# Adsorptive separation helps achieve carbon neutrality

of technology development. We expect that by 2030, the domestic demand for PLA will reach 3.4mt, representing a lactic acid purification resin market of at least Rmb1.6bn. The Company has established excellent cooperation with leading domestic PLA producers such as Jindan Lactic Acid Technology and BBCA Biochemical and is strongly positioned to capitalize on incremental demand in the market. The Company is also expected to take up a sizable market share in the BDO purification market (BDO is an upstream material PBAT, another promising biodegradable plastic). In addition, the Company's products are increasingly substituting imported counterparts in the life science segment by delivering environmental friendliness and cost reduction at once.

**CCUS technology has vast potential with "adsorptive separation" set to benefit from carbon trading**

CCUS technology is the most important means to reduce carbon dioxide emissions. According to a forecast of the Department of Science and Technology for Social Development, Ministry of Science and Technology, China's CCUS market will reach an annual value of more than Rmb330bn by 2025, pointing to the huge potential of CCUS technology. Sunresin's proprietary Seplite-CT polymeric adsorbent product with a macroreticular pore structure has been exported to Europe and other markets. With the continued promotion and expansion of CCUS applications in China, we expect the Company to play an important role in carbon capture and help China to have a bigger say in the global carbon trading system.

**Potential risks**

1) Significant price volatility of raw materials; 2) intensified industry competition; 3) progress in various business segments missing expectations.

**Investment strategy**

With carbon neutrality efforts steadily gaining momentum, domestic and overseas NEV markets rapidly expanding, electronic and nuclear grade resins finding increasing applications, and CCUS technology continuing to spread, the Company has entered a phase of rapid growth across segments. We are bullish on the Company's continued rapid earnings growth. We maintain our 2021E-23E earnings forecasts of Rmb323mn/Rmb448mn/Rmb575mn and EPS forecasts of Rmb1.47/2.04/2.62 and reiterate the 2022E target price of Rmb120 (implying 60x 2022E PE with reference to historical valuations of comparable companies) and the "BUY" rating.

| Item/Year | 2019 | 2020 | 2021E | 2022E | 2023E |
|---|---|---|---|---|---|
| Operating revenue (Rmb mn) | 1,012 | 923 | 1,211 | 1,539 | 1,958 |
| Operating revenue (YoY,%) | 60.1% | -8.8% | 31.2% | 27.1% | 27.3% |
| Net profit (Rmb mn) | 251 | 202 | 323 | 448 | 575 |
| Net profit (YoY,%) | 75.4% | -19.6% | 59.8% | 38.8% | 28.4% |
| EPS (Rmb, Basic) | 1.14 | 0.92 | 1.47 | | |

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# Adsorptive separation is a promising technology for global carbon neutrality

## Carbon neutrality is an important goal for the world in the 21st century

**The widespread use of fossil fuels contributes to global warming.** Although electricity and oil, as the "new energy" during the second industrial revolution, have brought about a global leap in productivity since the mid-nineteenth century, the accumulation of carbon dioxide in the atmosphere from the burning of fossil fuels has also contributed to a gradual increase in global temperatures. According to the US National Oceanic and Atmospheric Administration (NOAA), the global average temperature has increased by 1°C since 1880, which has triggered a variety of climate anomalies such as the melting of the North and South polar ice caps, local climate change, and frequent extreme weather events. If humans do not limit their carbon emissions, it is expected that the global average temperature will continue to rise by 3°C by 2050, which will cause a significant rise in sea level and have a huge negative impact on the human world.

Fig. 1: Global average temperature, 1880-2020

Source: NOAA

**Achieving "carbon neutrality" is critical for addressing global warming.** In 1992, the *United Nations Framework Convention on Climate Change* (UNFCCC) was signed, kicking off a concerted global effort to address global warming. Following the signing in 1997 of the *Kyoto Protocol* that set the conservative goal of slowing temperature rise by 0.02-0.28 by 2050, the Paris Agreement was signed by 178 countries in 2015 that commits countries to limit the global average temperatu0.05erl aveglobalvperatu0.05e Ificddri

## Adsorptive separation is expected to become an important means to advance carbon neutrality

**Achieving "carbon neutrality" depends on: 1) energy transition** from fossil energy to clean energy; **2) energy conservation** to reduce the carbon footprint of human activity; **3) the development of carbon sequestration technology** to help achieve “net zero emissions," which will give China an edge in the upcoming carbon trading market.

**Adsorptive separation technology plays an important role in all of the above scenarios.** From the energy supply side, adsorptive separation technology can be used to extract and recover energy metals and produce nuclear grade ultrapure water, which can help promote clean energy rapidly; in terms of the intermediate stage, adsorptive separation technology is expected to help the production of bio-based degradable plastics such as PLA and reduce the carbon footprint of petroleum-based degradable

levels in 2020. The world has entered a period of rapid explosion in demand for lithium batteries.

Fig. 5: Domestic NEV production (10k vehicles)

Fig. 6: Global lithium battery installed capacity forecast (GWh)

Source: CAAM, CITICS Research forecast

from the former requires energy-intensive and high-pollution processes such as calci

| | Adsorption method | Precipitation method | Membrane method | Extraction method |
|---|---|---|---|---|
| | Jintai Lithium, etc. | | HXR Lithium, etc. | |
| Salt lakes | Chaerhan Salt Lake | Atacama Salt Lake, Olaroz Salt Lake, etc. | Dong Taijinaier, Xi Taijinaier, Yiliping | Da Qaidam Salt Lake, Balun Mahai Lake |

Source: "Research and development of lithium brine extraction technology" (LIU Dongfan, SUN Shuying, YU Jianguo), CITICS Research

**Lithium brine extraction represents a market of over Rmb10bn in China.** We estimate the size of the domestic market of lithium extraction from salt-lake brine from two dimensions:

**Emerging technologies highlight the importance of gallium.** Gallium compounds are widely used in magnets, LEDs, photovoltaics, RF, switches, etc, especially in consumer electronics, which has an intensive use of many emerging technologies that use gallium. For example, Apple has now equipped its Display Pro XDR, iPad Pro and Macbook Pro products with mini-LED display, in which the LED material must use gallium element. And gallium nitride chargers are also common today, which deliver a charging capacity of more than 100W for faster smartphone charging.

Fig. 11: Gallium-containing mini-LED panel used in iPad Pro

Source: Apple website

**Gallium extraction is a mature and profitable segment of Sunresin.** The Company has been engaged in gallium extraction for many years and won the second prize of National Science and Technology Progress Award in 2018 for its development of “Key

Fig. 12: Gallium (≥99.99%) price (Rmb/t)

Source: Wind, CITICS Research

**Sunresin's adsorptive separation technology thrives in hydrometallurgical applications across key metals.** The Company's hydrometallurgy technology is capable of extracting relevant energy metals such as nickel, cobalt, vanadium and uranium, of which the nickel extraction technology has been granted multiple patents. The Company's nickel and cobalt projects are being actively promoted and are expected to replicate the Company's business model in the salt lake lithium extraction segment to become new sources of profit growth. The uranium extraction segment is also expected to usher in a period of high growth amid the rapid development of nuclear power in China.

Table 9: Sunresin's hydrometallurgy business expansion

| Metal | Progress |
|---|---|
| Nickel | The Company's high-efficiency nickel adsorbent reached the best levels reported by international companies in the performance test of nickel ore in East Asia. With proprietary processes, it has provided nearly Rmb40mn worth of integrated solutions consisting of adsorbent materials and system equipment for overseas customers. |
| Cobalt | The Company's whole production line contract for a DRC-based project is currently in the stage of equipment installation, with the start of production expected in 2022. The project is expected to play a demonstration role and help the Company secure contracts from other cobalt mines in the DRC. |
| Uranium | Stable annual supply for African mines |
| Gold | Stable supply of adsorbents worth over Rmb1mn for Europe and Africa |

Fig. 14: Schematic of ultrapure water production within a power plant (blue and green for cation and anion exchange resin, respectively)

Source: “Understanding Ultrapure Water and the Difficulties with pH Measurement” (YOKOGAWA website)

**Electronic and nuclear grade ultrapure water requires ion exchange resins with high uniformity.** Uniform particle size (UPS) resins have unique hydrodynamic properties and exhibit unique properties such as singular and full operational efficiency during the exchange and regeneration of the resin. With outstanding performance for applications in specific industries, they are currently the only choice for producing

| Brand | DuPont | | Sunresin | | Comparison |
|---|---|---|---|---|---|
| Hydrogen-oxygen form rate (%) | - | ≥95 | - | ≥95 | Flat |
| Delta TOC (ppb) | ≤3 (at 2h rinse) | | ≤1.0 (after 80 bv rinse) | | Excellent |

Source: Each company announcement, CITICS Research Cation resin = H; Anion resin = OH

## Electronic grade resins for ultrapure water production are set to boom with the semiconductor industry

to reach US$384mn by 2030. Considering that the display market's output value is basically 1/4 of that of the semiconductor industry chain, that display and semiconductor resins are close in process and cost, and that the display industry is also in the eve of a big boom of mini-LED and micro-LED displays, we expect resin demand from the display industry to reach Rmb100mn by 2030. In other words, the entire electronic grade resin market size will reach c. US$400mn. **Electronic grade resin is one of the most difficult types to produce among all adsorbent resins, and its supply follows a standard procedure. Sunresin is already working with enterprises including BOE Technology on product verification, and if things go well, it is expected to quickly achieve import substitution and gain an immense headroom for growth.**

Table 11: Ultrapure water and ion exchange resin demand from semiconductor industry, 2017-2030E

| Item | 2017 | 2018 | 2019 | 2020 | 2021E | 2022E | 2025E | 2030E |
|---|---|---|---|---|---|---|---|---|
| Global wafer shipping area (mn square inches) | 11,810 | 12,732 | 11,810 | 12,407 | 14,350 | 15,758 | 21,174 | 33,837 |
| Ultrapure water demand per square inch of wafer ($m^3$) | 0.1013 | 0.1013 | 0.1013 | 0.1013 | 0.1013 | 0.1013 | 0.1013 | 0.1013 |
| Semiconductor industry ultrapure water demand (mn $m^3$) | 1,196.35 | 1,289.75 | 1,196.35 | 1,256.83 | 1,453.66 | 1,599.02 | 2,144.93 | 3,427.64 |
| Resin demand per tonne of water (10-6 $m^3$) | 7.716 | 7.716 | 7.716 | 7.716 | 7.716 | 7.716 | 7.716 | 7.716 |
| Global resin demand ($m^3$/year) | 9,231.06 | 9,951.72 | 9,231.06 | 9,697.69 | 11,216.40 | 12,338.04 | 16,550.25 | 26,447.69 |
| Global resin market (US$100mn/year) | 1.35 | 1.45 | 1.35 | 1.41 | 1.63 | 1.79 | 2.41 | 3.84 |

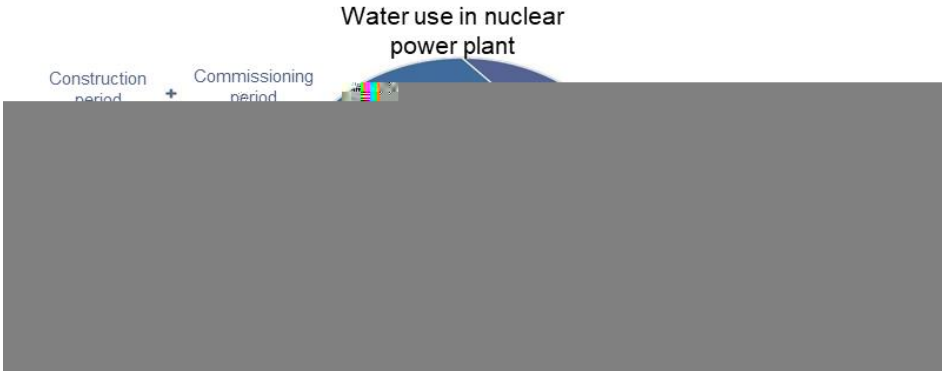
Fig. 17: Nuclear power production by country in 2020 (TWh)

Source: Wind, CITICS Research

**Nuclear power construction during the 13th FYP period missed expectations.** According to the *Mid-*

used in the feedwater and water treatment systems of the first and second circuits of reactors. The supply of reliable ultrapure water to the second circuit of the steam generator is a key technology that ensures the generator's stable operation and its ability to provide steam of acceptable quality. Nuclear grade ultrapure water can reduce fouling on the second circuit, reduce thermal resistance to heat transfer from the first circuit to the second circuit, and increase steam production, in addition to reducing fouling deposits on the generator turbine blades. Moreover, nuclear grade resins that are applied to the first circuit water treatment system in nuclear power plants must have a high regeneration and transformation rate, very low impurity content, good resistance to irradiation decomposition, and ability to operate at higher operating flow rates and rather high temperatures, and the reactions of organic or inorganic impurities released from the system during use must be within allowable limits.

Fig. 18: Schematic of the primary pipes of China's homegrown third-generation nuclear reactor




Source: "Failure analysis and modification of desalination water system in Tianwan Nuclear Power Plant" (TAN Mingyu)

**The domestic nuclear grade ultrapure water adsorbent resin market is expected to reach Rmb1.8bn by 2030, from which the Company stands well to benefit.** Referring to the assumptions in our previously published report, *Sunresin New Materials (300487.SZ) In-depth Tracking Report: R&D-driven rapid growth across resin segments* (4 Jun 2020), we forecast that domestic nuclear power installed power rating will reach 110mn kWh, representing a nuclear grade ultrapure water resin market of c. Rmb1.2bn by 2030, and it will reach Rmb1.8bn if the replacement cycle of resin is taken into account. Sunresin is one of the few domestic nuclear grade ultrapure water resin suppliers and maintains cooperation with multiple nuclear power related enterprises. Compared with leading foreign companies, it has advantages in terms of supply cycle, supply stability and prices and its products are expected to rapidly replace their imported counterparts.

Table 12: Domestic nuclear grade resin market size, 2018-2030E

| Item | 2018 | 2019 | 2020 | 2030E |
|---|---|---|---|---|
| Number of nuclear power units | 45 | 47 | 51 | 110 |
| Installed nuclear power capacity ($10^8$ W) | 459 | 487 | 510 | 1,100 |
| Demand for desalinated water per GW of nuclear power capacity ($m^3$/s*GW) | 0.0037 | 0.0037 | 0.0037 | 0.0037 |
| Nuclear power sector's demand for ultrapure water (106 $m^3$/year) | 5.35 | 5.69 | 5.94 | 12.82 |

| Item | 2018 | 2019 | 2020 | 2030E |
|---|---|---|---|---|
| Resin demand per tonne of ultrapure water ($m^3$) | 0.012 | 0.012 | 0.012 | 0.012 |

It2018

Fig. 19: Domestic plastic and chemical fiber production and GDP per capita (10kt, US$)

Source: Wind, CITICS Research

Fig. 20: Domestic plastic and chemical fiber production and per capita GDP growth

Source: Wind, CITICS Research

**The policy promotes degradable plastics.** China has introduced three phases of restrictions on the production, sale and use of disposable plastics by 2020, 2022 and 2025, respectively. Currently, the production and sale of ultra-thin plastic shopping bags less than 0.025 mm thick and polyethylene agricultural film less than 0.01 mm thick have been banned. Increased prohibitions will be imposed on plastic express delivery packaging materials by 2022 and disposable tableware by 2025.

Table 13: China's laws and regulations on single-use plastics

| Laws and regulations | Type |
|---|---|

| Laws and regulations | Type | Stipulations |
|---|---|---|
| | | Production of daily chemical products containing plastic microbeads should be prohibited. By the end of 2022, the sale of daily chemical products containing plastic microbeads should be banned. |
| | | Non-degradable plastic bags. By the end of 2020, non-biodegradable plastic bags should be prohibited in shopping malls, supermarkets, pharmacies, bookstores and other places in urban built-up areas of centrally-administered municipalities, provincial capitals and cities specifically designated in the state plan, as well as catering packing take-out services and various exhibition activities; and bazaars should regulate and limit the use of non-biodegradable plastic bags. By the end of 2022, the implementation scope should be expanded to all urban built-up areas of cities at and above the prefecture-level and built-up areas of counties in coastal areas. By the end of 2025, trade markets in these areas will ban the use of non-biodegradable plastic bags. Regions, where conditions permit, are encouraged to stop the use of non-degradable plastic bags at trade markets in rural-urban fringe, towns, and rural areas. |
| | | Disposable plastic tableware. By the end of 2020, non-degradable disposable plastic straw should be prohibited from use in the catering industry nationwide; and non-degradable disposable plastic tableware should be prohibited from use in the catering industry in urban built-up areas and scenic spots at prefecture-level or above. By the end of 2022, it is prohibited from using non-biodegradable disposable plastic tableware in the county built-up areas, and for scenic spots catering services. By 2025, the consumption intensity of non-biodegradable disposable plastic tableware will drop by 30% in catering takeaway in cities above the prefecture-level. |
| | | Plastic packaging for express delivery. By the end of 2022, postal and express delivery outlets in provinces and cities such as Beijing, Shanghai, Jiangsu, Zhejiang, Fujian and Guangdong will be prohibited from using non-degradable plastic packaging bags, and disposable plastic woven bags, and should reduce the use of non-degradable plastic tape. By the end of 2025, non-degradable plastic packaging bags, plastic tapes, and disposable plastic woven bags are prohibited from use in postal and express delivery outlets nationwide. |
| | Restriction | Disposable plastic products for hotels and restaurants. By the end of 2022, star hotels, restaurants and other venues nationwide will no longer provide disposable plastic products on their initiative, and may provide the relevant services by setting up self-service purchasers and providing rechargeable detergents or otherwise. By the end of 2025, the implementation scope will be expanded to all hotels, restaurants, and residential accommodations. |
| *Notice on Solid Promotion of Plastic Pollution Control* | Prohibition | Strengthen the supervision and inspection of plastic products prohibited from production and sale. Local market supervision departments shall carry out quality supervision and inspection of plastic products and investigate and persecute the production and sale of ultra-thin plastic shopping bags less than 0.025 mm thick and polyethylene agricultural plastic films less than 0.01 mm thick according to law; and carry out law enforcement of disposable foaming plastic tableware, disposable plastic cotton swabs and daily chemical products containing plastic microbeads that are included in the catalogue of products to be phased out according to the prohibition deadline specified in the Opinions. Local industry and information technology departments shall, in conjunction with relevant departments and in accordance with the requirements of local government deployments, assess local enterprises' capacity of plastic products required to be phased out and guide the relevant enterprises to adjust production in a timely way. |

| Laws and regulations | Type | Stipulations |
|---|---|---|

| Item | 2017 | 2018 | 2019 | 2020 | Annual growth | 2021E | 2025E | 2030E |
|---|---|---|---|---|---|---|---|---|

the capacity under construction and proposed to be built has reached 1.5mtpa. The refining process is particularly important in the production of lactic acid, which requires the use of resin to remove heavy metals, proteins, pigments and other impurities from the fermentation broth to obtain lactic acid products of different grades, such as food grade, refined grade and high purity grade, of which high purity grade lactic acid is mainly used in the production of PLA. Sunresin has deep expertise in food processing and has secured orders from leading PLA producers such as Jindan Lactic Acid Technology and BBCA Biochemical.

Table 16: Major PLA producers (10ktpa)

| **Company** | Jindan Lactic Acid Technology | Kingfa Sci & Tech | BBCA Biochemical | Hisun Biomaterials | COFCO Biotechnology |
|---|---|---|---|---|---|
| **Capacity** | Lactic acid: 12.8<br>Lactide: 1<br>Polylactic acid: 0.1 | - | Lactic acid: 15<br>Polylactic acid: 10 | Polylactic acid: 6.5 | Polylactic acid: 3 |
| **Capacity under construction** | High gloss pure lactic acid: 5<br>Polylactic acid: 1 | Polylactic acid: 3 | Lactic acid: 50<br>Polylactic acid: 30 | Polylactic acid: 15 | Polylactic acid: 10 |

Source: Company announcement, CITICS Research

**Lactic acid purification opens up an adsorbent resin market valued in the hundreds of millions of RMB.** We expect that the penetration rate of PLA in degradable plastics will reach 40% and 50% in 2025 and 2030, respectively, corresponding to a PLA demand of 1.3mt and 3.4mt. According to our research, each 10kt of lactic acid production requires c. 40m$^3$ of adsorbent resin for purification. Assuming the average price of resin at 80 RMB per liter, it will represent a market of Rmb600mn for adsorbent resin by 2025 and Rmb1.6bn by 2030, making adsorbent resin for purification another high-quality business segment of Sunresin.

**With performance and other factors considered, PLA+PBAT is the mainstream direction of biodegradable plastics at present.** Although PLA has high strength, good thermoplasticity and good biocompatibility and is more in line with the direction of carbon emissions reduction, it is brittle and has poor thermal stability, weaknesses that can be well complemented by PBAT that has good ductility, impact resistance and thermal stability and is often used to toughen other brittle plastics. The current mainstream degradable material solution in the market is to co-extrude PLA and PBAT (to integrate their hardness and brittleness properties). It is expected that the share of degradable plastics will exceed 60% by 2025 and rise further by 2030.

Fig. 23: Price/performance comparison of common biodegradable plastics

Source: "Development and trends of biodegradable plastics" (LU Haixu)

**Domestic PBAT capacity expansion drives up demand for upstream raw material BDO.** According to industrysourcing.cn, the domestic PBAT production capacity was only 293ktpa in 2020, but the capacity under construction for the period from 2021 to 2023 exceeds 4mt. At present, PBAT is mainly prepared using the direct esterification process in China, with upstream core materials including terephthalic acid (PTA), adipic acid (AA) and 1,4-butanediol (BDO). The BDO consumption per unit of PBAT is between 0.5 and 0.6. Based on the unit consumption of 0.55, it is expected that the new capacity under construction from 2021 to 2023 will have a BDO demand of c. 2.3mt.

Table 17: Domestic PBAT capacity and layout (as of Nov 2021)

| Company | Existing capacity | Capacity under construction | Commissioning/planned commissioning | Planned capacity |
|---|---|---|---|---|
| Xinjiang Blue Ridge Tunhe Chemical Industry Co., Ltd. | 13 | | 2020 | 24 |

| Company | Existing capacity | Capacity under construction | Commissioning/planned commissioning | Planned capacity |
|---|---|---|---|---|
| Jiangsu Sanfame Co., Ltd. | | 4 | | 12 |
| Hubei Yihua Chemical Industry Co., Ltd. | | 6 | | |

| | | | | |
|---|---|---|---|---|
| Inner Mongolia Guangju | Wuhai, Inner Mongolia | - | 12 | - |
| Hualu Hengsheng Chemical | Dezhou, Shandong | - | 18 | 2021-2023 |
| Sanwei Holding | Wuhai, Inner Mongolia | Acetylene-formaldehyde process | 90 | Dec 2026 |
| Dongjing Biological | Wuhai, Inner Mongolia | Hong Kong Guanda acetylene-formaldehyde process | 20 | Jun[ )]TJETQ2 |
| Shenghong Petrochemical | Lianyungang, Jiangsu | Maleic anhydride process | 30 | - |
| Wuheng Chemical | Ningdong, Ningxia | - | 2x11.6 | Commissioned in early Jul TJETQ2 |
| Henan Energy Xinjiang | Baicheng County, Xinjiang | - | 20 | - |
| Foryou Corporation | Taiyuan, Shanxi | Acetylene-formaldehyde process | 30 | - |
| Zhongke Qicheng | Zhumadian, Henan | Acetylene production from natural gas by acetylene-formaldehyde process | 20 | - |
| Shandong Tianyi | | Maleic anhydride process | 5.2ETQ5 | Construction period from TJETQ2 to TJET |
| Inner Mongolia Jiutai | Hohhot, Inner Mongolia | Acetylene-formaldehyde process | 30 | - |
| Zhongguan Petrochemical | Zhuhai, Guangdong | Maleic anhydride process | 10 | - |

involves intensive use of toxic and harmful reagents and the emission of a large amount of organic and metal waste, which is harmful to the environment and human health. In contrast, the enzymatic process is simpler and safer, more environmentally friendly and less costly than the chemical process. Therefore, domestic producers adopting the chemical process lack a competitive advantage compared with overseas.

**The Company has successfully achieved the enzymatic preparation of 7-ACA, which increases the global competitiveness of its 7-ACA products.** Sunresin Technology has been conducting research on enzyme carrier technology for enzymatic production of 7-ACA since 2005 and has cooperated with domestic 7-

Technology Achievements. The Company's Seplite®LXQ resin and Sepsolut® integrated VOC treatment system has been validated by multiple enterprises to deliver an adsorption and removal rate of more than 99.9% for chlorinated volatile organic compounds. Boasting higher safety, greater stability, high precision, long life, high recovery rate, and the ability to recover lost raw materials and solvents while meeting emissions standards, the technology has become a powerful tool in the field of VOC treatment.

## New plants will sol753163

Table 22: Sunresin's earnings, 2019-2023E

| Item/Year | 2019 | 2020 | 2021E | 2022E | 2023E |
|---|---|---|---|---|---|
| Operating revenue (Rmb mn) | 1,012 | 923 | 1,211 | 1,539 | 1,958 |
| Operating revenue (YoY,%) | 60.1% | -8.8% | 31.2% | 27.1% | 27.3% |
| Net profit (Rmb mn) | 251 | 202 | 323 | 448 | 575 |
| Net profit (YoY,%) | 75.4% | -19.6% | 59.8% | 38.8% | 28.4% |
| EPS (Rmb, Basic) | 1.14 | 0.92 | 1.47 | 2.04 | 2.62 |
| Gross margin | 49.8% | 46.6% | 47.4% | 48.3% | 48.8% |
| ROE (%) | 19.9% | 12.2% | 15.1% | 17.8% | 19.2% |
| BVPS (Rmb) | 5.74 | 7.51 | 9.73 | 11.46 | 13.65 |
| PE (x) | 94.5 | 104.6 | 65.4 | 47.2 | 36.7 |
| PB (x) | 18.8 | 12.8 | 9.9 | 8.4 | 7.0 |

Source: Wind, CITICS Research forecast Note: Closing price as of 27 Jan 2022

## Valuation and rating

### 1) PE valuation

**Comparable companies in the industry are valued at an average PE of 57x in 2022.** We identify Zhengguang Industrial, Jiuwu Hi-Tech and Nanomicro Technology as comparable companies, whose average PE in 2022 is 57x according to Wind consensus estimates.

Table 23: Valuation of Sunresin vs. comparable companies, 2020-2023E

| Ticker | Company | Share price | EPS | | | | PE (x) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2021E | 2022E | 2023E | 2020 | 2021E | 2022E | 2023E |
| 301092 | Zhengguang Industrial | 34.00 | 1.27 | 1.00 | 1.21 | 1.58 | - | 34.0 | 28.1 | 21.5 |
| 300631 | Jiuwu Hi-Tech | 33.56 | 0.76 | 0.70 | 1.02 | 1.36 | 22.74 | 49.0 | 33.7 | 25.4 |
| 688690 | Nanomicro Technology | 63.55 | 0.20 | 0.35 | 0.57 | 0.85 | - | 174.3 | 110.0 | 73.7 |
| Average | | | | | | | | 85.8 | 57.3 | 40.2 |
| 300487 | Sunresin New Materials | 96.19 | 0.94 | 1.47 | 2.04 | 2.62 | 92.9 | 65.4 | 47.2 | 36.7 |

Source: Wind, CITICS Research forecast Note: Closing prices as of 27 Jan 2021; EPS forecasts for comparable companies are Wind consensus estimates

### 2) Vertical PE valuation

**The Company's average PE over the past 5 years is 50x.** The Company's PE (TTM) from 2016 to the present time is 50x with a mean ±1 standard deviation PE range of 34x-67x. Anticipating high growth of earnings and continued valuation matching in the next 2-3 years thanks to capacity ramp-up and increasing penetration in the downstream markets, and selecting the Company's historical mean PE plus 1 standard deviation as reference, we assign the Company 67x 2022 PE.

| Income Statement | | | | | (RMB mn) |
|---|---|---|---|---|---|
| Indicator | 2019 | 2020 | 2021E | 2022E | 2023E |