Conclusions

We have seen in this report that each of four important technological sectors has seen a vast surge in innovation based on graphene and related materials. As more and more products utilising these innovations come onto the market, be they beds, boots or batteries, I have no doubt that we will see this trend continue.

We have also seen that the contribution of graphene to sustainability is steadily growing, as evidenced by increasing number of patent applications concerning 'green' technologies. These trends shine a light on another way in which graphene can influence our world: not simply by providing new and better products, but by reducing the environmental impact of them and even helping reverse some of the environmental impacts of times gone by.

For companies innovating in the graphene space, or even more broadly in technologies related to other 2D materials, a key take home message from the trends presented here is: your competitors are developing a *lot* of IP protection! That might of course impact the ability of innovators in the future to obtain their own IP, but more importantly will potentially affect companies' freedom to operate – their ability to bring their own products to market without infringing other parties' IP rights.

Accordingly innovator companies should take note: a robust approach to IP involves not only obtaining your own IP (which is of course important) but also an awareness of the IP belonging to others in the field. The density of such IP will only increase.

Therefore it is never too soon to think about your IP strategy and to start making decisions accordingly.

Matthew Smith
Partner,Patent Attorney
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sparc TECHNOLOGIES

"After a slow start, the graphene industry is showing signs of gaining in momentum. Increased manufacturing capacity and falling prices are enabling high-volume applications. There is now an increased understanding that "graphene ain't graphene", and that graphene-based additives must be tailored for each specific application. Much has been made of the attributes of graphene, but increasingly, there is an appreciation that those claims must be supported by testing that aligns with industry standards. There is also an appreciation that handling and processing expertise is critical when seeking to optimise performance outcomes. These factors combine to show that graphene is ripe to become a staple advanced material across multiple sectors."

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Mike Bartels
Managing Director
Sparc Technologies