9 January 2018

Ilika plc
('Ilika,' the 'Company,' or the 'Group')

Half-year Report

Ilika (AIM: IKA), a pioneer in solid-state battery technology and materials innovation, announces its unaudited half yearly report for the six months ended 31 October 2017.

Operational Highlights

- Exchanged detailed Stereax® performance data with over 60 potential OEM partners
- Shipped sample batteries to 10 potential OEM partners for detailed technical evaluation
- Three of these have progressed to development and deployment partnerships:
    - Advanced a development programme to integrate a Stereax® battery in a miniature medical implant product (value to Ilika of £700,000 over 18 months from March 2017)
    - Commenced a development programme to integrate a Stereax® battery with a photovoltaic energy harvesting solution from Lightricity (ex-Sharp) (value to Ilika of £320,000 over two years from July 2017)
    - Secured a deployment programme with Titan Wind Energy, China's largest wind turbine manufacturer, to use Stereax® M250 batteries to power strain sensors for turbine blade condition monitoring (value to Ilika of £400,000 over two years from March 2018)
- Continued to implement the Stereax® roadmap to achieve increased capacity per footprint and miniaturisation requirements
- Executed the following materials development programmes:
    - plasmonic lenses and Heat Assisted Magnetic Recording (HAMR) materials with Seagate
    - battery materials with Johnson Matthey
    - game changing energy materials with Toyota and
    - aerospace alloys in collaboration with partners including Rolls Royce, GKN and BAE Systems.
- Expanded proprietary IP with patents granted in USA for core-shell catalysts for fuel cells
- ISO 9001Certification achieved in December 2017

Financial Summary

- Total revenue for the period £1.0m (H1 2016: £0.3m)
- Loss per share 2p (H1 2016: 3p per share)
- Cash balance at period end £3.9m (H1 2016: £7.1m)

Commenting on the results Graeme Purdy, CEO of Ilika, said: *"In the first half of the year Ilika has delivered a series of Stereax® development and deployment partnerships which are driving revenue growth and enhancing insight into the addressable sectors for its technology. The progress being made towards the commercialisation of Stereax technology is illustrated by the increased number of Stereax® samples sent to a diverse range of potential OEM partners for evaluation. Ilika is well-positioned to generate value from its globally-recognised reputation for expertise in solid-state materials and battery technology and is seeing increased corporate interest consistent with greater activity in the global battery sector."*

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Joint Chairman's and CEO's Statement

Review of Period

Ilika has continued to pursue its strategy of developing and commercialising its proprietary solid-state batteries, underpinned by its technology platform for the high throughput development of materials for the energy, electronics and aerospace sectors.

Stereax® solid-state battery technology

Ilika has been active in the development of solid-state battery technology since 2008, when it commenced a collaboration with Toyota, principally to develop materials suitable for use in batteries for hybrid vehicles. During that collaboration, Ilika and Toyota filed joint patent applications protecting relevant materials and processes for the development and manufacture of solid-state batteries. The key advantages of solid-state batteries relative to standard lithium-ion batteries are:

- Non-flammable
- 6 x faster charging
- 4x longer charge retention
- 2x increased energy density, making them half the volume for a given electrical charge
- $1/10^{th}$ the leakage current.

Ilika identified that these benefits make solid-state batteries particularly suitable for powering wireless sensors, which are the end-nodes for the "Internet of Things" (IoT). While analysts' estimates vary, we believe there are about 15 billion sensors already deployed, with the majority of these sensors hard-wired either to the grid, or to larger batteries, for example those used to power consumer electronics devices. Sensors can also be powered by primary (disposable) batteries. The number of sensors being deployed is growing rapidly and many of the important use-cases involve sensors in environments where it is expensive or inconvenient to connect them with cables. Also, in the trillion-sensor scenario, where sensors become ubiquitous, we understand the use of disposable coin cells becomes unsustainable. Ilika's solution is to combine its rechargeable Stereax® technology with miniature energy harvesters such as small photovoltaic panels (that convert light to electricity), thermoelectric devices (that convert heat to electricity) and piezoelectric devices (that convert movement to electricity).

Ilika's Stereax® battery technology is differentiated from other solid-state batteries through its choice of materials and its use of an efficient evaporation process that is capable of higher deposition rates than other solid-state routes. This results in the following benefits relative to previous solid-state battery designs:

- Ability to stack cells in a continuous process prior to encapsulation, increasing the energy capacity per footprint of battery
- Less encapsulation required
- High temperature resilience

Within the IoT market, there are many segments which are addressable with Ilika's technology. The unique benefits of Stereax® batteries make them particularly useful for medical implants and industrial IoT applications. Miniature Stereax® batteries can enable medical devices in a way that is currently not possible with conventional lithium-ion batteries. Their compact, high energy density, high power characteristics make them useful for a range of medical implant applications covering blood pressure monitoring to neuro-stimulation. Industrial IoT, or Industry 4.0 as it is sometimes referred to, requires batteries that can reliably operate at elevated temperatures above those for which standard lithium-ion batteries are rated.

In discussion with its potential partners, Ilika has defined a development roadmap for its Stereax® batteries. The Stereax® M250 product was launched in 2016 and in 2017 this was followed up with the launch of the P180, designed for use in hostile environments. Further Stereax® product launches are expected in 2018. Ilika has entered into in excess of 60 application discussions with potential OEM partners around the world. In addition, Ilika has sent samples of batteries to 10 potential partners for their detailed evaluation and

validation. Three of these discussions have now progressed to development and deployment partnerships, which are discussed in the commercial section below.

The Stereax products that Ilika is marketing to its partners are defined by a licensing package including the following:

- Battery architecture design
- Detailed definition of the materials composition and properties
- Manufacturing process description
- Sample battery devices
- IP portfolio

Over the past few months Ilika has been approached by a number of significant commercial partners interested in collaborating with Ilika to expand its product development roadmap to include larger capacity batteries suitable for use in consumer electronics, domestic storage of energy and electric powered vehicles. In order to address these applications, Ilika is developing manufacturing processes suitable for forming battery materials in quantities which facilitate energy storage on a scale several orders of magnitude larger than that achievable using current vacuum deposition methods. The Stereax roadmap is now showing this technical innovation, which has the code-name "Goliath". Further information will be forthcoming on this development path in future updates.

Commercial Progress

Ilika's intention is to license its technology to OEM partners using the model that has become standard in the semiconductor industry, based on license fees and royalties. Using its pilot line, Ilika has produced samples of its M250 and P180 batteries, which it has used to provide initial quantities of product to seed the market for OEM's. Licensing may also involve the use of 3rd party foundries working under contract to OEM's.

Ilika has continued to pursue a three-phase strategy for the commercialisation of its battery technology:

- Optimisation of the battery architecture for specific applications
- Validation and integration of the batteries into application systems
- Technology transfer and licensing for manufacture

The development of the published Stereax roadmap is demonstration of the implementation of the first phase of this strategy. The second phase commenced in 2017, as demonstrated by the three development and deployment programmes announced in the course of the year:

1. The optimisation of Stereax technology for miniature medical implants announced in March 2017 which is a £700k development programme.
2. Integration of Stereax with photovoltaic harvesters for transport applications in a two-year programme with Lightricity (ex-Sharp), which started in July 2017.
3. Deployment of Stereax in sensors to measure strain for condition monitoring in wind turbine blades. This programme will start in March 2018 and is a collaboration with Titan Wind Energy, China's largest wind turbine manufacturer.

These three programmes can be seen as lead indicators of the areas into which Stereax technology will be licensed as part of the third phase of commercialisation.

Materials Development Portfolio

Ilika continues to support an active portfolio of materials development projects, which are carried out in collaboration with OEM partners. These programmes are a usually done on a shared-IP basis. The project fees make a significant contribution towards covering Ilika's overheads.

Energy materials
In February 2017 Ilika commenced the latest in a series of projects with the Toyota Group. This latest project is being carried out with the Toyota Research Institute and its partners in the USA. The project involves the use of materials modelling, machine learning and Ilika's automated materials synthesis and testing techniques.

In August 2016, Ilika announced that it is taking part in a three-year project to develop protected anodes for lithium sulphur batteries. Led by Johnson Matthey and including Williams Grand Prix Engineering Ltd, the University of Oxford and the University of Warwick. The aim of the project is to discover new electrolyte composition options which will provide enhanced performance 'pouch cells' that can be made with existing cell fabrication methods. The pouch cells being developed in this project are for large scale renewable energy storage applications that require high capacity and low-cost batteries.

Electronic materials
In February 2017 Ilika announced a second project with Seagate to develop photonic materials and processes for hard drives. This follows on from the two-year project with Seagate and the University of Southampton, which commenced in February 2016, with the aim of providing a demonstration of 2D materials for Hard Disk Drive applications. Materials with superior nanophotonic properties are being developed to achieve improved hard drive performance and reliability.

Aerospace Alloys
Ilika has continued in its role of leading two aerospace alloy programmes. The first is focussing on superalloy compositions for gas turbine engines with better thermal efficiency than current alloys. The alloys are designed to increase gas turbine performance, reducing CO_2 emissions and noise levels at take-off. This is a collaboration with the University of Cambridge, Diamond Light Source and Rolls Royce.

The second project is the development of self-healing alloys in collaboration with Reliance Precision Engineering, University of Sheffield, GKN and BAE Systems. This project aims to develop alloys suitable for additive manufacturing processes and to develop a metallic manufacturing process that takes advantage of the flexibility of additive manufacturing and the precision of subtractive manufacturing.

Outlook
In the second half of the current financial year Ilika expects to continue to deliver strong revenue growth relative to the previous year. Ilika is focussed on the scale up of its Stereax technology. An important milestone in this process has been the award of ISO 9001 certification to the Company.

In addition, Ilika's pipeline of potential OEM partners, who are actively evaluating Stereax batteries, demonstrates that the Company is drawing ever closer to licensing this technology. Ilika is well-positioned to exploit the global trend towards solid-state battery technology and is one of the few global players with an established technology position in this field. Underpinning this is Ilika's foundation of high throughput materials innovation, which continues to attract OEM collaboration partners and support revenue growth.

Graeme Purdy, CEO
Mike Inglis, Chairman
Ilika plc

Consolidated statement of comprehensive income for the six months ended 31 October 2017

	Notes	Unaudited Six months ended 31 Oct 2017 £	Unaudited Six months ended 31 Oct 2016 £	Audited Year ended 30 Apr 2017 £
Turnover		1,004,112	328,639	1,050,667
Revenue		413,572	54,807	311,946
UK grants		590,540	273,832	738,721
Cost of sales		(531,024)	(220,101)	(574,272)
Gross profit		473,088	108,538	476,395
Administrative expenses				
Administrative expenses		(1,897,903)	(2,030,138)	(3,863,411)
Share-based payment charge		(269,627)	(278,326)	(547,347)
		2,167,530	2,308,464	4,410,758
Operating loss		(1,694,442)	(2,199,926)	(3,934,363)
Financial income		8,654	5,822	23,844
Loss before tax		(1,685,788)	(2,194,104)	(3,910,519)
Taxation		198,308	217,268	370,274
Loss for period/total comprehensive income attributable to owners of parent		(1,487,480)	(1,976,836)	(3,540,245)
Loss per share				
Basic and diluted	2	(0.02)	(0.03)	(0.05)

The results from the periods shown above are derived entirely from continuing operations.

Consolidated balance sheet as at 31 October 2017

	Notes	Unaudited Six months ended 31 Oct 2017 £	Unaudited Six months ended 31 Oct 2016 £	Audited Year ended 30 Apr 2017 £
ASSETS				
Non-current assets				
Intangible assets		2,980	9,088	2,581
Property, plant and equipment		543,653	405,573	451,560
Total non-current assets		546,633	414,661	454,141
Current assets				
Trade and other receivables		1,015,866	674,539	1,116,367
Current tax receivable		528,309	240,274	330,000
Other financial assets – bank deposits		3,268,648	1,406,305	2,900,000
Cash and cash equivalents		601,499	5,665,033	2,510,884
Total current assets		5,414,322	7,986,151	6,857,251
Total assets		5,960,955	8,400,812	7,311,392
Issued capital and reserves attributable to owners of parent				
Issued share capital		789,911	789,911	789,911
Share premium		23,179,756	23,179,756	23,179,756
Capital restructuring reserve		6,486,077	6,486,077	6,486,077
Retained earnings		(25,424,258)	(22,912,018)	(24,206,405)
Total equity		5,031,486	7,543,726	6,249,339
LIABILITIES				
Current liabilities				
Trade and other payables		779,469	707,086	912,053
Provisions		150,000	150,000	150,000
Total liabilities		929,469	857,086	1,062,053
Total equity and liabilities		5,960,955	8,400,812	7,311,392

Consolidated cash flow statement for the six months ended 31 October 2017

	Unaudited Six months ended 31 Oct 2017	Unaudited Six months ended 31 Oct 2016	Audited Year ended 30 Apr 2017
	£	£	£
Cash flows from operating activities			
Loss before taxation	(1,685,788)	(2,194,104)	(3,910,519)
Adjustments for:			
Amortisation	2,755	6,507	13,014
Depreciation	99,798	99,926	192,331
Equity settled share based payments	269,627	278,326	547,347
Profit on disposal of plant, property and equipment	-	(30,129)	(30,783)
Net financial income	(8,654)	(5,822)	(23,844)
Operating cash flow before changes in working capital, interest and taxes	(1,322,262)	(1,845,296)	(3,212,454)
Decrease/(increase) in trade and other receivables	100,501	(119,850)	(598,672)
Increase /(decrease) in trade and other payables	(132,584)	(41,043)	163,925
Cash utilised by operations	(1,354,345)	(2,006,189)	(3,647,201)
Tax received	-	315,000	415,274
Net cash flow from operating activities	(1,354,345)	(1,691,189)	(3,231,927)
Cash flows from investing activities			
Interest received	8,653	5,822	23,844
Sale of property plant and equipment	-	30,129	40,129
Purchase of intangible assets	(3,154)	-	-
Purchase of property, plant and equipment	(191,891)	(106,175)	(253,913)
Increase in other financial assets	(368,648)	(1,406,305)	(2,900,000)
Net cash used in investing activities	(555,040)	(1,476,529)	(3,089,940)
Cash flows from financing activities			
Proceeds from issuance of ordinary share capital	-	6,300,000	6,300,000
Cost of share issue	-	(464,661)	(464,661)
Net cash from financing activities	-	5,835,339	5,835,339
Net (decrease)/ increase in cash and cash equivalents	(1,909,385)	2,667,621	(486,528)
Cash and cash equivalents at the start of the period	2,510,884	2,997,412	2,997,412
Cash and cash equivalents at the end of the period	601,499	5,665,033	2,510,884

Consolidated statement of changes in equity (unaudited)

	Share capital £	Share premium account £	Capital restructuring reserve £	Retained earnings £	Total £
As at 30 April 2016	**663,911**	**17,470,417**	**6,486,077**	**(21,213,507)**	**3,406,898**
Issue of shares	126,000	6,174,000	-	-	6,300,000
Expenses of share issue	-	(464,661)	-	-	(464,661)
Share-based payment	-	-	-	278,326	278,326
Loss and total comprehensive income	-	-	-	(1,976,836)	(1,976,836)
As at 31 October 2016	**789,911**	**23,179,756**	**6,486,077**	**(22,912,017)**	**7,543,727**
Share-based payment	-	-	-	269,021	269,021
Loss and total comprehensive income	-	-	-	(1,563,409)	(1,563,409)
As at 30 April 2017	**789,911**	**23,179,756**	**6,486,077**	**(24,206,405)**	**6,249,339**
Share-based payment	-	-	-	269,627	269,627
Loss and total comprehensive income	-	-	-	(1,487,480)	(1,487,480)
As at 31 October 2017	**789,911**	**23,179,756**	**6,486,077**	(25,424,258)	5,031,486

Share capital
The share capital represents the nominal value of the equity shares in issue.

Share premium account
When shares are issued, any premium paid above the nominal value is credited to the share premium reserve.

Retained earnings
The retained earnings reserve records the accumulated profits and losses of the Group since inception of the business.

Capital restructuring reserve
The capital restructuring reserve arises on the accounting for the share for share exchange. It represents the difference between the value of the issued equity instruments of Ilika Technologies Limited immediately before the share for share exchange and the equity instruments of Ilika plc along with the shares issued to effect the share for share exchange.

Notes to the consolidated financial statements

1. Accounting policies

Basis of preparation

The interim financial statements, which are unaudited, have been prepared on the basis of accounting policies consistent with International Financial Reporting Standards ("IFRSs") adopted by the European Union. The accounting policies are the same as applied in the Group's latest financial statements.

The interim financial statements do not include all of the information required for full annual financial statements and do not comply with all the disclosures in IAS 34 'Interim Financial Reporting'. Accordingly, whilst the interim financial statements have been prepared in accordance with IFRS they cannot be construed as being in full compliance with IFRS.

The financial information for the year ended 30 April 2017 does not constitute the full statutory accounts for that period. The Annual Report and Accounts for 30 April 2017 have been filed with the Registrar of Companies. The Independent Auditors' Report on the Annual Report and Accounts for 2017 was unqualified and did not include references to any matters which the auditors drew attention by way of emphasis without qualifying their report and did not contain statements under Section 498(2) or 498(3) of the Companies Act 2006.

Going concern

The financial statements are prepared on a going concern basis which the directors believe continues to be appropriate. The Group meets its day to day working capital requirements through existing cash resources which, at 31 October 2017, amounted to £3.9m. The directors have prepared projected cash flow information for the period ending twelve months from the date of their approval of these financial statements. On the basis of this cash flow information the directors believe that the Group will be able to continue to trade for the foreseeable future.

2. Loss per share

Loss per ordinary share have been calculated using the weighted average number of shares in issue during the relevant financial periods. The weighted average number of equity shares in issue and the earnings, being loss after tax, are as follows:

	Unaudited Six months ended 31 Oct 2017	**Unaudited Six months ended 31 Oct 2016**	**Audited Year ended 30 Apr 2016**
	Number	**Number**	**Number**
Weighted average number of equity shares	78,991,110	67,144,371	73,122,617
	£	**£**	**£**
Loss, being loss after tax	(1,487,480)	(1,976,836)	(3,540,245)

The loss attributable to ordinary shareholders and weighted average number of ordinary shares for the purpose of calculating the diluted earnings per ordinary share are identical to those used for basic earnings per share. This is because the exercise of share options and warrants would have the effect of reducing the loss per ordinary share and is therefore not dilutive under the terms of IAS 33.

– Ends –