



Chalcogenide Supply Chain

Khoulér Khan, Chris Craig¹, Jin Yao², Paul Bastock, Edwin Weatherby¹, Chung Che Huang¹ Dan Hewak¹

¹Optoelectronics Research Centre, University of Southampton, Hampshire, SO17 1BJ

²Department of Chemistry, University of Southampton, Hampshire, SO17 1BJ

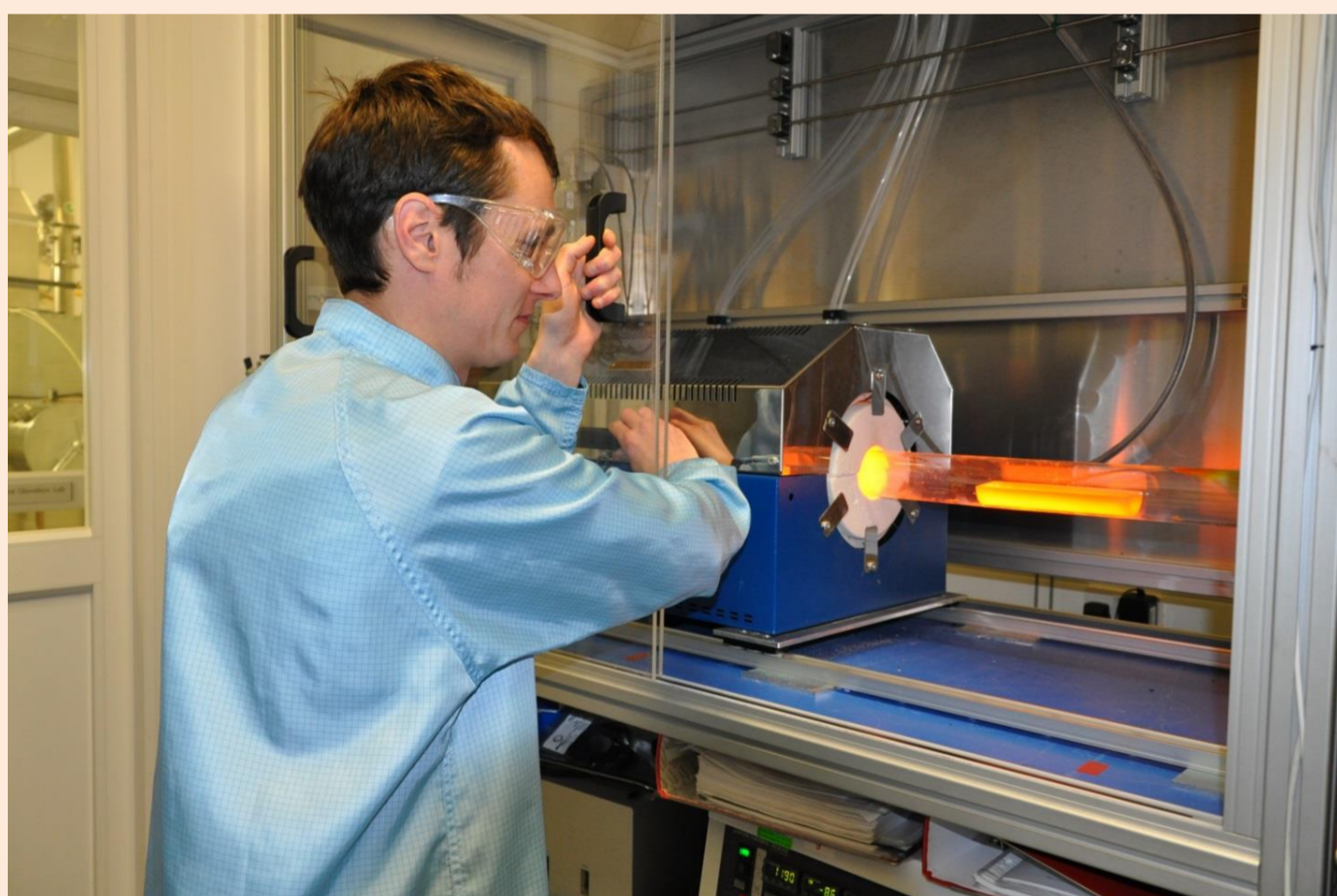
Purpose

ChAMP is focused on developing the UK as the leader in Chalcogenide Supply Chain globally. The ChAMP partnership aims at improving every link in the manufacturing and supply of chalcogenide products. The vision is a seamless interaction of industrial and research partners working together to strengthen and improve each part of the chalcogenide supply chain. The involvement is dynamic and we are continually forging new link. Now is your chance to see where you would like to participate. The main manufacturing techniques developed thus far are Sealed Ampoule (SA), Reactive Atmosphere Processing (RAP) and Chemical Vapor Deposition (CVD). This poster shows the initial capability and partnership developed with focus on the state of the art RAP system.

Reactive Atmosphere Processing

The System

A RAP system has been developed, see photo to the right. The system was designed inhouse with the goal of producing high purity bulk IR glass and raw materials. The five reactive gasses installed are Ar, H₂, H₂S, O₂ and Cl.



Components/Development

- Instrument Supply – Thermal Imaging, Temperature, Pressure, Dew point, Gas Detection, MFCs
- Automation and datalogging– National Instrument and Labview
- Gasses/Gas Purification – Chell (SAES)
- Furnaces – Lenton
- Fittings and other components – stainless steel, PFA, glassware, Crucibles, Vacuum components
- High Purity glovebox.

Analysis

Optical – FTIR, Raman, UV-Vis-NIR, Fibre loss
Impurity Analysis – GDMS
Thermal Analysis
XRD



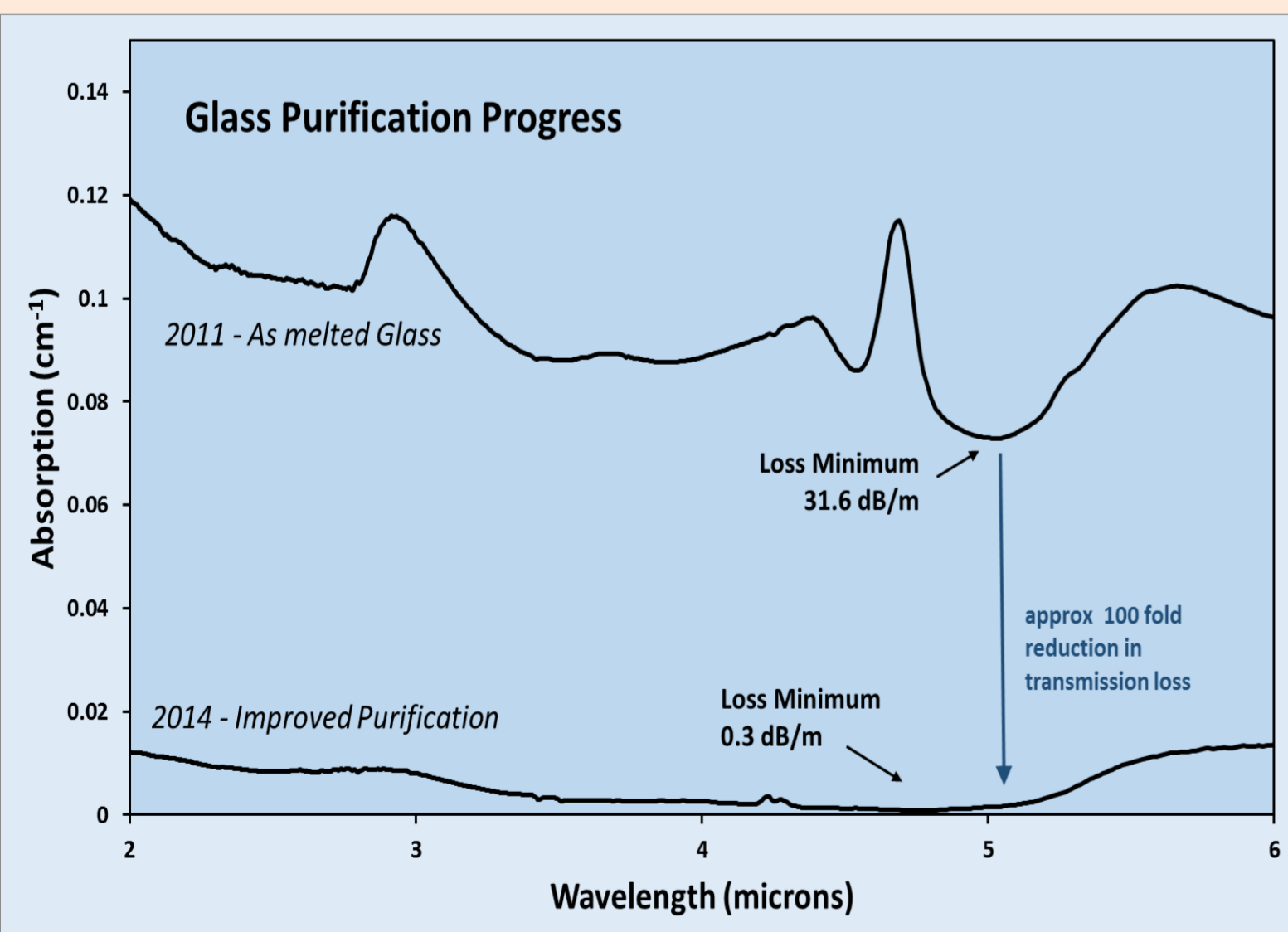
Become Involved!

Products and Supply

Fibre, substrates, bulk glass components, microspheres, thin films
for University and Industrial Research



Research/Collaborations/Projects



Grant Reference: EP/H02607X/1 - EPSRC Centre for Innovative Manufacturing in Photonics