

Europlanet TNA Report

PROJECT LEADER

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COLLABORATORS

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Date of TNA visit:	2 to 5 Nov 2010 for leader, 3 to 5 Nov 2010 for collaborator
Host laboratory:	<i>TNA3, PSSRI, Open University, Mass Spectrometry for Cosmic Samples</i>

Project Title –

Analysis of Titan Tholins, atmospheric aerosols analogues, by GCxGC MS and derivatization
- Report on the outcomes of the TNA visit (approx 1 page)

During the one week visit, Roland Thissen and Aranud Buch worked together with Jon Watson at recording GC x GC spectra of three different samples of tholins which were produced in PAMPRE reactor, at LATMOS, Paris. The results have been analysed in detail by use of the database for GC MS available in OU and results were compared to a study that was performed 4 years ago on tholins produced in a different lab, in the USA (Journal of Chromatography A, 1132 (2006) 280–288, “Analysis of Titan tholin pyrolysis products by comprehensive two-dimensional gas chromatography–time-of-flight mass spectrometry “ Megan McGuigan, J. Hunter Waite, Hiroshi Imanaka, Richard D. Sacks). Previous results were already collected in the frame of Europlanet TNA5, but lack interpretation because of insufficient time to evaluate the results. This second visit, involving two participants was an occasion to fulfil the in depth and quantitative analysis and also to proceed with futher sample preparation such as derivatization or thermochemolysis involving TMAH , that allow to refine the description of poorly eluting compounds such as amines.

Three samples of Titan Tholins were studied, produced in a mixtures of 90/10, 95/5 or 98/2 % N2/CH4 in order to relate the initial gas mixture to the result of the plasma production.

Please include:

- Publications arising/planned (include conference abstracts etc)

- - Host approval

Yes I (Jon Watson) agree that the above report is an accurate account of the research conducted.

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