

T A C - Brief

Technology Applications Center News Update

New application developed at TAC reduces time to clean spinneret heads from 6 hours to 20 minutes! . . .

When a producer of synthetic threads needed to find a faster way to clean their spinneret heads, they asked the TAC for assistance.

Problem Statement: As with all production processes there is a need for the shut down of the line to perform necessary maintenance. For an extrusion line, that means cleaning the injection heads. For this Alabama Power customer, the process involved removing the head components and using a salt bath to burn the resin off. The salt bath time was from 6 to 8 hours followed by another hour to chemically clean the salt off and checking that the 37,000 holes were free from debris.

Description: The thermal oxidizing of an organic coating by employing either infrared to elevate the temperature of a substrate to achieve cleaning of the substrate in minutes instead of the hours that are common with traditional cleaning methods using chemicals, media blasting, or hot air burn off ovens/furnaces.

Industrial Burn-off: Demonstrated at the Alabama Power TAC by employing high watt density medium-wave infrared to elevate the temperature of the spinneret head to achieve cleaning of the substrate in minutes instead of the hours required by their traditional cleaning methods using chemicals.

New process development: As with many success stories, the origin of this solution began in 1997 as a curiosity in the lab to find a way to burn organic material from a paint hook left by a customer who had been in the TAC testing a new coating technology. Over the years the idea of developing this burn off technologies grew. By 1999, Fostoria Industries, a leading manufacturer of industrial ovens, joined the effort to design a production oven. In 2004, the first production oven was installed at this customer's location in Leeds, Alabama. The oven is designed to clean a 16 inch spinneret head in 20 minutes. And, the chemical cleaning step has been eliminated.



Photo courtesy of Fostoria Industries

This photo shows the Fostoria oven at the customer location in Birmingham, Alabama. The spinneret parts are laid flat on the tray making sure that there is no overlapping of the parts.

TAC testing: An important step in finding the best solution for your process is to test. The TAC offers our customers the opportunity to do just that.

About the TAC: Southern Company operates two Technology Applications Centers, one located in Atlanta, GA, operated by Georgia Power. And, the other located south of Birmingham, AL operated by Alabama Power. Both facilities are designed to assist Southern Company industrial customers with solutions related to heating processes. .