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electroCore, Inc. (ECOR: NASDAQ)

Currency Pressures Nick OUS Revenues

Based on our multiple of earnings model and a 20% discount rate, electroCore is valued at approximately $4.75 per share. Our methodology applies a 20x multiple of earnings to 2027 EPS and discounts the result to 2022.

Current Price (11/3/2022)	$0.33
Valuation	**$4.75**

OUTLOOK

electroCore is a commercial company marketing its gammaCore vagus nerve stimulation device in multiple migraine and cluster headache indications. The device non-invasively stimulates the vagus nerve which treats headache. It delivers an electrical pulse to activate the vagus nerve in the neck. Numerous clinical trials have been conducted supporting the efficacy and safety of gammaCore. Additional trials are underway for indications in stroke, PTSD, TBI and PT headache.

Sales are advancing in multiple areas: VA in the US, NHS in the UK, commercial, cash pay & distributors. Low penetration at the VA, expansions of the NHS program and continued efforts with commercial payors support topline advancement. Numerous distribution agreements signed around the globe will also layer on additional sales opportunities most recently with Joerns Healthcare, which is a domestic distributor in a variety of care settings.

Associations with the VA, NHS, CVS, Express Scripts & others combined with the strong safety and efficacy data for gammaCore support a long runway for topline growth in the US, European and Asian markets.

Our valuation assumes first positive earnings in 2025 and employs a multiple of 2026 earnings to determine target price.

SUMMARY DATA

52-Week High	**1.03**
52-Week Low	**0.24**
One-Year Return (%)	**-65.6**
Beta	**0.99**
Average Daily Volume (sh)	**238,218**
Shares Outstanding (mil)	**71.2**
Market Capitalization ($mil)	**23.5**
Short Interest Ratio (days)	**4.94**
Institutional Ownership (%)	**18.7**
Insider Ownership (%)	**15.3**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2022 Estimate	**N/A**
P/E using 2023 Estimate	**N/A**
Zacks Rank	**N/A**

Risk Level	**Above Average**
Type of Stock	**Small-Growth**
Industry	**Med-Tech Devices**

ZACKS ESTIMATES

Revenue

(In millions of USD)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2021	$1.2 A	$1.3 A	$1.5 A	$1.5 A	$5.5 A
2022	$1.9 A	$2.2 A	$2.0 A	$2.2 E	$8.3 E
2023					$14.1 E
2024					$22.2 E

Earnings per Share

	Q1	Q2	Q3	Q4	Year
2021	-$0.11 A	-$0.06 A	-$0.06 A	-$0.07 A	-$0.29 A
2022	-$0.08 A	-$0.08 A	-$0.08 A	-$0.08 E	-$0.31 E
2023					-$0.25 E
2023					-$0.08 E

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WHAT'S NEW

Third Quarter 2022 Financial and Operational Results

For the third quarter of 2022, electroCore Inc. (NASDAQ: ECOR) posted revenues of approximately $2.0 million vs. $1.5 million in the prior year period. While year over year growth was up 33%, sales decelerated in the third quarter due to slower sequential trends in Veteran's Affairs (VA), outside of US and commercial revenues. Since our previous update in August, electroCore has participated in several investor conferences, published findings demonstrating symptom reduction in opioid abuse patients, received new patent grants and presented data supportive of gammaCore in the treatment of traumatic brain injury (TBI). The company has also added a new partnership with Joerns Healthcare to distribute and bill gammaCore Sapphire to selected managed care health systems.

Third quarter 2022 financial and operational results were provided in a press release and Form 10-Q filed with the SEC on November 2nd. A conference call with investors and analysts was held immediately following the release. Third quarter revenues of $2.0 million matched revised company guidance and produced a net loss per share of ($0.08) compared to our estimates of ($0.06). 4Q:22 guidance anticipates revenues of $2.2 to $2.3 million.

Operational and scientific highlights for 2022 include:

- Publication of PREMIUM II trial results for migraine prophylaxis - January
- Launch of US telehealth portal and online store - January
- nVNS receives Breakthrough Device Designation for Post-Traumatic Stress Disorder - January
- Shareholder letter and 2021 business update - January
- TRANSIT study enrollment completed - February
- Three abstracts presented at International 2022 Stroke Conference - February
- nVNS selected for DoD BOOST program – April
- Details of SAVIOR-1 published in Frontiers in Neurology – April
- Availability of gammaCore at National Spine and Pain Centers – May
- Mayo Clinic study of gammaCore for post-COVID syndrome treatment – July
- Emory study on opioid use disorder shows reduced symptoms using gammaCore – September
- Four US patents issued – September
- Oral presentation given at NCS Annual Meeting on Traumatic Brain Injury – October
- Distribution agreement signed with Joerns Healthcare – November
- Received first purchase contract under the BOOST program - November

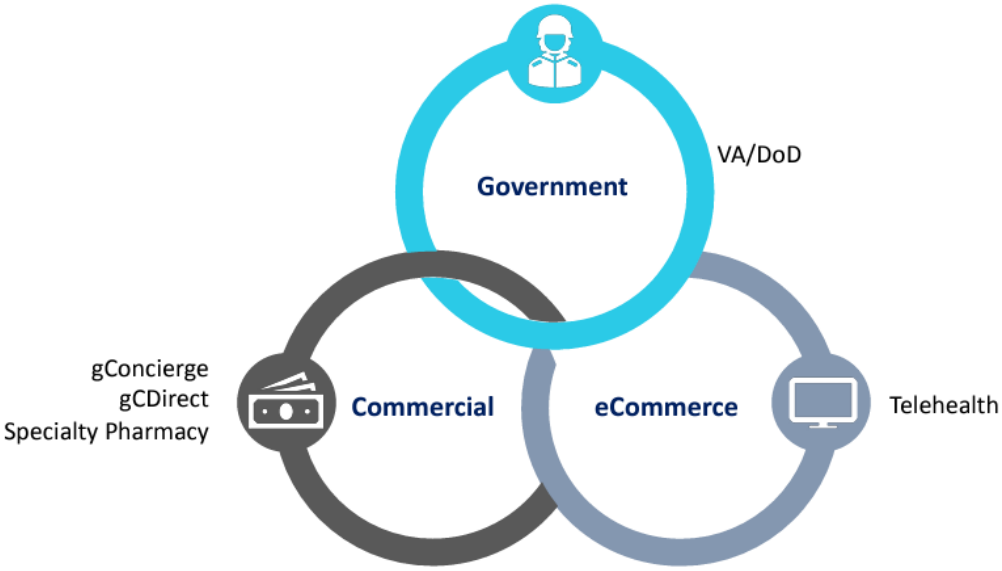
In the financial domain, revenues for 3Q:22 were $2.0 million, a 33% increase over the $1.5 million generated in 3Q:21. Net loss was ($5.5) million in 3Q:22 compared to our ($4.4) million estimate and lower than 3Q:21 net loss of ($4.0) million. On a per share basis this was an ($0.08) and ($0.06) loss, respectively.

For third quarter of 2022 ending September 30, 2022 and versus the same period in the prior year:

- Net sales were $2.0 million, up 33% due to increases in all channels and the recognition of licensing revenues from the Teijin arrangement. Ex-US revenues were anemic in US dollar terms due to currency changes despite UK revenues rising 11% in local currency;
- Gross margin was 87% versus 76% due to the favorable absorption of labor and overhead costs, and product mix tilted towards longer duration, higher margin therapy, and the contribution of high margin license revenues from Teijin;
- Research & development expenses totaled $1.6 million, rising 240% on increased investment in next-generation, smartphone integrating gammaCore devices;
- Selling, general & administrative expenses of $5.7 million were up approximately 22% from $4.6 million propelled by investments in cash pay, direct-to-physician, direct-to-consumer awareness campaigns and the e-commerce platform;
- Net loss was ($5.4) million versus ($4.0) million with loss per share ($0.08) and ($0.06), respectively;

As of September 30, 2022, cash, equivalents and marketable securities on the balance sheet totaled $21.6 million. Cash burn was ($4.6) million. No financing cash flows were recognized. Cash burn guidance for the third quarter calls for operating use of between ($4.0) to ($4.5) million.

Exhibit I – electroCore US Sales Channels[1]



New Patents Issued

electroCore holds an impressive collection of patents which has recently grown by four. The company is continually refreshing, updating and expanding its intellectual property protection and recently announced four new patent grants which we summarize below. Two patents address the use of a mobile phone for the treatment of medical conditions including several neurodegenerative diseases by using a vagus nerve stimulation device in conjunction with a mobile phone. Mobile devices may also be used to treat migraine headache by coupling through wireless connection to an electrical non-invasive stimulation device. Another patent describes systems and methods for stimulating nerves using electrical impulses and recording the resulting data. Yet another relates a device, system and method of treating a variety of gastrointestinal (GI) disorders. These patents provide a sketch of what the future portfolio of products from electroCore may be with a push towards using the ubiquitous mobile phone to work in conjunction with vagus nerve stimulation devices and expansion into treating neurodegenerative and GI diseases.

Exhibit II – Summary of Patents[2]

Title	Patent #	Filed	Expiry	Region	Filer
Mobile phone for treating a patient with dementia	11,406,825	20-May-19	5-Sep-33	US	ElectroCore
Devices and methods for remote therapy and patient monitoring	11,432,760	29-Oct-21	12-Jan-31	US	ElectroCore
Electrical nerve stimulation to treat gastroparesis, functional dyspepsia & other GI disorders	11,439,818	11-Oct-19	25-Mar-32	US	ElectroCore
Stimulator for use with a mobile device	11,446,491	19-Jan-22	8-Apr-33	US	ElectroCore

[1] Source: electroCore Corporate Presentation August 2022
[2] Compiled by Zacks analysts from corporate and US Patent Office resources

Investigator Led Studies

Opioid Use Disorder
Dr. Douglas Bremner, Professor of Psychiatry and Radiology at Emory University School of Medicine was the primary investigator for a study investigating the benefits of gammaCore Sapphire on patients with opioid use disorder (OUD). In September, results from the study were presented in a published manuscript entitled *Transcutaneous Cervical Vagus Nerve Stimulation Reduces Behavioral and Physiological Manifestations of Withdrawal in Patients with Opioid Use Disorder: A Double-Blind, Randomized, Sham-Controlled Pilot Study* in the journal, *Brain Stimulation*. The study was supported with a grant from the National Institute on Drug Addiction (NIDA), part of the National Institutes of Health (NIH).

The 21-patient, double-blind, randomized, sham-controlled study evaluating subjects with OUD found that non-invasive vagus nerve stimulation (nVNS) reduced psychological and physiological symptoms of acute opioid withdrawal. The results were statistically significant for withdrawal symptoms, distress and pain. Heart rate decreased in nVNS patients by over 4 beats per minute compared to sham. electroCore participated in a pre-submission meeting with the FDA and NIDA to discuss the design of a pivotal trial to treat OUD withdrawal symptoms. NIDA has indicated that it will likely finance the trial.

Traumatic Brain Injury
A study to evaluate the effect of gammaCore nVNS on brain lesion size in traumatic brain injury (TBI) was conducted in a rodent model as described in an October press release. Dr. Afshin Divani, the primary investigator for the study, gave an oral presentation at the Neurocritical Care Society's 20th Annual Meeting held in mid-October 2022. The study examined the ability of nVNS to decrease anxiety and improve motor function after injury.

The structure of the trial evaluated low dose nVNS, high dose nVNS, and employed a control arms. It stimulated the subjects five (low dose nVNS) or ten (high dose nVNS) times over an hour, beginning 30 minutes post-TBI. Magnetic Resonance Imaging (MRI) studies on Day 1 and 7 revealed smaller brain lesion (damage) volume among the nVNS groups compared with the control group. Additional work in this indication will be funded by an Exploratory/Development Research Grant (R21) from the National Institute of Neurological Disorders and Stroke (NINDS).

Commercial

Distribution Agreements
On April 5, 2022, electroCore announced the addition of its first new distribution agreement for 2022 with Teijin Limited for Japan. This brings the total number of distributors to ten covering 23 different countries. The arrangement with Teijin provides upfronts, milestones and license fees in return for the rights to commercialize electroCore's nVNS technology in Japan for a variety of primary headache disorders. Revenues from the upfront will be recognized over the next four quarters with the first tranche of $48,000 in 2Q:22 and the second of $45,000 in 3Q:22. Teijin is responsible for all aspects of shepherding the product through the device approval process with the Japanese Pharmaceuticals and Medical Devices Agency (PMDA) and, after approval and payor coverage, enter into an exclusive commercial supply agreement for gammaCore nVNS. Teijin is committed to minimum purchase commitments once the agreement is in place.

Exhibit III – Summary of electroCore's Distributors[3]

Partner	Announce Date	Region	Term
Pro Medical Baltic	December 2020	Lithuania, Latvia, Belarus, Kazakhstan, Ukraine	Three Years
RSK Medical	January 2021	Canada	Three Years
Medistar	February 2021	Australia	Three Years
Silvert Medical	March 2021	Belgium, Luxembourg, the Netherlands, France	Three Years
East Agency	April 2021	Qatar	Three Years
Kromax	June 2021	Taiw an, China, Malaysia, Singaport, Indonesia	Three Years
Melidonia	December 2021	Cyprus	Three Years
Cyrus	December 2021	United Arab Emirates, Oman	Five Years
Medexsol	December 2021	Saudi Arabia, Bahrain	Five Years
Teijin	April 2022	Japan	

[3] electroCore, Inc. Provides Update on Global Distribution Partners | electroCore. Compiled by Zack's analysts.

National Spine and Pain Centers
Beyond the distribution agreements that electroCore has signed with entities outside of the US, it has expanded its distribution to include the National Spine and Pain Centers (NSPC) inside the US. NSPC is based in Rockville Maryland and offers locations throughout the Eastern seaboard of the United States and Texas. gammaCore will be available for purchase at the more than 130 centers for patients with headache pain. NSPC selected the device to be available in their locations based on gammaCore's a non-invasive and non-pharmaceutical approach to pain management which allows patients to avoid potentially addictive medications. NSPC represents one of the first corporate accounts to work with electroCore and will help increase availability of the gammaCore device.

Joerns Healthcare LLC
electroCore joined with Joerns Healthcare in a partnership to distribute gammaCore Sapphire to managed health care patients. Joerns is responsible for 12.5 million health care lives and will handle adjudications, billing and collections as well as evaluate deductible and co-pay status for gammaCore. electroCore will ship product to customers and provide in-servicing and patient support. It will receive payment from Joerns as it progresses through the collections cycle. Management has guided to a three to four month implementation period as systems are integrated and electroCore's sales team is able to educate clinicians in Joerns' managed care systems.

Regulatory & Clinical

gammaCore Sapphire for Treatment of Post-COVID Syndrome
In a July 7th press release, electroCore announced that the Mayo Clinic would initiate an investigator-led study to assess the efficacy of gammaCore Sapphire non-invasive vagus nerve stimulation (nVNS) in patients with post-COVID syndrome. Post-COVID syndrome includes symptoms such as headache, brain fog, fatigue and gastric distress. These symptoms are similar to central sensitization syndromes, a group of conditions that includes fibromyalgia, chronic fatigue syndrome, and postural orthostatic tachycardia syndrome (POTS).

The post-COVID study is entitled Outcomes of Treatment with Non-invasive Vagal Nerve Stimulation (nVNS) in Post-COVID Syndrome: A Pilot Study. It will be a randomized and single-center, targeting enrollment of 20 subjects at the Mayo Clinic in Rochester, Minnesota. Endpoints include the Post-COVID Functional Status Score as well as an analysis of blood samples for certain chemokines, and positron emission tomography-computed tomography (PET-CT) of the brain to evaluate brain metabolism.

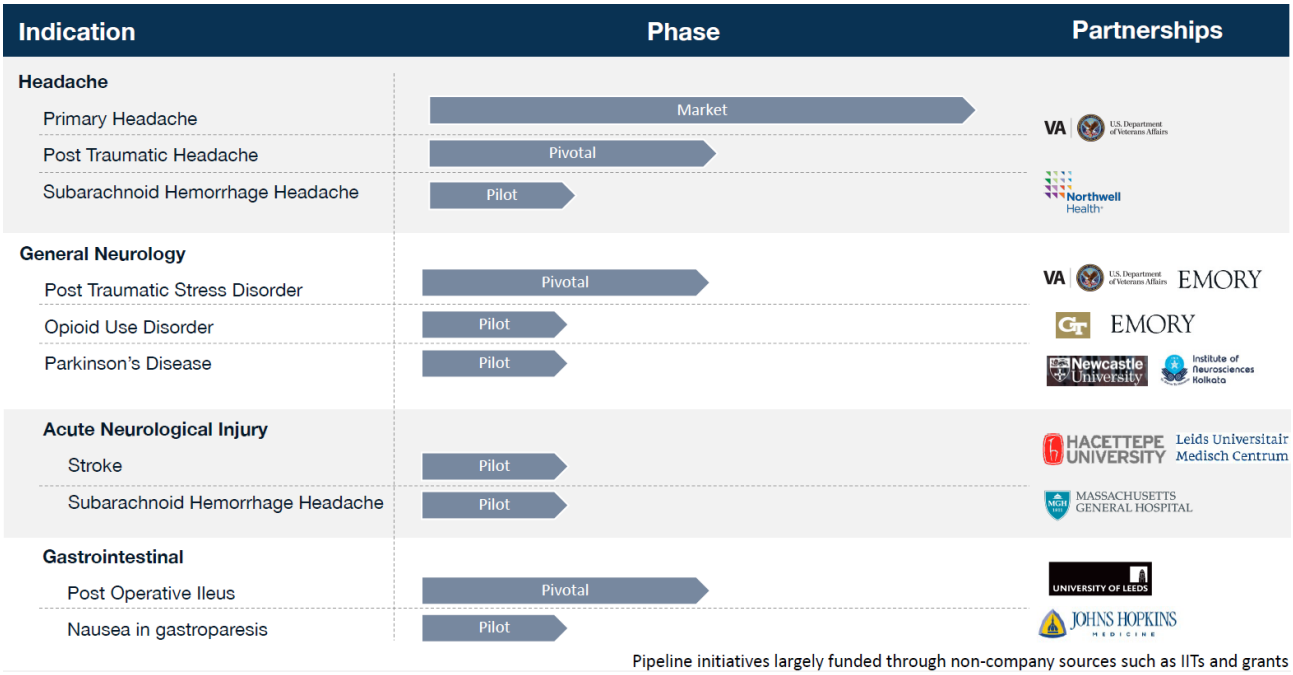
FDA Meetings
electroCore met with the FDA on May 2, 2022 in a pre-submission meeting to cover what is needed to successfully develop a number of indications including post-traumatic stress disorder (PTSD), mild traumatic brain injury (mTBI) or concussion, substance abuse and acute stroke among other conditions. Management expects to hold another meeting with the FDA regarding PTSD.

Department of Defense BOOST Program

electroCore was selected to participate in the Department of Defense's (DoD) Biotech Optimized for Operational Solutions and Tactics (BOOST) Program which is in part funded by the Defense Advanced Research Projects Agency (DARPA). The program seeks to improve training in the intelligence, surveillance, and reconnaissance (ISR) training environment. Investigations conducted using gammaCore have quantified a 20% acceleration in training and a 35% improvement in memory retention during intelligence, surveillance, and reconnaissance (ISR) training. The same participants also exhibited a 25% improvement in attention and mood. If further study confirms the initial findings, electroCore will be expected to provide field ready devices to the US Air Force by 2H:23. The company has signed an agreement with the contractor for the first purchase commitment for this nVNS product which will be called the Tac-Stim[4] for human performance. electroCore is working to expand use of the product to all branches of the US Armed Services.

[4] Tactical Stimulation (Tac-Stim). If it's the military, you've got to have an acronym or abbreviated version of it.

Exhibit IV – electroCore Pipeline & Partnerships[5]



Summary

On November 3, 2022, electroCore presented its third quarter 2022 financial and operational results. Revenues of $2.0 million represented a deceleration from previous quarters' growth rates; however, following the end of the period, there was a rebound in October suggesting a return to higher growth in the fourth quarter. Management anticipates revenues of $2.2 to $2.3 million in 4Q:22 and cash burn of ($4.0) to ($4.5) million. Gross margin was a bright spot, but increases in research and development and selling, general and administrative expenses led to a net loss behind our estimates.

Topline growth was still an impressive 33% in the quarter and many efforts are in motion that should support next year's estimates including a revamping of the e-commerce platform, contributions from Joerns, Teijin and other partners, and the attractive arrangement with the DoD for the Tac-Stim device. Distribution is global and varied, and while we may see some currency pressures on foreign revenues in the near term, growth in the largest segment, VA and DoD, is expected to contribute materially in 4Q:22. New opportunities in commercial and cash pay markets also are showing early success.

electroCore has many factors in its favor which are helping to expand its presence in multiple regions and in new indications, the most recent being the partnership with Joerns which will distribute gammaCore to its managed care lives in the Western United States. Additional indications are longer-term in nature such as those in Parkinson's disease, opioid use disorder, respiratory distress, post-traumatic headache, mild traumatic brain injury, PTSD, inflammatory diseases and stroke. Meetings with the FDA will guide the optimal path forward for these promising indications. The material and bold initiatives being advanced by electroCore support continued strong topline growth and our price target of $4.75 per share.

[5] Source: electroCore Corporate Presentation August 2022

PROJECTED FINANCIALS

electroCore, Inc. - Income Statement

electroCore, Inc.	2021 E	Q1 A	Q2 A	Q3 A	Q4 E	2022 E	2023 E	2024 E
Total Revenues ($US '000)	**$5,451**	**$1,899**	**$2,157**	**$1,976**	**$2,240**	**$8,272**	**$14,062**	**$22,219**
YOY Growth	56%	58%	70%	33%	50%	52%	70%	58%
Cost of Goods Sold	$1,385	$360	$358	$258	$470	$1,446	$2,812	$4,444
Product Gross Margin	75%	81%	83%	87%	79%	83%	80%	80%
Research & Development	$2,536	$934	$1,341	$1,617	$920	$4,812	$3,022	$1,000
Selling, General & Administrative	$21,573	$6,186	$6,278	$5,657	$6,818	$24,939	$26,186	$22,800
Restructuring & Other	$0	$0	$0	$0	$0	$0	$0	$0
Income from operations	($20,043)	($5,581)	($5,820)	($5,556)	($5,969)	($22,926)	($17,959)	($6,025)
Operating Margin	*-368%*	*-294%*	*-270%*	*-281%*	*-266%*	*-277%*	*-128%*	*-27%*
Other Expense	($1,974)	$1	($38)	($103)	$0	($140)	$0	$0
Pre-Tax Income	($18,069)	($5,582)	($5,782)	($5,453)	($5,969)	($22,786)	($17,959)	($6,025)
Provision for Income Tax	($851)	$0	($445)	$0	$0	($445)	$0	$0
Tax Rate	*4.7%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*2.0%*	*0.0%*	*0.0%*
Net Income	**($17,218)**	**($5,582)**	**($5,337)**	**($5,453)**	**($5,969)**	**($22,341)**	**($17,959)**	**($6,025)**
Net Margin	*-316%*	*-294%*	*-247%*	*-276%*	*-266%*	*-270%*	*-128%*	*-27%*
Reported EPS	**($0.29)**	**($0.08)**	**($0.08)**	**($0.08)**	**($0.08)**	**($0.31)**	**($0.25)**	**($0.08)**
YOY Growth	*-52%*	*-30.1%*	*26.4%*	*33.5%*	*19.1%*	*8%*	*-20%*	*-67%*
Basic Shares Outstanding	59,178	70,672	70,816	71,090	71,600	71,250	71,588	71,858

Source: Company Filing // Zacks Investment Research, Inc. Estimates

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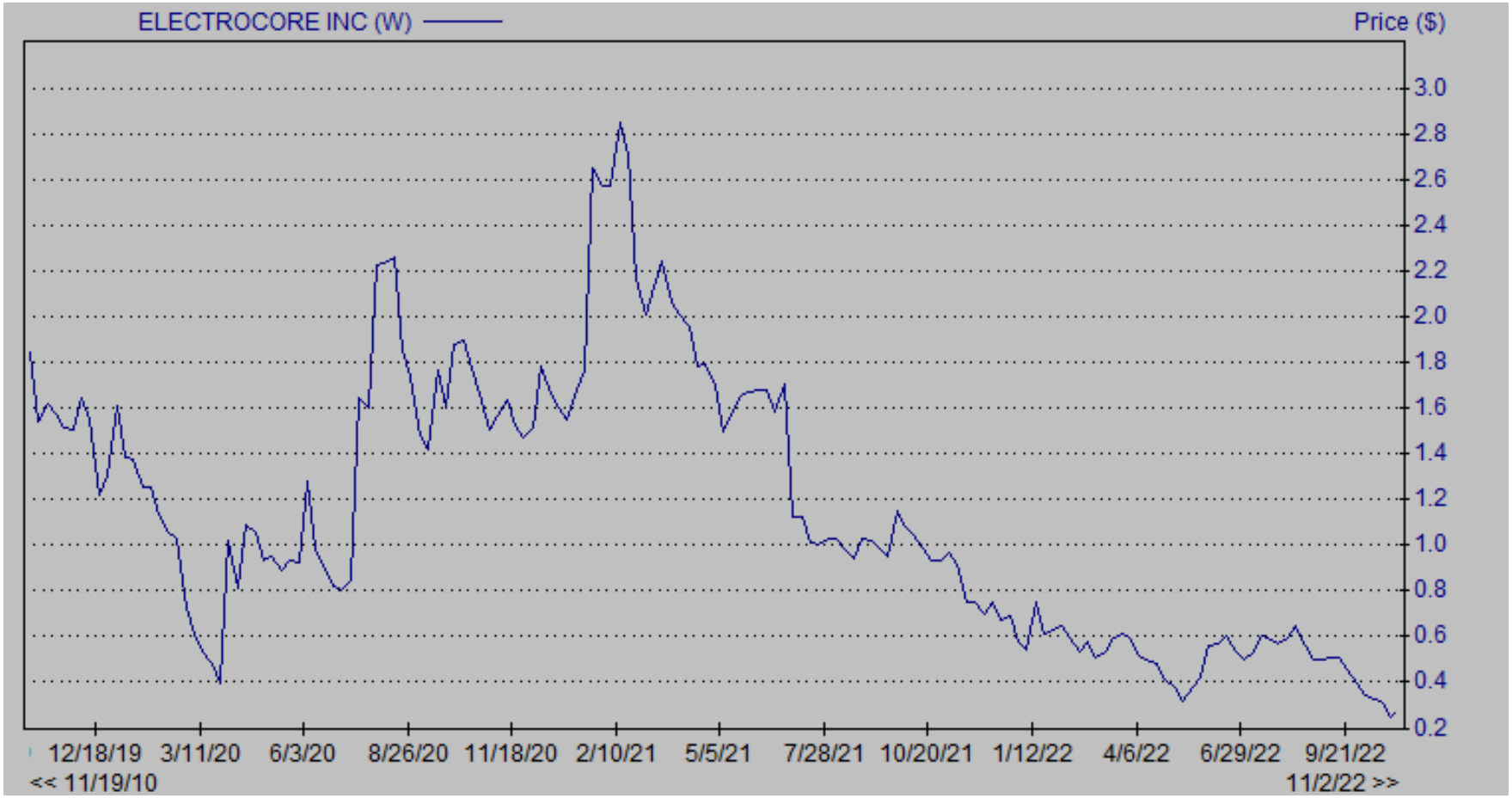
HISTORICAL STOCK PRICE

electroCore – Share Price Chart[6]



[6] Source: Zacks Research System

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