

Middle East & Africa Microelectrode Array In Vitro Market Report (2021-2031) by Scope, Segmentation, Dynamics, and Competitive Analysis

<https://marketpublishers.com/r/M00AC4038CE3EN.html>

Date: September 2025

Pages: 106

Price: US\$ 3,450.00 (Single User License)

ID: M00AC4038CE3EN

Abstracts

The microelectrode array in vitro market in the Middle East and Africa was valued at approximately US\$ 0.53 million in 2023 and is projected to grow to US\$ 0.72 million by 2031, reflecting a compound annual growth rate (CAGR) of 3.9% during this period.

Integration of Microelectrode Array Technologies with Organ-On-A-Chip

The advancement of organ-on-a-chip systems, which mimic the physiological conditions of human organs through microfluidics and engineered tissues, is significantly enhancing the microelectrode array in vitro market. When microelectrode array technology is integrated with these organ-on-a-chip systems, it allows for real-time monitoring of electrical activity, providing valuable insights into the functional responses of organ models. For example, a heart-on-a-chip that incorporates a microelectrode array can yield critical data on cardiac electrophysiology, enabling researchers to assess how various compounds affect heart rhythm and contractility. This capability is vital for understanding drug-induced cardiotoxicity, a major concern in pharmaceutical development.

A notable collaboration occurred in September 2022, when NETRI, a neuro-organs-on-chip start-up, partnered with Axion BioSystems to develop microfluidic devices equipped with high-throughput microelectrode arrays. This innovative technology enables neuroscientists to noninvasively measure the electrical activity of neural cells within complex in vitro models, thereby accelerating therapeutic discovery. The microelectrode array plays a central role in this organ-on-chip research, which aims to enhance biological models while minimizing animal testing. The focus areas include brain-on-a-chip technology for investigating neurodegenerative diseases, heart-on-a-chip

technology, and blood-brain barrier modeling. Consequently, the integration of microelectrode array technologies with organ-on-a-chip devices is anticipated to drive new trends and growth in the market in the coming years.

Overview of the Middle East & Africa Microelectrode Array In Vitro Market

The microelectrode array in vitro market in the Middle East and Africa is segmented into key regions, including Saudi Arabia, South Africa, the UAE, and the Rest of the Middle East and Africa. Factors such as rapid technological advancements in neuroscience and biomedical research, the presence of key industry players, and government initiatives aimed at enhancing healthcare and research infrastructure are expected to propel market growth in the region during the forecast period.

In South Africa, the healthcare sector is undergoing reforms to address challenges like high rates of HIV/AIDS, tuberculosis, and noncommunicable diseases such as cancer and diabetes. The National Health Insurance (NHI) initiative emphasizes the importance of biotechnology and medical device innovation, including the application of microelectrode arrays in research and diagnostics. The Department of Science and Technology (DST) and the South African Medical Research Council (SAMRC) are actively working to boost local production of biotechnology and medical devices, focusing on advanced tools for drug screening and disease modeling. Key market players such as NeuroNexus and Metrohm are contributing to the growth of the microelectrode array in vitro market in South Africa. The pharmaceutical sector in the country includes both local and international companies involved in drug discovery and development, with microelectrode arrays offering an efficient, high-throughput method for neurotoxicity screening, neuropharmacology studies, and testing drug efficacy on neural cells. The rising demand for effective drug testing platforms is driving the adoption of microelectrode arrays in South Africa.

Market Segmentation Analysis

The Middle East and Africa microelectrode array in vitro market is categorized by product, application, and country.

- By Product: The market is divided into classical MEA, multiwell-MEA, and CMOS-MEA, with the multiwell-MEA segment holding the largest market share in 2023.
- By Application: The market is segmented into cardiomyocytes, nerve, and others, with the cardiomyocytes segment also holding the largest share in 2023.
- By Country: The market is segmented into South Africa, the UAE, Saudi Arabia, and the Rest of the Middle East and Africa, with South Africa leading the market share in

2023.

Key Companies in the Market

Prominent companies operating in the microelectrode array in vitro market include Tucker Davis Technologies, SCREEN Holdings Co., Ltd., Plexon Inc., MaxWell Biosystems AG, Harvard Bioscience Inc., Axion BioSystems Inc., 3Brain AG, NeuroNexus Technologies Inc., MicroElectrodeDevices, Blackrock Microsystems, Inc., NMI Technologietransfer GmbH, and BMSEED. These companies are at the forefront of innovation and development in the microelectrode array technology space.

Reason to buy

Save and reduce time carrying out entry-level research by identifying the growth, size, leading players, and segments in the Middle East & Africa microelectrode array in vitro market.

Highlights key business priorities in order to assist companies to realign their business strategies.

The key findings and recommendations highlight crucial progressive industry trends in the Middle East & Africa microelectrode array in vitro market, thereby allowing players across the value chain to develop effective long-term strategies.

Develop/modify business expansion plans by using substantial growth offering developed and emerging markets.

Scrutinize in-depth Middle East & Africa market trends and outlook coupled with the factors driving the Middle East & Africa microelectrode array in vitro market, as well as those hindering it.

Enhance the decision-making process by understanding the strategies that underpin commercial interest with respect to client products, segmentation, pricing, and distribution.

Companies

Tucker Davis Technologies

SCREEN Holdings Co., Ltd.

Plexon Inc.

MaxWell Biosystems AG

Harvard Bioscience Inc.

Axion BioSystems Inc

3Brain AG

NeuroNexus Technologies Inc.

MicroElectroDevices

Blackrock Microsystems, Inc.

NMI Technologietransfer GmbH

BMSEED

Contents

1. INTRODUCTION

- 1.1 Report Guidance
- 1.2 Market Segmentation

2. EXECUTIVE SUMMARY

- 2.1 Key Insights
- 2.2 Market Attractiveness

3. RESEARCH METHODOLOGY

- 3.1 Secondary Research
- 3.2 Primary Research
 - 3.2.1 Hypothesis formulation:
 - 3.2.2 Macroeconomic factor analysis:
 - 3.2.3 Developing base number:
 - 3.2.4 Data Triangulation:
 - 3.2.5 Country-level data:
- 3.3 Assumptions and Limitations

4. MIDDLE EAST & AFRICA MICROELECTRODE ARRAY IN VITRO MARKET - KEY MARKET DYNAMICS

- 4.1 Market Drivers
 - 4.1.1 Increasing Demand for Microelectrode Arrays in Neuroscience Research
 - 4.1.2 Rising Focus on Developing Alternatives for Animal Testing Models
- 4.2 Market Restraints
 - 4.2.1 High Development Costs of Microelectrode Arrays
- 4.3 Market Opportunities
 - 4.3.1 Microelectrode Arrays with Advanced Features
- 4.4 Future Trends
 - 4.4.1 Integration of Microelectrode Array Technologies with Organ-On-A-Chip
- 4.5 Impact of Drivers and Restraints:

5. MICROELECTRODE ARRAY IN VITRO MARKET - MIDDLE EAST & AFRICA ANALYSIS

5.1 Middle East & Africa Microelectrode Array in Vitro Market Revenue (US\$ Thousand), 2021-2031

5.2 Middle East & Africa Microelectrode Array in Vitro Market Forecast Analysis

6. MIDDLE EAST & AFRICA MICROELECTRODE ARRAY IN VITRO MARKET ANALYSIS - BY PRODUCT

6.1 Classical MEA

6.1.1 Overview

6.1.2 Classical MEA: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

6.2 Multiwell-MEA

6.2.1 Overview

6.2.2 Multiwell-MEA: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

6.3 CMOS-MEA

6.3.1 Overview

6.3.2 CMOS-MEA: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

7. MIDDLE EAST & AFRICA MICROELECTRODE ARRAY IN VITRO MARKET ANALYSIS - BY APPLICATION

7.1 Cardiomyocytes

7.1.1 Overview

7.1.2 Cardiomyocytes: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

7.2 Nerve

7.2.1 Overview

7.2.2 Nerve: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

7.3 Others

7.3.1 Overview

7.3.2 Others: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

8. MIDDLE EAST & AFRICA MICROELECTRODE ARRAY IN VITRO MARKET - COUNTRY ANALYSIS

8.1 Middle East and Africa

8.1.1 Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast Analysis - by Country

8.1.1.1 Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast Analysis - by Country

8.1.1.2 South Africa: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

8.1.1.2.1 South Africa: Middle East & Africa Microelectrode Array in Vitro Market Share - by Product

8.1.1.2.2 South Africa: Middle East & Africa Microelectrode Array in Vitro Market Share - by Application

8.1.1.3 Saudi Arabia: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

8.1.1.3.1 Saudi Arabia: Middle East & Africa Microelectrode Array in Vitro Market Share - by Product

8.1.1.3.2 Saudi Arabia: Middle East & Africa Microelectrode Array in Vitro Market Share - by Application

8.1.1.4 United Arab Emirates: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

8.1.1.4.1 United Arab Emirates: Middle East & Africa Microelectrode Array in Vitro Market Share - by Product

8.1.1.4.2 United Arab Emirates: Middle East & Africa Microelectrode Array in Vitro Market Share - by Application

8.1.1.5 Rest of Middle East and Africa: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

8.1.1.5.1 Rest of Middle East and Africa: Middle East & Africa Microelectrode Array in Vitro Market Share - by Product

8.1.1.5.2 Rest of Middle East and Africa: Middle East & Africa Microelectrode Array in Vitro Market Share - by Application

9. MICROELECTRODE ARRAY IN VITRO MARKET - INDUSTRY LANDSCAPE

9.1 Overview

10. COMPANY PROFILES

10.1 Tucker Davis Technologies

10.1.1 Key Facts

- 10.1.2 Business Description
- 10.1.3 Products and Services
- 10.1.4 Financial Overview
- 10.1.5 SWOT Analysis
- 10.1.6 Key Developments
- 10.2 SCREEN Holdings Co., Ltd.
 - 10.2.1 Key Facts
 - 10.2.2 Business Description
 - 10.2.3 Products and Services
 - 10.2.4 Financial Overview
 - 10.2.5 SWOT Analysis
 - 10.2.6 Key Developments
- 10.3 Plexon Inc.
 - 10.3.1 Key Facts
 - 10.3.2 Business Description
 - 10.3.3 Products and Services
 - 10.3.4 Financial Overview
 - 10.3.5 SWOT Analysis
 - 10.3.6 Key Developments
- 10.4 MaxWell Biosystems AG
 - 10.4.1 Key Facts
 - 10.4.2 Business Description
 - 10.4.3 Products and Services
 - 10.4.4 Financial Overview
 - 10.4.5 SWOT Analysis
 - 10.4.6 Key Developments
- 10.5 Harvard Bioscience Inc.
 - 10.5.1 Key Facts
 - 10.5.2 Business Description
 - 10.5.3 Products and Services
 - 10.5.4 Financial Overview
 - 10.5.5 SWOT Analysis
 - 10.5.6 Key Developments
- 10.6 Axion BioSystems Inc
 - 10.6.1 Key Facts
 - 10.6.2 Business Description
 - 10.6.3 Products and Services
 - 10.6.4 Financial Overview
 - 10.6.5 SWOT Analysis

- 10.6.6 Key Developments
- 10.7 3Brain AG
 - 10.7.1 Key Facts
 - 10.7.2 Business Description
 - 10.7.3 Products and Services
 - 10.7.4 Financial Overview
 - 10.7.5 SWOT Analysis
 - 10.7.6 Key Developments
- 10.8 NeuroNexus Technologies Inc.
 - 10.8.1 Key Facts
 - 10.8.2 Business Description
 - 10.8.3 Products and Services
 - 10.8.4 Financial Overview
 - 10.8.5 SWOT Analysis
 - 10.8.6 Key Developments
- 10.9 MicroElectroDevices
 - 10.9.1 Key Facts
 - 10.9.2 Business Description
 - 10.9.3 Products and Services
 - 10.9.4 Financial Overview
 - 10.9.5 SWOT Analysis
 - 10.9.6 Key Developments
- 10.10 Blackrock Microsystems, Inc.
 - 10.10.1 Key Facts
 - 10.10.2 Business Description
 - 10.10.3 Products and Services
 - 10.10.4 Financial Overview
 - 10.10.5 SWOT Analysis
 - 10.10.6 Key Developments
- 10.11 NMI Technologietransfer GmbH
 - 10.11.1 Key Facts
 - 10.11.2 Business Description
 - 10.11.3 Products and Services
 - 10.11.4 Financial Overview
 - 10.11.5 SWOT Analysis
 - 10.11.6 Key Developments
- 10.12 BMSEED
 - 10.12.1 Key Facts
 - 10.12.2 Business Description

- 10.12.3 Products and Services
- 10.12.4 Financial Overview
- 10.12.5 SWOT Analysis
- 10.12.6 Key Developments

11. APPENDIX

- 11.1 Glossary of Terms
- 11.2 About The Insight Partners

List Of Tables

LIST OF TABLES

Table 1. Middle East & Africa Microelectrode Array in Vitro Market Segmentation

Table 2. Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

Table 3. Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand) - by Product

Table 4. Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand) - by Application

Table 5. Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand) - by Country

Table 6. South Africa: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021 - 2031 (US\$ Thousand) - by Product

Table 7. South Africa: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021 - 2031 (US\$ Thousand) - by Application

Table 8. Saudi Arabia: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021 - 2031 (US\$ Thousand) - by Product

Table 9. Saudi Arabia: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021 - 2031 (US\$ Thousand) - by Application

Table 10. United Arab Emirates: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021 - 2031 (US\$ Thousand) - by Product

Table 11. United Arab Emirates: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021 - 2031 (US\$ Thousand) - by Application

Table 12. Rest of Middle East and Africa: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021 - 2031 (US\$ Thousand) - by Product

Table 13. Rest of Middle East and Africa: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021 - 2031 (US\$ Thousand) - by Application

Table 14. Recent Growth Strategies in Microelectrode Array in Vitro Market

Table 15. Glossary of Terms, Microelectrode Array in Vitro Market

List Of Figures

LIST OF FIGURES

Figure 1. Middle East & Africa Microelectrode Array in Vitro Market Segmentation - Country

Figure 2. Middle East & Africa Microelectrode Array in Vitro Market - Key Market Dynamics

Figure 3. Impact Analysis of Drivers and Restraints

Figure 4. Middle East & Africa Microelectrode Array in Vitro Market Revenue (US\$ Thousand), 2021-2031

Figure 5. Middle East & Africa Microelectrode Array in Vitro Market Share (%) - by Product (2023 and 2031)

Figure 6. Classical MEA: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

Figure 7. Multiwell-MEA: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

Figure 8. CMOS-MEA: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

Figure 9. Middle East & Africa Microelectrode Array in Vitro Market Share (%) - by Application (2023 and 2031)

Figure 10. Cardiomyocytes: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

Figure 11. Nerve: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

Figure 12. Others: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021-2031 (US\$ Thousand)

Figure 13. Middle East & Africa Microelectrode Array in Vitro Market Breakdown, by Key Countries, 2023 and 2031 (%)

Figure 14. South Africa: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021- 2031 (US\$ Thousand)

Figure 15. Saudi Arabia: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021- 2031 (US\$ Thousand)

Figure 16. United Arab Emirates: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021- 2031 (US\$ Thousand)

Figure 17. Rest of Middle East and Africa: Middle East & Africa Microelectrode Array in Vitro Market - Revenue and Forecast, 2021- 2031 (US\$ Thousand)

I would like to order

Product name: Middle East & Africa Microelectrode Array In Vitro Market Report (2021-2031) by Scope, Segmentation, Dynamics, and Competitive Analysis

Product link: <https://marketpublishers.com/r/M00AC4038CE3EN.html>

Price: US\$ 3,450.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/M00AC4038CE3EN.html>