



WISCONSIN  
UNIVERSITY OF WISCONSIN-MADISON

## Manufacturing Polymer Micropellets

[View U.S. Patent No. 9,321,207 in PDF format.](#)

**WARF: P100314US02**

Inventors: Tim Osswald, Martin Launhardt

**The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a method to produce polymer micropellets from a melt using pressurized airflow.**

### Overview

Polymer-based micropellets can be formed having diameters smaller than 50 microns. The miniscule particles are vital to a number of processes like laser sintering—used to build rapid prototypes and molds—and manufacturing porous plastics parts. To make quality products, control over the shape, size and distribution of particles is key.

Conventional micropelletization techniques can result in particles of dissimilar size, with irregular shapes and surfaces. Such techniques also are expensive and unsuited to various polymers.

### The Invention

A UW–Madison researcher has developed a micropelletizing method and apparatus for controlling the size and shape of polymer particles.

In the process, a thin melt of polymer material is extruded through a specialized nozzle. A jet of heated, pressurized air then is applied. This causes the thread to stretch and break up into individual droplets due to surface tension effects known as Rayleigh disturbances.

The droplets are allowed to cool and solidify into micropellets. Factors like temperature, speed and extrusion rate are used to control droplet formation.

### Applications

- Plastics processing
- Laser sintering
- Polymer-based parts and medical devices

### Key Benefits

- Process control
- Micropellets can be any suitable shape, including spherical.
- Particle size is adjustable and smaller than two millimeters in diameter.
- Suitable to different polymers

We use cookies on this site to enhance your experience and improve our marketing efforts. By continuing to browse without changing your browser settings to block or delete cookies, you agree to the storing of cookies and related technologies on your device. [See our privacy policy.](#)

### Additional Information

OK



WARF  
Wisconsin Alumni Research Foundation

| [info@warf.org](mailto:info@warf.org) | 608.960.9850

#### For More Information About the Inventors

- [Tim Osswald](#)

#### Tech Fields

- [Materials & Chemicals : Polymers](#)

For current licensing status, please contact Michael Carey at [mcarey@warf.org](mailto:mcarey@warf.org) or 608-960-9867

We use cookies on this site to enhance your experience and improve our marketing efforts. By continuing to browse without changing your browser settings to block or delete cookies, you agree to the storing of cookies and related technologies on your device. [See our privacy policy.](#)

OK



**WARF**  
Wisconsin Alumni Research Foundation

| [info@warf.org](mailto:info@warf.org) | 608.960.9850