

Challenge: LCBA – Thorlabs on environmentally Friendly Thermoset Coating

Challenge Statement/Synopsis:

Thorlabs Canada is seeking an **eco-friendly material replacement for its' fibre optic components**. Currently a thermoset powder coating is used to coat the medical grade stainless steel capillary tube (see red tube in picture). The specific properties of this thermoset powder can be viewed in detail [here \(https://www.theprotechgroup.com/z-series-pdf/\)](https://www.theprotechgroup.com/z-series-pdf/).



Context for the Challenge:

Thorlabs Canada is actively looking for ways to **reduce the environmental footprint** of its' products, including the reduction of material waste generated by the manufacturing process. Trialing ecofriendly material alternatives is a particular area of interest. Replacing the thermoset powder coating that is currently used to coat the stainless steel tubes with a bio-based material alternative has been identified as a pilot project. Thorlabs Canada currently utilizes 20 kg of powder set coating annually. If this pilot is successfully implemented by Thorlabs Canada, there could be an opportunity to implement the solution for other manufacturing clients in the Montreal corridor, particularly in the aerospace sector.

Response Criteria:

In your response, please include answers to the following questions or explain how your solution meets any stated requirements:

- The **TRL** of your solution/product, as well as a description of any major pilot or industrial implementation projects



- Material must perform as well as current thermal polymer coating, including but not limited to: the ability to withstand 85°C/85% RH operating environment, the ability to withstand interactions with isopropyl alcohol and acetone
- Cost of your solution/product per unit (per kg, etc.)
- Application of the material – The preference is for a material that can be purchased and sent to Thorlab's 3rd party supplier for application in the Montreal region

The Opportunity:

As part of the LCBA Canada program you may have the opportunity to:

- Pilot or deploy your solution with Thorlabs Canada, if your solution is selected and deemed suitable. Thorlabs Canada is a subsidiary of Thorlabs Inc., a global optical equipment manufacturing company. Thorlabs Inc. has more than 20 manufacturing and distribution centres globally.
- Meet new customers and explore new markets for your solution.

About Thorlabs Canada:

Thorlabs Canada focuses on the development and production of a wide range of fiber-based optical components for next-generation imaging devices and advanced instrumentation. We also machine a wide range of materials with femtosecond lasers. Thorlabs Canada is based in Montreal, Quebec.