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**Directa Plus plc**  
("Directa Plus" or the "Company")

### **Flame retardant properties of G+ established**

Directa Plus (AIM: DCTA), a leading producer and supplier of graphene nanoplatelets based products for use in consumer and industrial markets, is pleased to highlight to investors the publication of a scientific paper establishing the fire-retardant properties of Directa's G+ materials.

The research was undertaken by scientists at the Polytechnic of Turin, Italy's oldest technical university, and was published in an article entitled '*PET foams surface treated with graphene nanoplatelets: evaluation of thermal resistance and flame retardancy*' in the journal *Polymers* (<https://www.mdpi.com/2073-4360/13/4/501>).

The research shows that the use of water-based G+ graphene ink to coat polymeric foam confers significant flame-retardant properties versus untreated polymeric foam. A simple application of G+ ink to the external faces of the foam provided good flame-retardant properties, tested in both horizontal and vertical conditions

Polymeric foams are used in many applications from roof insulation to furniture and are extremely flammable meaning that the potential market for G+ fire retardant technology is sizeable.

Directa Plus already owns a family of patents relating to the flame-retardant composition comprising graphene nanoplatelets with seven patents granted across multiple jurisdictions, including the US, China and Europe.

**Commenting, Giulio Cesareo, Founder and CEO of Directa Plus, said:** "This is a very encouraging piece of research – building on our existing understanding of the use of graphene as a flame retardant.

"As always at Directa, we have a clear vision of bringing technology out of the lab into real world, commercial use, and this paper could represent another very important step to open a new future industrial vertical.

"Our intellectual property portfolio continues to grow and we will continue to utilise that portfolio in line with our established commercial strategy of bringing graphene enhanced products to existing markets in partnership with established commercial partners."

**Commenting, Alberto Frache, Associate Professor in Materials Science and Technology at Polytechnic of Turin, said:** "The results obtained from the coating of water-based G+ graphene ink in the field of flame retardancy were very significant. In particular, PET foam samples treated with G+ resist up to seven times the time required for flame penetration compared to the untreated sample.

“The close collaboration between Directa-Plus and the Politecnico di Torino has led to an in-depth study of G+ nanoplatelets in order to develop plastics with outstanding performance.

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**About Directa Plus**

Our focus is principally on the two sectors in which we have strong commercial advantage through developed and launched products and a technological lead: environmental (based on our Grafysorber® product) and textiles (based on our G+® products). In addition, we will continue to pursue opportunities in elastomers and composites (including tyres and asphalt), also using our G+® products. All our products are hypoallergenic, non-toxic and sustainably produced.