QUEEN'S UNIVERSITY BELFAST | SCHOOL OF CHEMISTRY AND CHEMICAL ENGINEERING

# BET Sample Submission Policy

- A maximum of three (3) samples only may be submitted. If more than three (3) samples are submitted, all samples will be returned for the individual to prioritise their analysis. Additional samples can be submitted once their sample(s) have been analysed and returned.

- Each individual sample needs to be logged into the log book. Sample(s) not logged will not be analysed and will be returned.

- Only samples submitted on the current BET Submission Form (AS_BET_SSF_008) will be accepted for analysis. All other forms will be returned.

- Incomplete forms, including details in the safety section, will be returned. The information requested is required for analysis.

- Sample(s) must be submitted in screw top vials.

- All sample(s) will be heated UNDER VACUUM to 50°C less than the temperature supplied, to a maximum of 350°C. Therefore the sample **must be stable** at given temperature.

- Damage to equipment and/or instrumentation as a result of incorrect information will be reported to the relevant supervisor and there will be no analysis of future sample(s) without consent.

- If the maximum stable temperature is unknown you **MUST** submit samples for TGA analysis **BEFORE** submitting for BET analysis. Please provide the TGA reference in the *'Additional Information'* section.

- A minimum of **0.2 grams DRIED** sample must be provided for analysis. Additional quantities will be required for samples that exceed 0.2 in the following equation:

  $2 / \sqrt{\chi}$ grams (where $\chi$ = expected surface area).

- Please take into consideration there will still be an element of weight loss during degas/cleaning of pores when supplying a sufficient quantity. The amount of weight loss during preparation will be sample dependant.

- Surface area of less than 20 $m^2/g$ and greater than 250 $m^2/g$ may cause issues with present Nitrogen setup. Values outside this range will take longer to analyse and increased sample size may be required.

- Please note that BET analysis time is sample dependant, with sample preparation and analysis requiring a minimum of three (3) days but realistically week(s) to perform a single analysis, pending the nature of the material. Therefore do not expect results in less than two (2) weeks.

- Microporous samples will take longer to analyse and may require further examination/submissions.

- It is your responsibility to check for and collect your result(s), sample(s) and/or returned submission(s) from the Analytical Services Department. No additional analysis will be performed as a consequence of failure to remove your submission(s) and/or result(s) within thirty (30) working days and any results will be destroyed.

D. Baskerville
Head of Technical Services
5th of March 2020