

# Tabletting Technology for the Pharmaceutical Industry

A 2½-day residential course organised by the Royal Pharmaceutical Society of Great Britain in partnership with the Academy of Pharmaceutical Sciences

Monday 24 – Wednesday 26 November 2008 at the Moller Centre, Cambridge, UK

[www.rpsgb.org/worldofpharmacy/events](http://www.rpsgb.org/worldofpharmacy/events)



Royal  
Pharmaceutical  
Society  
of Great Britain



An intensive course on the formulation, production and properties of pharmaceutical tablets. This course will examine the basic concepts of equipment selection, granulation and end-point determination, formulation optimisation and prediction, in-process monitoring (PAT), film coating and official and non-official dissolution tests. The course is designed to be applicable to the day to day problems of tableting, linked to a sound theoretical knowledge of the principles involved.

## LEARN ABOUT

- The essentials of the formulation of tablets
- Properties of materials used in making tablets
- The mixing and granulation processes
- Roller compaction
- Tablet machines and instrumentation
- Requirements of Good Manufacturing Practice
- Scale-up of processes
- Process validation
- Continuous Processing Concepts
- Tablet testing
- Film coating

## CONTENT & OBJECTIVES

This well-established course provides an intensive course of study on the formulation, production and drug-release characteristics of pharmaceutical tablets. The course will cover the basic concepts of equipment selection, granulation and end-point determination, formulation optimisation and prediction, in-process monitoring (PAT), official and non-official dissolution tests, and film coating. It deals with development pharmaceuticals for registration.

The lectures will describe the current state of knowledge of the subject, both in terms of theoretical basis and practical experience. The workshops and problem based learning sessions provide opportunities for discussion in small groups of real-life problems encountered in tableting and will draw on a sound theoretical knowledge of the principles involved in the processes.

The course is based on didactic presentations on the main subjects of the course, together with interactive workshops that discuss real problems encountered in day to day work. The workshops provide opportunities for informal discussions and problem-solving sessions with the course tutors. Delegates are invited to send in advance, or bring to the course, their own problems in tablet formulation or production for discussion.

The social programme includes an informal welcome reception and course dinners, arranged to maximise the opportunities for informal discussion between delegates and the course team. An optional short local visit will also be arranged. The resource pack supplied to each delegate includes a CD-ROM of course documentation.

## OUTLINE PROGRAMME

- What is granulation, how and why do we do it?
- The essential components of a tablet
- Granules and tablets
- Mechanical properties of materials
- Granulation equipment
- Roller compaction
- Tableting machines
- Punch design and tooling
- Role of compaction simulators in R & D
- Automation and end point control
- Formulation development –Problem based learning
- Scale up
- Tablet machine instrumentation - principles and uses
- Production problems workshop
- Process validation
- In-process monitoring and PAT
- Tablet testing
- Film coating
- An introduction to modified release

## WHO SHOULD ATTEND

The course provides an essential briefing for graduates or technical staff who are working in the field of formulation development or production of tablets. The course is designed for those who have not previously worked in these areas and who require an intensive introduction to tableting and the associated processes.

## WHAT PREVIOUS DELEGATES HAVE SAID

“Excellent course, great to have such a varied background of participants and to be able to discuss ideas.”

“ Very good course, good technical pitch and very thorough overview of tableting area. Very enjoyable.”

“I have definitely learned subjects and topics which I will use back at work.”

# LEARN FROM A TEAM OF EXPERTS:

## COURSE DIRECTOR

### **Kendal Pitt, Technical Director, GlaxoSmithKline.**

Dr Pitt has previously worked for Wellcome Foundation Ltd., Roche Pharmaceuticals and MSD for over 20 years in both the UK and USA. His primary research interests are in powder compaction, powder flow and granulation process optimisation, including the use of compaction simulators in tablet and capsule product development. He has additionally published in the areas of formulation and design for nasal delivery of pharmaceuticals and on statistical design of experiments.

## COURSE TUTORS

### **Graham Buckton, School of Pharmacy, University of London and Pharmaterials Ltd**

Professor Buckton spends 30% of his time as Professor of Pharmaceutics at the School of Pharmacy in London, where he has a large research group, most of whom are industrially funded. The remainder of his time is spent running Pharmaterials Ltd, a company dealing with salt selection, polymorphism and amorphous content screening and formulation development for poorly soluble drug substances. He has authored a book and well over 150 papers in the field of pharmaceutical materials science. Professor Buckton has lectured world wide on aspects relating to formulation and manufacture of dosage forms and he acts as a consultant to a number of companies. He is a member of the Chemistry, Pharmacy and Standards sub-committee of the Commission on Human Medicines, the British Pharmacopoeia Commission and he was the 2003 British Pharmaceutical Conference Science Chairman.

### **Ashley Clarke, Associate Director, Merck, Sharp & Dohme Research Laboratories**

Ashley Clarke graduated in Pharmacy from the University of Bradford in 1990. He has over 15 years experience in formulation design and clinical supplies manufacture in the pharmaceutical industry. He is currently an Associate Director in the Formulation and Process Design Department at Merck, Sharp and Dohme, UK, where the focus of his work is on the development of solid dosage forms.

### **Brian Helsdon, Customer Training Manager, Manesty**

An engineer with over 40 years experience of the Manesty product, Brian Helsdon has a wide knowledge of the tableting equipment gained as a result of many years working within the production and engineering departments at Manesty in a number of senior roles. In his current position he is responsible for Manesty's customer training worldwide. He also lectures on tablet compression technology, tablet coating equipment and tablet tooling.

### **Kenneth Leiper, Benson Associates**

Kenneth J Leiper is an independent consultant in pharmaceutical quality systems and analytical science. He has wide experience of pharmaceutical quality assurance and analysis with GlaxoWellcome where he established laboratory management to control laboratory systems and automated analytical chemistry systems, holding senior management positions, most recently as quality assurance development manager. Ken played a key role in helping to establish the London School of Pharmacy NIR Centre of Excellence and the Centre for Process Analytics and Control Technology at Strathclyde University. He is a former Chairman of the Royal Society of Chemistry, Automatic Management Group and Editor of European Pharmaceutical Review, and a former member of expert committees of the British and European Pharmacopoeias. Ken regularly organises and contributes to symposia promoting the adoption of novel use of technology throughout Europe. In 2006 he received the Royal Pharmaceutical Society's Synergy Award for his outstanding contribution to the Pharmacy profession.

**Terry Lewis, Business / Project Development Manager, Casburt  
TMS (Tablet Manufacturing Solutions) Ltd.**

Mr Lewis is a specialist engineer in the design and use of tablet compression machines and tooling. His work takes him to many companies around the world and he has developed a wealth of experience during 35 years working with press and tooling manufacturers.

**Tesh K Patel, Commercial QA Manager (Europe), Abbott**

Dr Patel is a PhD Pharmacist from Portsmouth and Manchester Universities, an EU Qualified Person and currently Abbott's European Commercial QA Manager. Prior to Abbott, he worked for ICI / Zeneca Pharmaceuticals for nine years before moving in 1994 as Abbott's Technical Services Manager, Manufacturing Manager in 2001 and QA Product Surveillance Manager in 2004. In late 2005, he became Abbott's Division representative for Quality at manufacturing affiliates located in Europe and Japan and in early 2007 moved to his current role. Dr Patel's specialist field is in the development and manufacture of solid and liquid dosage pharmaceuticals, and is a member of both the Royal Societies of Chemistry and Pharmacy and of the Chartered Management Institute.

**Marshall Whiteman, Managing Director, Quindell Consulting**

Dr Whiteman is a registered pharmacist and chartered chemical engineer. Since gaining both his B.Pharm. and his Ph.D. (in Powder Technology) from the School of Pharmacy, University of London, he has worked in Pharmaceutical Research and Development with American Home Products and SK&F/SmithKline Beecham. From 1994-2007 he was head of Technical Service and Product Development with Colorcon and then VP Technical Development with the electrostatic coating/drug delivery company Phoqus. In 2007 he set up Quindell Enterprises Limited and Exopharma Limited as vehicles for consultancy and outsourcing activities.

**Michael Wilkins, Technical Director, GlaxoSmithKline**

Dr Wilkins graduated in Pharmacy from Sunderland School of Pharmacy and was awarded his PhD from The University of Nottingham. In 1994, he joined SmithKline Beecham Pharmaceuticals before moving to Fournier Laboratories Ireland in 2002 as the Head of Pharmaceutical Sciences. In 2006, Dr Wilkins returned to GlaxoSmithKline to work on the development and manufacture of solid oral dose formulations.

For more information on other  
RPSGB events, please visit

[www.rpsgb.org/worldofpharmacy/events](http://www.rpsgb.org/worldofpharmacy/events)

## VENUE

The Moller Centre in Cambridge is a modern and comfortable purpose-built conference and training venue in the grounds of Churchill College - easily accessible by road, train and air. Car parking facilities are available.

Delegates are asked to arrive and register by 10.15 on Monday 24 November. The course will end at approximately 15.00 on Wednesday 26 November. A detailed programme will be sent to delegates nearer the time.



## DELEGATE FEES

Delegate fees are £1605 for non-members or £1550 for members of the Royal Pharmaceutical Society or the Academy of Pharmaceutical Sciences. The fees are inclusive of two nights' accommodation, meals and refreshments, a welcome reception, social programme, a resource pack with full course documentation and CD-ROM.

## CANCELLATION & REFUND

Should you find that you are not able to attend the residential course after booking a place, please advise us in writing as soon as possible. If a colleague is able to attend in your place and you notify us in writing, we are pleased to accept the substitution at no charge. In the event that it is necessary to cancel a registration, please notify us in writing. A processing fee is payable. For cancellations, the following refunds will apply: Over 14 days: 90% of the fee; less than 14 but over 3 working days: 50% of the fee; three or less working days: nil. The time of notification is taken at the date of receipt of fax or letter. Substitution is permitted at any time if notified in writing.

## CHANGES TO THE PROGRAMME

The Royal Pharmaceutical Society will endeavour to present the programme as described. However, it reserves the right to make changes to the programme or speakers but will advise delegates of changes in advance. Should it be necessary to cancel the event, delegates will be advised as soon as possible and delegates will receive a full refund of fees paid. The Royal Pharmaceutical Society does not accept liability for any expenses incurred by delegates, including advance purchase travel tickets

## TABLETTING TECHNOLOGY FOR THE PHARMACEUTICAL INDUSTRY REGISTRATION FORM

DELEGATES WILL BE REGISTERED UPON RECEIPT OF THE COMPLETED FORM AND WILL BE LIABLE TO PAY THE FEES. PAYMENT MUST BE MADE BEFORE THE START OF THE COURSE.

### PLEASE WRITE CLEARLY IN BLOCK CAPITALS

SURNAME .....

TITLE (Miss/Mrs./Ms./Mr./Dr./Prof) ..... FORENAME .....

JOB TITLE .....

ORGANISATION .....

ADDRESS .....

.....

.....

POST CODE ..... TELEPHONE NUMBER .....

FAX NUMBER ..... EMAIL ADDRESS .....

MEMBERSHIP NUMBER (if applicable) .....

By giving us your details you are agreeing to be added to our electronic and postal mailing list and receive information on our events. Please note that your information will not be sold and will be handled in accordance with the Data Protection Act and the Society's Privacy Policy

☐ Tick here if you do not wish to be added to our mailing list

I have specific dietary requirements (please detail) .....

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How did you hear about this event? .....

Registration fees: £1550 for members of Royal Pharmaceutical Society or Academy of Pharmaceutical Sciences or £1605 for non-members (fees inclusive of 2 nights' accommodation, meals and refreshments, a welcome reception, social programme, a resource pack with full course documentation and CD ROM.)

☐ I am a member of the Royal Pharmaceutical Society or Academy of Pharmaceutical Sciences (£1550)

☐ I am a non-member (£1605)

IMPORTANT: IF YOU DO NOT RECEIVE A CONFIRMATION OF YOUR PLACE VIA EMAIL WITHIN 5 WORKING DAYS OF SUBMITTING YOUR REGISTRATION FORM PLEASE LET US KNOW

**METHOD OF PAYMENT** (Payment must be made before the start of the course)

PLEASE DO NOT INCLUDE ANY OTHER PAYMENTS TO RPSGB

☐ BANK TRANSFER:

SORT CODE 60 60 04. ACCOUNT NUMBER: 7037 8193. **QUOTE REF NO: CAS/SPR/405**  
NATIONAL WESTMINSTER BANK, 91 WESTMINSTER BRIDGE ROAD, LONDON SE1 7ZB

☐ DEBIT/ CREDIT CARD   ☐ MAESTRO   ☐ MASTERCARD   ☐ VISA   ☐ AMEX

CARD NUMBER \_ \_ \_ \_ \_   \_ \_ \_ \_   \_ \_ \_ \_   \_ \_ \_ \_   SECURITY NUMBER \_ \_ \_

EXPIRY DATE        \_ \_ \_ \_ / \_ \_ \_ \_ / \_ \_ \_ \_

SIGNED .....

VAT registration number GB 233 0296 92 (A VAT receipt will be issued upon request)

CARDHOLDER'S NAME.....

ADDRESS .....

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POST CODE .....

PLEASE COMPLETE THE REVERSE SIDE OF THIS REGISTRATION FORM

ONE FORM PER PERSON PLEASE – PHOTOCOPIED FORMS ARE ACCEPTED

Please return this form with your payment to: Science Programme Manager, Royal  
Pharmaceutical Society of Great Britain, 1 Lambeth High Street, London SE1 7JN

Fax: 020 7572 2506        Email: science @rpsgb.org

(Tel: 020 7572 2640)

**Cancellation and refund**

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