAM programme that are dominated by surface science including:

- Corrosion, erosion, fouling (hydrate, wax, scale and asphaltene precipitation) and the role of coatings and inhibitors;
- Reduce drag through pipes;
- Low friction engine surfaces, lubrication;
- Self heal and self clean;
- Sensors;
- Soot formation and dispersion in oils.
- Behaviour at high temperature, pressure, shear, pH etc

BP have 6 staff working part time within ICAM to develop pathways to impact and we are keen to contribute to the new research opened up by this investment.

I am aware of the fact that you have worked very closely with Professor Withers at Manchester and Professor Neil Alford at Imperial College to ensure that the university bids are complementary and so will make a significant additional impact should they all be funded. In particular your interest in the surface science complements the interest at Manchester in the near surface region and taken together can help us develop new materials to the benefit of the UK and BP in particular.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Bob Sorrell', written in a cursive style.

Bob Sorrell