

SONOVIA – Update Report

10.04.2022

Stock Exchange
TASESymbol
SONOSector
TECHNOLOGYSub-sector
**ELECTRONICS &
OPTICS**Stock price target
NIS 30.7Closing price
NIS 9.1Market cap
NIS 143.6 MnNo. of shares
15.8 MnAverage Daily
Trading Volume
155 stocksStock Performance
(Since Jan. 2022)
-34.9%

First operation in a leading manufacturing company; outstanding lab results from an experiment with a leading American textile manufacturer; Successful SARS-Cov-2 trial in Italy; signed investment agreement with Meitav Dash in the amount of NIS 10 million; 51% increase in revenues from 2020; the target price remains unchanged.

Sonovia is developing supersonic technology to perform value-added treatments for textiles, which gives fabrics unique properties such as anti-pathogenicity and water repellency.

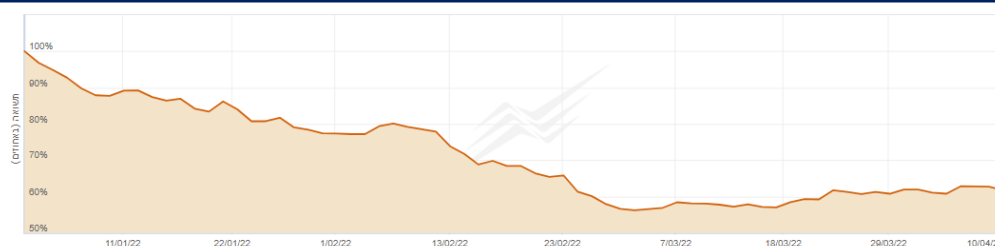
Main activities in the fourth quarter of 2021:

- Bruckner's industrial R&D line launched the first operation of its 2.0 industrial machine.
- Successfully completed an experiment to neutralize the SARS-Cov-2 Delta version in an Italian lab, eliminating 99.95% of the virus after 120 minutes.
- Reported exceptional lab results indicating preservation of antibacterial activity.
- Signed a partnership agreement with PureDenim, a leading Italian manufacturer specializing in the production of denim
- Signed an investment agreement with Meitav Dash for approx. NIS 10 million in exchange for approx. 5.4% of the issued share capital.
- 51% increase in sales from USD 9.5 million in 2020 to USD 14.5 million in 2021

The company's technology is expected to integrate easily with existing production lines and has disruptive potential for the textile application treatment industry - one of the most polluting industries in the world. We estimate that the market for chemicals for the application of functional textiles and the market for textile dyes, is estimated at a combined value of approx. USD 15.8 billion.

The company is nearing a critical stage of starting industrial pilots – the last stage before selling the technology to customers. In our opinion, the company has real and significant potential to disrupt the textile curing industry through its technological platform, but, its main challenge, as with other tech companies, will be the stage of increasing sales **volumes**.

Year	Revenues (000 USD)	EBITDA (000 USD)
2021A	14,500	-2,842
2022E	16,607	665
2023E	28,641	5,083



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Key events in the passing months and Q4 2021:

- On 16 November, the company reported that it had completed setting up its 2.0 industrial machine during H2 2021 and conducted a successful operation on 15 November on Bruckner's industrial R&D line in Germany.
 - The analysis took place over a number of days, during which a sound curing of approximately 10,000 meters of fabrics was performed under industrial conditions and various parameters were measured and verified indicating the commercialization capability of the technology developed by the company.
 - The machine is an industrial textile curing machine using the first ultrasound waves of its kind in the world, designed in a way that allows it to impart unique properties to fabrics without the need for contaminants.
 - This successful initial operation of the machine is a **significant milestone on the road to the commercialization of the technology** developed by Sonovia. The machine installed in Bruckner is a completely industrial curing machine with a configuration similar to what will be sold to the customer. There has been significant technological progress throughout the development and integration process.
 - In the coming months, Sonovia expects to install a second machine at Delta's Innovation Center in Israel.
- On November 16, the company reported that it had received test results from an outside lab indicating high antibacterial activity after 50 industrial washes and 50 home washes of four different types of fabrics treated by the company for a leading American textile manufacturer in the medical market. Before that, **the technology to give fabrics resistance to industrial washability did not exist in the world**, making it a **significant breakthrough** that could allow for **widespread applications** such as textiles in hospitals, hotels and more.
 - The results of the microbiological lab indicate neutralization of over 99.9% of the bacteria tested, the highest possible result according to the AATCC100 standard in this laboratory and neutralization of over 99.999% of the bacteria (Log-7.5) according to ISO20743, a result that is at the upper limit of this standard.
 - On March 5, the company received test results from an external lab that indicate the maintenance of high antibacterial activity in the fabric, which treated the company's technology after more than 100 home washes of the fabric at 40 degrees Celsius. This test was done following a laboratory test from February 2022, the results of which indicate that fabric treated by the company maintained high antibacterial activity after more than 75 washes under stringent conditions defined by a potential taker of the company.
 - The above results are advances in the field of textile care and its resistance to

Key events in the passing months and Q3 2021:

- On November 14, the company announced that the U.S. Environmental Protection Agency (EPA) was conducting an investigation into its activities in the country.
 - Sonovia has been working with the US Food and Drug Administration (FDA) for several months to regulate its masks under the classification of "medical product".
- On November 30, the company received a professional opinion from Prof. Amos Adler, director of the Microbiology Laboratory at Ichilov Hospital, who serves as the company's consultant, according to which the antiviral effect found in previous tests of fabrics treated with the company's technology is expected to withstand the Omicron variant of COVID-19, as well.
- On December 5, an investment agreement was signed between the company and Meitav Dash Provident and Pension Ltd., according to which the company will allocate 854,000 shares to Meitav Dash in exchange for NIS 10 million (at a price of NIS 11.7 per share). Meitav Dash is expected to become a stakeholder in a company that holds about 5.4% of the issued share capital.
- On April 5, the company entered into a strategic cooperation agreement and actual start of work with PureDenim, a leading Italian manufacturer specializing in the production of denim clothing, for the development of indigo dyeing of fabrics and denim fibers using the company's ultrasonic technology.
- During 2021, the **company's sales totaled about \$ 14.5 million** compared to about \$ 9.5 million in 2020. The increase in sales is mainly **due to the constant growth of the company's customer base around the world and especially in the US**. The increase in revenue allows the company to continue to invest large sums in R&D towards the installation of a commercial industrial machine during 2022.

To read more about the company and the market in which it operates, see our [initiation report](#).

Investment Thesis

Sonovia is an Israeli high-tech company that focuses on the research and development of sound-based technology for performing value-added textile treatments in an environmentally friendly manner, which gives fabrics unique properties. Sonovia's anti-pathogenic application, which provides over 99% active protection against viruses (including covid-19), bacteria, and fungi, is already generating revenues (over \$9.5 million in 2020) and is tested by leading brands and manufacturers. The applicative water-repellent treatment developed by the company (for which the company filed a provisional patent application) was rated by an independent international laboratory, a rating of 100 under the international standard (AATCC-22), the highest rating under that standard. Additional applications - flame retardancy, dyeing, "DryFit", and more – are either in R&D, or in the company's R&D pipeline.

Sonovia operates within the textile industry, which is constantly growing yet is currently at a tipping point: Increased consumer awareness of and preference for textiles produced with a low ecological footprint, coupled with increasingly stringent regulation and enforcement of chemical use, are expected to drive a significant industrial change as manufacturers are already forced to seek innovative, 'green' solutions.

On November 15, 2021, the company ran its successful initial operation of its industrial machine 2.0 in Bruckner's industrial R&D line in Germany. This successful initial operation of the machine is evidence of the company's future operations and is a significant milestone on the way to the commercialization of their technology.

Sonovia's technology and its advantages over conventional methods and its ongoing activity with leading brands and OEMs across several key markets have the potential to disrupt the textile finishing and dyeing industries significantly and increase demand for new functional products. Realization of that potential depends greatly on successful entry into various verticals, achieving a global installation base, and creating brand awareness.

Sonovia's technology utilizes ultrasonic energy to physically infuse textiles with the required functional compounds, based on the required application, via a sustainable process. The Sono-finishing process eliminates the need for polymeric chemical binders and other harmful chemicals and dramatically reduces

water and chemistry consumption in the process.¹ As an example of the effectiveness of the technology, here are the results of the company's anti-pathogenic application:

- High performance: Sonovia's anti-pathogenic application displays 99.9% elimination of viruses (including SARS-COV-2) and bacteria.
- High durability: Fabrics treated with Sonovia's technology exhibit high durability to laundry as well as to high temperatures;²
- Versatility: Sonovia's technology applies to all types of textiles;
- Cost-effectiveness and sustainability: Sonovia's technology may reduce up to 95% of the water consumption compared with conventional textile wet-finishing and eliminate chemical binders' need.

The Sono-finishing process vis-à-vis traditional methods – a comparative overview

	Padding	Extrusion	Sono-finishing
Applicability to all textile compositions	Requires different formulas and chemical binders	Only synthetic	Yes
Durability to industrial laundry	Moderate to poor	Very high	Very high ³
Durability to home laundry	Moderate	High	Moderate (expected to improve with R&D) ⁴
Durability to high-heat	Low	High	High
Cost-effectiveness	High	Low	High
Sustainability	Moderate to poor	Poor	High
Scalability	High	Low	High

Source: Sonovia and F&S analysis

Sonovia operates two distinct departments:

- (1) The personal safety department, which currently operates a B2C model: Direct sales of branded personal protective products – such as the SonoMask – to end-clients in the private sector;
In 2020, SonoMask sales exceeded \$9.5 million. In H1/2021, revenues amounted to \$5.7 million.
Sales of the company's products amounted to more than USD 9.5 million during 2020, and about USD 14.5 million in 2021.

¹ Chemical and water consumption varies per application.

² Additional durability assessments to different washing protocols need to be executed.

³ Pending additional assessments

⁴ Pending additional assessments

(2) The Sono-applications department, which is due to operate under a B2B model:

- Capital sales of machines; with Brückner Trockentechnik GmbH & Co. as the machinery partner, global market penetration is expected to be rapid and aggressive.
- Repeating sales of required chemical formulations are expected to become the company's core revenue stream (the current install base of the Brückner alone is over 5,000 machines).
- Potential revenues from “Sonovia-inside” trademark tags

The company's vision is to develop the world's most green and advanced technology for applicative textile treatments.

Sonovia operates within the functional textile finishing agents market was valued at \$5.2 billion in 2020 and is projected to exceed \$6.9 billion by 2027, at a CAGR of 3.9%. Sonovia estimates the TAM for its anti-pathogenic application for its four verticals – medical textiles, hospitality textiles, sportswear, and automotive upholstery – at an aggregated value of \$1.56 billion.

Sonovia also aims to enter the textile dyeing market, which was valued at \$9.4 billion in 2018 and is projected to reach \$15.5 billion by 2026, growing at a CAGR of 6.3% from 2019 to 2026. While Sonovia’s entry into the textiles dyeing market is pending upon successful development and proof-of-concept, which are expected in the near future, its potential to disrupt the textile dyes market is equal – if not greater – than its potential to disrupt the textile finishing market.

In addition, the company operates under a European grant designed to support the fight against Hospital Acquired Infections (HAIs). Hospital Acquired Infections (HAIs) represent a persistent challenge in the healthcare sector, exacerbated by covid-19. HAIs affect hundreds of millions of patients worldwide each year, leading to significant morbidity and mortality as well as financial losses for health systems:

- 136,000 annual deaths in the US and Europe are attributed to HAIs.
- The direct financial burden of HAIs is estimated to account for €7 billion in Europe and \$6.5 billion in the US. Yet, research suggests that the total (direct + indirect) economic burden is significantly higher – up to \$45 billion per annum.

Textiles with anti-pathogenic properties show great promise in reducing the prevalence of HAIs and their associated economic burden. Evidence indicates that textiles treated with anti-pathogenic reduce HAIs rate dramatically and could result in cost reduction of up to €8,038 million. The severe impact of covid-19 on hospitals has elevated awareness of the speed and breadth with which HAIs spread in healthcare institutions and is expected to act as a catalyst on institutional demand for anti-pathogenic textiles, especially as novel solutions are proven effective in eliminating SARS-CoV-2 and other pathogens.

Covid-19 is also a catalyst for the rapidly growing interest in textiles with anti-pathogenic properties by additional verticals, such as the hospitality market, the sportswear market, and the automotive upholstery market. Sonovia holds a competitive advantage in the latter: Fabrics treated by Sonovia's durable anti-pathogenic application show elite anti-microbial and anti-viral performance while eliminating the use of hazardous chemicals.

We believe Sonovia is on a path for growth and success on a global scale:

- Sonovia develops a novel technological platform, envisioned to become the future incumbent technology for performing textile wet-finishing applications, in a versatile, cost-competitive and sustainable process.
- Sonovia's technology has been endorsed by the "*Fashion for Good*" accelerator and by the European Commission's SME program for its potential in fighting Hospital-acquired infections and dramatically reducing the ecological footprint of the fashion industry.
- Sonovia partnered with a globally-renowned designer and producer of finishing systems for textiles with a presence in 90 countries and an installed base of over 5,000 machines, and is already conducting pilot tests with leading brands in the fashion, sportswear, and automotive verticals, and has a clear strategy and R&D pipeline for the next 24 months.
 - On November 15, 2021, Sonovia successfully ran an initial operation in Bruckner's Industrial R&D line in Germany.

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