

## Simulating the Powder Properties of a 3D Roll Compactor

**Track Code:** 66131

**Categories:**

- Food and Nutrition
- Pharmaceuticals

**Keywords:**

- Computer Technology
- Drug Manufacturing
- Food and Nutrition
- Food Industry
- Food Processing
- Pharmaceuticals
- Software

Powder roll compaction is a processing technique used in many industries to compress a fine powder into larger granules. The larger particles are generally easier to process than the fine powder, but their density and size must be consistent.

Researchers at Purdue University have developed models for Abaqus, a software suite for finite element analysis and computer-aided engineering, which simulate the powder properties of a 3D roll compactor. The models predict the roll force, roll torque, and roller-compacted ribbon density distribution. Better simulations allow for control over the uniform density of the granulated powder.

**Advantages:**

- Increases uniform density of granulated powder
- Predicts the roll force, torque, and compacted ribbon density distribution

**Potential Applications:**

- Drug production
- Food processing

**People:**

- Wassgren Jr., Carl R (Project leader)
- Muliadi, Ariel

**Intellectual Property:**

**Application Date:** September 6, 2012

**Type:** Copyright

**Country of Filing:** United States

**Patent Number:** (None)

**Issue Date:** (None)

**Contact OTC:**

Purdue Office of Technology Commercialization

The Convergence Center

101 Foundry Drive, Suite 2500

West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: [otcip@prf.org](mailto:otcip@prf.org)