Hudson Surface Technology

Hudson Surface Technology, Inc.
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Dr. Eungjoon Jo – CEO
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MANAGEMENT TEAM
Dr. Eungjoon Jo – CEO
Dr. Yangsun Kim – CSO

INDUSTRY
Life-Sciences Research/
Healthcare Diagnostics

CURRENT INVESTORS
- Dr. Eungjoon Jo
- Dr. Yangsun Kim
- Dr. Joon H. Jang

FUNDING TO DATE
$4,300,000

FINANCING SOUGHT
$4,000,000

USE OF PROCEEDS
- US Sales & Marketing (Current Product)
- Product Development (Next Generation Product)

BANK
JP Morgan Chase & Co.

LAW FIRM

ACCOUNTING FIRM
SEIL LLP

COMPANY DESCRIPTION

Company: HST is a surface science and instrumentation know-how company developing and supplying sample preparation consumables ("sample plates") used to study proteins. In particular, HST's products and technology dramatically improve performance of a key, research-grade instrument (MALDI-TOF MS) used to discover protein markers for disease.

HST is currently field-testing *and filling initial orders* for sample plates, accelerating the discovery of protein markers for conditions like breast, ovarian and cervical cancers. 1/10th the price of comparable accessory plates, users save money, gain performance and increase productivity. Importantly, HST's products and know-how will also make it possible to deploy clinical-grade instruments for wide-spread, routine screening and diagnosis – just as clinical-grade MRI machines are today.

HST's strategy is to:
(a) Sell sample plates to research-grade instrument users to build a cash-flow positive business, engage thought leaders, and accelerate marker identification.
(b) In parallel, develop and then introduce clinical-grade instrumentation for diagnostic use based on these protein markers, multiplying demand for HST sample plates and related equipment.

Management: Dr. Kim supplies the combined expertise in instrumentation, surface science, and protein science driving HST's innovations.

Dr. Jo combines a proven record of business leadership (CEO and Chairman roles in pharmaceuticals & insurance, including 12 major M&A deals) with a strong reputation within Korea and an extensive network. It was this network that secured HST's startup funding and current manufacturing base.

TARGET MARKETS

Current Market: The research-grade consumables market comprises laboratories in major universities, research institutions and national laboratories. 12-15,000 research-grade instruments are currently in use worldwide, driving a > $25 million/year demand for sample plates & related supplies. The current market for the instruments themselves is roughly $600 million/year (500-1000 instruments).

HST is already working with early adopters and thought leaders – who are testing *and buying* sample plates now. These include:

- Harvard Medical School,
- University of Michigan
- UC Davis
- Argonne National Laboratory,
- Fred Hutchinson Cancer Research Center,
- Ohio State University
- Yonsei University, and others.

Distributors have been engaged in Japan (Shimadzu GLC and KYA Technologies), France (Laser BioLabs), and Germany (SunChrome GmbH).

Future Market: The target market for clinical-grade MALDI TOF MS for encompasses as many as 2.5 million health care centers world-wide with a staff of 10 or more (US Census data).

HST foresees introduction of clinical-grade instruments beginning in 2012-2013, with the number of systems in use surpassing research-grade instruments in 2015.

These projections put total annual demand for HST products at > $100 million by 2014, growing to > $1 billion by 2019. HST is targeting a 33 % market share in 2015 & beyond.

COMPETITION

Current Market: Sample plates are currently supplied by instrument producers. Major MALDI-TOF MS instrument vendors include:

- ABI (Applied Biosystems, part of Life Technologies Corporation)
- Bruker Daltonics (part of Bruker Corporation)
- Shimadzu Corporation
- Waters Corporation

These large, international corporations provide advanced analytical instrumentation to R&D facilities. Each offers multiple analytical technologies utilizing deep technical knowledge of instrumentation and its applications. For MALDI-TOF MS, they compete over features, sensitivity, and the latest capabilities.

Their focus on advancing *overall instrument* performance leaves them weak in surface science and manufacturing know-how for sample plates – which they view merely as enabling components.

HST combines application, instrumentation, and surface science knowledge with semiconductor manufacturing connections in Korea. Consequently, HST designs and manufactures superior sample plates – thin stainless steel plates instead of titanium or gold-plated monoliths – at lower cost. This capability is unique to HST.

Future Market: Current instrument producers are aware of the potential for clinical applications, but lack insight into how to lower the operation and acquisition costs for their instruments to meet diagnostic lab needs.

HST controls the sample plate technology needed to simplify and automate instrumentation for the diagnostic market. HST also has related enabling technology under development. Because instrument components are outsourced, and HST has instrumentation design know-how, they face few barriers to entry for instrument production.

MILESTONES

Hudson Surface Technology (directly, or via sister companies Proteonik and ASTA) has achieved the following milestones:

Product Development
- µfocus MALDI plates for MALDI-TOF MS
- Micro-Array MALDI plates
- Affi-MALDI plates
- Glyco-Affi MALDI plates
- Laser Desorption/Ionization (LDI) plates
- Pico-jet Sample Prep Systems
- Functional Magnetic Beads

Lead Customers & Application Partners
- Harvard University Medical School
- Argonne National Labs
- Regeneron Pharmaceuticals
- Genentech, Inc.
- Fred Hutchinson Cancer Research Center
- Ohio State University

Distribution agreements:
- Shimadzu Corporation (Japan)
- KYA Technologies (Japan)
- SunChrom Gmbh (pending – Germany)
- Laser BioLabs (pending – France)

Thought Leader Engagement:
- Prof. Carlito Lebrilla, UC Davis
- Prof. David Misek, Ph.D., University of Michigan Health System
- Prof. Joseph Gardella, Ph.D., SUNY Buffalo

Intellectual Property:
- US Patent 7,598,486
- US Patent Application 20070075241 (allowed)
- WIPO Patent Application WO/2006/083151
- Korean Patents – 0566556, 0553387, 0544860, 0535768
- Korean Patent Application 10-2006-0012641
- Korean Patent Application 10-2005-0123970

Five-Year Financial Projection ($ millions)

	2009 Actual	2010	2011	2012	2013	2014	2015
Revenue	~ 0.1	0.60	1.7	17	37	137	314
EBITDA	--	0.36	1.0	10	19	58	128