23 September 2019

NEWS RELEASE

Aston Particle Technologies boosts its R&D resources with new benchtop systems

Aston Particle Technologies (APT) has significantly expanded its in-house R&D capabilities by investing in two specially-designed benchtop systems to prepare small quantities of blended pharmaceutical powders for use in its formulation development projects for pharmaceutical companies.

APT is already working with a number of large multinational pharmaceutical companies but the two new systems will allow it to further increase its commercialisation activities and the number and scale of development projects it can work on simultaneously. The new systems could also play a key role in helping to accelerate, for example, the development of new dry powder inhaler formulations for the treatment of asthma and COPD; novel ways to improve the delivery and potency of poorly water-soluble drugs; taste-masking solutions; or to improve the flowability of powders.

The new sample preparation systems have been specifically developed by automation consultancy GB Innomech (Innomech) to reproduce APT's unique one-step particle engineering technology on a small scale: to enable 'challenging' active pharmaceutical powders to be dry powder coated onto carrier particles. The systems can be used to prepare up to tens of grams of blended materials but use exactly the same process technology, conditions and recipe-based control system as the company's two kilogram pilot-scale production unit.

As soon as a development partner has then selected which formulations to progress, APT can immediately transfer the process conditions into its pilot-scale system to start producing the blended material in kilogram quantities for more extensive R&D studies.

… continued

"The new Innomech benchtop units will enable us to work at a smaller scale, on a larger number of commercial projects and to more closely align our formulation development activities with the needs of our pharmaceutical industry partners. As a result, we can also develop multiple prototype formulations and at an earlier stage when pharmaceutical companies have typically only got small quantities of key ingredients available," said Professor Afzal Mohammed, CTO and founder of Aston Particle Technologies.

One of the challenges when working with conventional powder blending technologies is that there is almost no correlation between small and large-scale equipment, which means most development work takes place on a larger scale. In comparison, APT has already demonstrated the scalability of its powder coating process which could lead to significant savings in development timescales and costs, as well as easier regulatory compliance.

For example: the technology can be used to prepare small quantities for proof of principle studies before a pharmaceutical company decides to buy in bulk quantities or to scale up its synthesis of specific ingredients. Development partners can also be fully confident that when they do need larger quantities of blended formulations, the quality and composition will be identical to the material used within their earlier studies.

Innomech took around five months to design and build the two new benchtop system for APT and also developed the company's pilot-scale unit that was delivered in 2017.

Notes to editors:

About GB Innomech Ltd
GB Innomech (Innomech) specialises in automating highly complex and labour-intensive manufacturing processes to maximise outputs, improve product quality and boost business performance. The company works with major international manufacturers in sectors such as pharmaceuticals, medical devices and environmental, as well as earlier-stage businesses looking to bring breakthrough technologies or products to market.

Innomech has a growing market reputation for solving the toughest of manufacturing problems by the early identification and management of risk, often cross-fertilising technologies and techniques from a range of industry sectors. All projects from initial feasibility studies through to building production-scale machines are conducted to high specification pharmaceutical industry standards and are designed to comply with GAMP5, FDA and other international standards.

The company was founded in 1990 and is based at The Innovation Centre in Witchford, north of Cambridge. For additional information about GB Innomech please visit or contact:

- www.innomech.co.uk
- Press enquiries to Simon McKay on +44 (0)1353 741075 or email to simonmckay@innomech.co.uk
- All other enquiries to Adrian Brown at Innomech on +44 (0)1353 667394

About Aston Particle Technologies
Aston Particle Technologies is a spin-out from the School of Pharmacy at Aston University and was founded in 2016 with seed investment together with an Innovate UK grant.

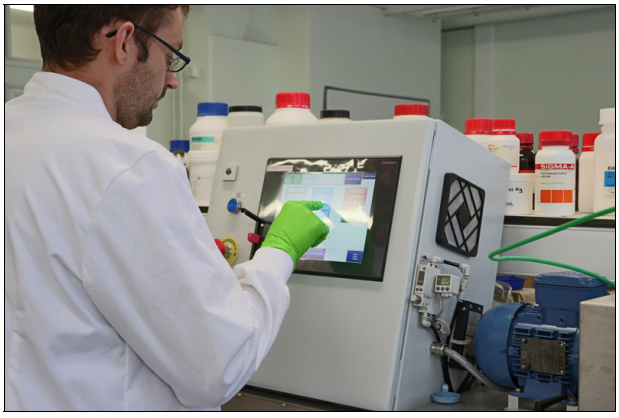
The company is developing a cost-effective, one-step particle engineering technology that uses a novel dry powder coating technique to process drugs without the use of solvents, heat or pressure. The company's patented technology enables 'guest' particles to adhere onto the surface of 'carrier' particles, and is being developed to deliver enhanced particle properties for challenging drugs (eg heat or moisture sensitive) without compromising their innate properties.

Target applications include: improved dry power inhaler formulations; increasing the solubility of poorly water-soluble drugs; taste-masking solutions; and developing materials with enhanced functionalities.

For further information see: www.astonparticletechnologies.com

Photographs

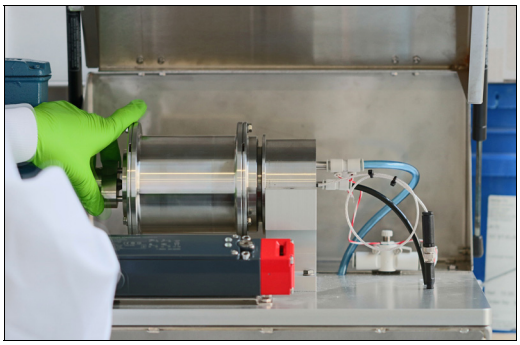
Print quality JPEGs of the images below have been attached to the original email or are available on request from Simon McKay (details above). Alternative images can be supplied. All images should be credited to: Aston Particle Technologies



1 The two new benchtop systems feature a touchscreen recipe-based control system so operators can quickly and easily trial out, store and recall different process conditions when preparing small quantities of blended pharmaceutical powders.

2 The new sample preparation systems can be used to prepare up to tens of grams of blended pharmaceutical powders within their reaction chambers as shown here.

3 The company's novel particle engineering technology is based on creating a fluidised environment within a reaction chamber (as shown above) to enable 'challenging' active pharmaceutical powders to be dry coated onto carrier particles.



4 The two new benchtop units have been specifically designed to reproduce APT's one-step particle engineering technology but on a small scale. The optimal process parameters can then be directly transferred into an existing pilot-scale production system which has also been designed and built by Innomech.

ENDS