

Monthly Report: 18 June to 18 July 2009.

Project: "OTELLO - Method for converting thermal energy into mechanical work"

Ref No: C1491


Progress to date:

1- Excellent progress has been made in developing the code. The aim is to develop the code in such a way that it would be suitable for the use by an engineer with solid background in thermodynamics. For this reason the code has been written in the familiar working environment of Excel using the Visual Basic programming language.

2- The thermodynamic data for R245FA, R410A, and Carbon Dioxide have been collected over the specified temperature range of 100°C – 140°C from a number of reliable scientific resources. The thermodynamic properties collected for each working fluid as part of the above task included density, specific volume, specific heat, internal energy, and entropy for a wide range of temperatures and pressures. Over 300,000 individual data points were collected as part of the above mentioned exercise.

Future work involves developing suitable correlations for the three working fluids so that their behaviour under sub-cooled, saturated and superheated regimes can be mathematically described using the thermodynamic properties collected in 2 as part of the June-July work. These correlations will be then used in the code. The code will need to undergo a debugging process after the inclusion of the correlations. Several hundred correlations are anticipated.

Regards,



Dr David Nicolson
Business Development Manager

Newcastle Innovation Limited

T +61 2 4921 0000

F +61 4921 0000

david.nicolson@newcastle.edu.au