SPARC TAILINGS TREATMENT TECHNOLOGY DEMONSTRATES SIGNIFICANT RECOVERY OF PRECIOUS METALS

HIGHLIGHTS

- **Sparc graphene based adsorbent testing demonstrates significant outperformance of commercially available adsorbents for gold (Au) and silver (Ag)**
- **Best Sparc results highlight 96.98% and 97.82% adsorption of gold and silver from solution into graphene based adsorbents**
- **Sparc targeting estimated US$1T worth of precious metals already extracted from the ground, sitting at historical mining sites globally[1]**
- **Further test work underway including plans to include trials from gold and silver tailings from mine sites.**

Sparc Technologies Limited (**ASX: SPN**) (**Sparc** or the **Company**) is pleased to announce that the results of its test work on the recovery of gold (**Au**) and silver (**Ag**) in solution demonstrates that Sparc graphene enhanced adsorption material substantially outperforms commercially available adsorbents, which represents a key milestone in the application of its graphene technology in tailings treatment.

Functionalised graphene composite-based adsorbents for the removal of precious metals, oils and PFAS contaminants have been explored and developed by the Sparc team as part of its drive to develop technologies that can enhance large scale industrial markets and provide a solution for previously uneconomic or environmentally hazardous scenarios. This new class of composite material has many potential benefits over currently available adsorbents, which are primarily based on activated carbon, by providing higher adsorption capacity and recovery rates.

Sparc Managing Director, Tom Spurling, commented:

> *"We are excited to see results from initial testing that demonstrate our Sparc graphene enhanced adsorbents significantly improves the recovery of gold and silver in solution, which gives us the encouragement to progress to the next stage of testing at both operating and residual mine sites. Furthermore, the results are consistent with the significant improvement in performance that we are seeing in other projects being undertaken by Sparc with materials that are enhanced with graphene."*

Given the high demand for precious metals globally, the development of new recovery and recycling technologies is in high demand worldwide and has the potential for significant implications for sustainability

---

[1] *Mining [DOT] COM, Ana Komnenic - : Access to markets is subject to the Company being able to successfully develop and commercialise the graphene technologies. Sparc does not have any distribution or offtake agreements in place at this stage.*

and enhanced recoveries in the mining industry. Australia is a considerable global exporter of precious metals and Sparc is hopeful that this technology will improve the economics of existing mineral extraction practices, whilst improving mine life and reducing environmental and carbon footprints relative to the amount of metal produced.

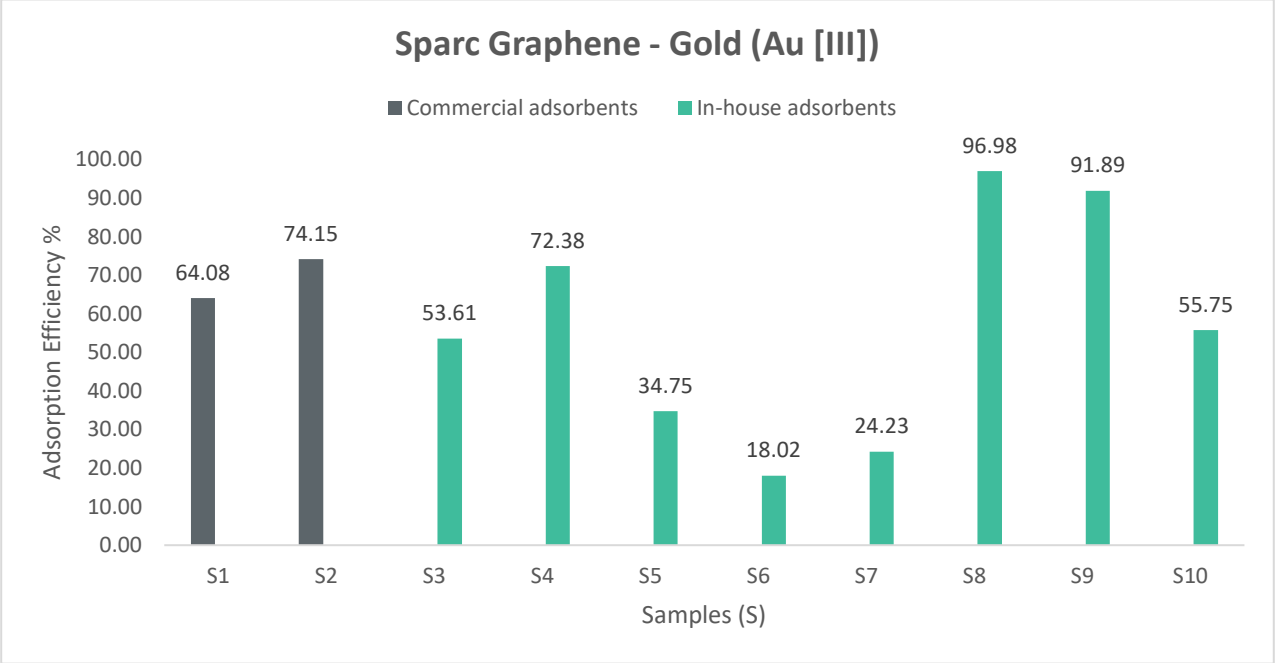

Chart 1 – Adsorption efficiency of different commercial and in-house adsorbents for Gold (Au [III]) ions. Adsorption conditions: Volume 20 mL; sample dosage: ~20 mg; pH (Au^3) = 4.20; $Au^{3+}{}_i$ = 1.2 mg L^{-1}, T= 21.0-22.0 °C; equilibration time: 5 hours at 200 rpm.

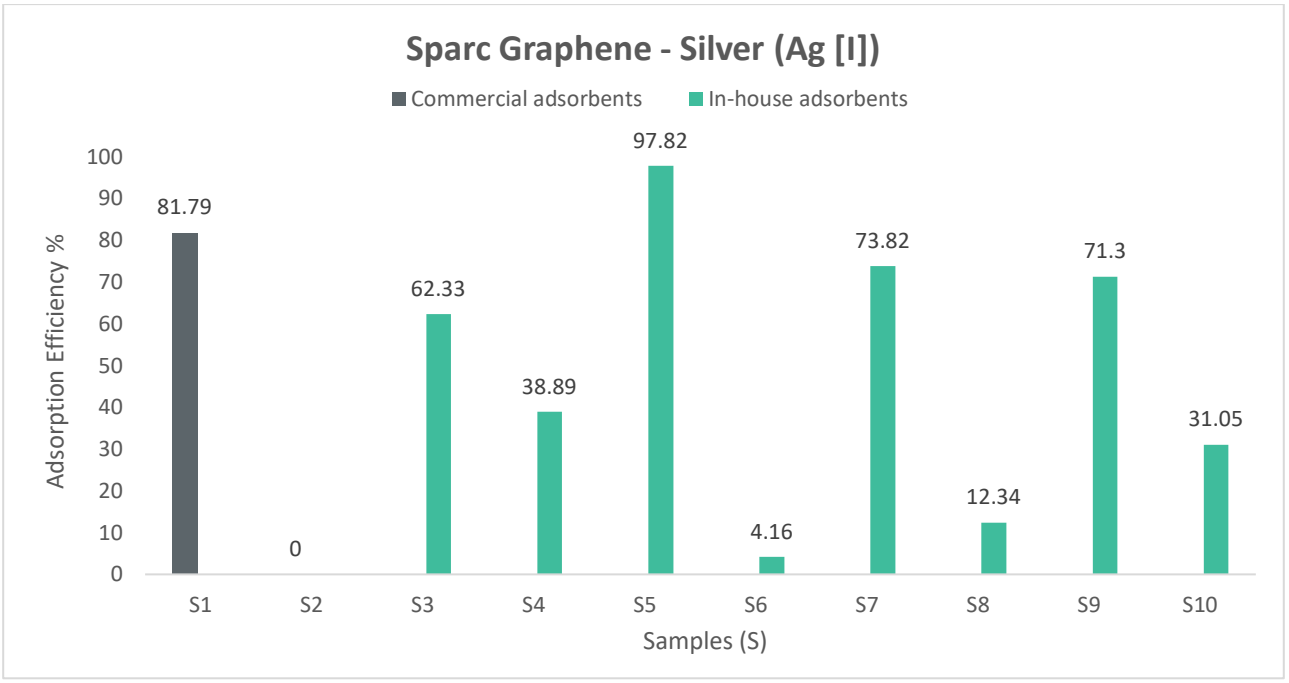

Chart 2 – Adsorption efficiency of different commercial and in-house adsorbents for Gold (Ag [I])) ions. Adsorption conditions: Volume 20 mL; sample dosage: ~20 mg; pH (Au^3) = 6.82; $Ag^{3+}{}_i$ = 4.4 mg L^{-1}, T= 21.0-22.0 °C; equilibration time: 5 hours at 200 rpm.

Adsorption Study

The preliminary study was undertaken in conjunction with Sparc's strategic partners and cornerstone shareholder, The University of Adelaide (**UA**). For this initial screening study, eight (8) available adsorbents were selected based on graphene-based composites designed and developed for adsorption of heavy metals and their applicability for precious metals Au, Ag and rare metals. Two (2) different types of industry standard commercial adsorbents (activated carbon and biochar) were used as control adsorbents to compare efficiency and enhancements.

The adsorption study for removal of precious metals was performed using model water solutions with known concentration of Au (III) 1.2 mg L-1 (1.2 ppm) and Ag (I) 4.4 mg L-1 (4.4 pm) using common adsorption conditions for these metals and room temperature. Ag (I) and Au (III) ions were prepared from their stock solutions, silver (I) nitrate and chloroauric acid, respectively.

Among the in-house developed adsorbents, proprietary testing samples S8 and S9 outperformed all the tested adsorbents including the commercial adsorbents with 96.98% and 91.89% removal efficiency attained for Au (III) ions adsorption respectively.

In terms of Ag (I) ion adsorption, sample S5 outperformed all the adsorbents with 97.82 % adsorption efficiency attained.

Next Stages

The next stages of the test work includes testing Sparc graphene adsorbents against a wider range of commercially available adsorbents, progressing to live field trials targeting the extraction of actual gold (Au) and silver (Ag) metals in tailings from mine sites.

-ENDS-

Authorised for release by: Stephen Hunt, Executive Chairman.

For more information:

Tom Spurling
Managing Director
+61 417 818 658
tom.spurling@sparctechnologies.com.au

Mark Flynn
Investor Relations
+61 416 068 733
mark.flynn@sparctechnologies.com.au

About Sparc Technologies

Sparc Technologies Limited (ASX: SPN) is a South Australian based company that is focusing on the development of innovative technology solutions using the unique properties of graphene. Graphene, which can be extracted from graphite, is a 2-dimensional nano material made of carbon atoms arranged in a hexagonal pattern, giving it unique and powerful properties that, with the right technology, can be imparted on products to improve performance. Sparc Technologies has licenced graphene-based technologies from the University of Adelaide, a leading institution in the field of graphene research, and will focus on commercialising graphene-based technologies for large industrial markets for marine and protective coatings, environmental remediation and bio-medical applications.