

**"Design Hub / Prototypical" - Case Histories.**  
**April 2008**

<b>Business</b>	Coati Ltd.
<b>People</b>	Debbie Reeve and Matthew Carter
<b>Location</b>	Hethel Engineering Centre
<b>Nature of Business</b>	Corrosion prevention.

This product is based upon the need that large petrochemical and marine companies have to protect their massive steel structures and associated ancillary equipment from the ravages of corrosion. The basic premise is well known, i.e. prevent moisture and oxygen from contact with the surfaces under attack and you have removed two of the essential mechanisms of the corrosion process. In the past, components were dipped in a protective elastomeric compound, or it was applied by spray.

Both processes work to a degree, but if there are any gaps in the coating then those small exposed areas are subject to rapid corrosion locally, often resulting in catastrophic failure. Debbie and Matthew have been working on a novel and better way of achieving a complete and gap free coverage, but without wasting material and causing widespread overspray.

They have used the services of the Design Hub for some time now for both general NPD advice and help with funding and premise location. Their process is based upon a combination of; specialised equipment, tooling and refined compound knowledge. We gave assistance to Coati in the form of; design management advice, contact with design consultancies and assistance with small grants via the "Prototypical" scheme, funded by Norfolk County Council.

These monies were used to; design mould tools essential to the process, design of electronic control & fabrication work on the heater / pump used to get the compound to the correct temperature. Hence critical and expensive items such as pipe work, valves, flanges, mountings, etc., can be protected from corrosive attack with confidence and sound engineering QA practice. When access for inspection or maintenance is required, the compound can be peeled off to reveal the sub surface and then reapplied once the work is completed.

The Design Hub has been involved with Coati for over two years, as a regular confidential adviser, with Coati working hard to complete the actual tasks. Coati have used ip21 to prepare their patent application, which covers the process and application method. A sample bolt, showing how the coating works is illustrated below.

