INSTRON

Issue 6
September 2006

Welcome to the September 2006 issue of the Instron® Materials Testing Accessories e-newsletter

In This Special Food Testing Issue:

Product Feature:

- Food Fixtures

Special Offer: 20% Jaw Face Discount

Efficient gripping of your test specimen is important for reliable, trouble-free testing. Like any tool, you need to keep your jaw faces in good condition for optimum performance. Chipped, worn or clogged teeth on jaw faces can produce slippage and with it, the temptation to use excessive force, increasing the likelihood of jaw breaks. Additionally, unevenly worn faces can produce undesirable bending effects in the specimen.

Keep in mind it isn't only serrated faces that can wear out. Rubber-coated faces can gradually degrade over time in your shop environment, particularly in higher temperature conditions. Cord and yarn grips also rely on a smooth, polished surface for optimum resistance to jaw breaks.

If it's been a while since you replaced your jaw faces, now is the time. We're offering a **20% discount** on all jaw faces purchased for your existing grips. Contact your local Instron office and mention this offer.

Product Feature: Food Fixtures

Food Testing Accessories

In today's fast moving world, consumers put increasing demands on the quality of food products. The industry is required to meet certain statutory regulations in terms of ingredients and additives. They must correctly label packaging and ensure it gets to the retailers in a presentable form. If they fail to meet any of these requirements, their business is likely to suffer. With food, the real proof is in the eating and as all of us know, if the texture of the food is strange or out of place we won't buy it again. For example, if you buy lettuce, you expect it to be crispy not damp and limp. If you buy a tub of yogurt, you want it to be firm enough to stay on your spoon rather than run over the sides before it reaches your mouth. This property within the food industry is referred to as texture and it is important that the food industry can quantify this property for a range of food types.

In 1962, Professor Malcolm Bourne, Cornell University, used an Instron system in the first deployment of a mechanical testing instrument for texture measurements. Since this milestone, thousands of food industry companies have made Instron their texture analysis provider of choice.

Texture can be determined in a number of ways including puncture, shear and deformation. Puncture testing uses a number of probes of varying diameters and point geometry to determine the resistance to force as the probe is inserted into a food product. A piece of fruit is mounted onto a testing machine and a probe can then be inserted into the fruit at a constant rate. The load trace of the probe entering the fruit will be able to indicate if the skin resisted enough force to be classed as 'firm' against the manufacturers or retailers requirements.

-- Shear Testing

Shear testing can determine a food's bulk 'firmness' by measuring the force a food sample resists as it is subjected to forces on a known testing fixture. An example of this is the Kramer shear cell shown here. The fixture is mostly used on fruit and vegetables, but can be used on diced or cubed meats and nuggets.

Deformation of food products can be split into three main categories: tensile, compressive and bend.

In a tensile test, analysts are interested in yield, modulus, elongation and UTS.

Test-specific accessories:

- Tensile
- Compressive
- Bend

Contact Us

Tel (US):
+1 800 473 7838

Tel (Europe):
+44 1494 456815
Online request

Related Links

- FREE Accessory Catalog
- Subscribe to other free Instron newsletters

Future Events

- **Materials Testing Seminar:** Polish Institute of Transport Studies (Warsaw) September 2006
- **Medtec Radisson SAS Hotel** (Galway, Ireland) September 20th-21st, 2006
- **European Society of Biomaterials:** (Nantes, France) September 27th - October 1st, 2006
- **Mini Rubber Expo:** (Cincinnati, Ohio) October 10th-12th, 2006
- **Deformation and Fracture of Materials Conference:** Balikov Institute (Moscow) November 13th-16th, 2006
- **Fatigue 2007:** The 6th Engineering Integrity Society International Conference on Durability and Fatigue (Queens College, Cambridge, UK) March 26-28th, 2007

-- The Back Extrusion Food Cell

A more complex property of food is how the food reacts to repeating or cyclic forces generated by chewing. The back extrusion cell simulates many of the deformation mechanisms that occur during mastication. The flow resistance, related to the aggregate viscosity of the food specimen, is measured as the food is extruded through the annular gap between the plunger and cell wall. Over time any degradation in force can be related to how the product will break down in the mouth.

Within the food testing industry, tests can be simple or complex. When food accessories are used with an Instron testing machine that supports Bluehill® 2 software, with the test profiler option, a powerful food analyser is created. This enables manufacturers and retailers to evaluate products before they get to the customer ensuring reliable and consistent performance.

For further details please follow the links below:

- Specific food testing equipment
- Bluehill 2 software
- Texture Profile Analysis method templates for Bluehill 2

For more information on Accessories

Please submit an online request or call us at
+1 800 473 7838 (US only) or +44 1494 456815 (Europe only)

Are you testing something a little different? Do you think more people should know about it? Would you like to submit an article for possible publication in the Instron accessories newsletter? If so, please submit your story.

What do you think? Tell us!

INSTRON
Instron Corporate Headquarters
825 University Ave
Norwood, MA 02062-2643 USA
Tel: +1 800 473 7838

Instron European Headquarters
High Wycombe, England Coronation Road,
Bucks HP12 3SY
Tel: +44 1494 456815