

rashed

March 5, 2022

0.1 1.0- Introduction

0.2 2.0- An Overview of International Business Machines Corporation's Internationalization Strategy

Rapid Global Expansion:

Development of Local Leadership:

Business Agility:

Development New Technology through International Partnership:

(My Findings)

Details about **International Business Machines Corporation in 2012_15** * total patent count 204120 * total Turnover lay 79139000.0 * total turnover 102874000.0 * total asset 119213000.0 * Number of employees 434246 * R&D 5816000

Figure 6 indicates that International Business Machines Corporation had the highest patent count for the year of 2012.

Figure 7 indicates They had 5th highest turnover in 2012.

Figure 8 indicates They had the 12th highest total asset in 2012.

Figure 9 indicates They had the highest number of employees in 2012

Figure 10 represents correlation between variables which suggests turnover and turnover lay had the highest positive correlation of 0.99 . In addition, turnover and total asset had the second highest correlation value of 0.96. Figure 11 and 12 also confirms that as they have a positive correlation line.

```
[3]: from google.colab import drive
      drive.mount('/content/drive')
```

Mounted at /content/drive

```
[4]: #importing all the needed packages for data analysis
      import pandas as pd
      import numpy as np
      import matplotlib.pyplot as plt
      import seaborn as sns
      import warnings
```

```
warnings.filterwarnings('ignore')
#location of the IBM data
path = '/content/drive/MyDrive/Colab Notebooks/assignment/data/'
#location of all the attribute files
attribute4 = path + 'USPTO_2012_4_proj_attributes_NEW.csv'
edgelist4 = path + 'USPTO_2012_4_proj.xlsx'
```

```
[5]: #read all the csv files of edgelist
colnames = ['From', 'To']
edgelist_df4 = pd.read_excel(edgelist4,names=colnames)
final_edgelist = edgelist_df4
print('total shape of edgelist {}'.format(final_edgelist.shape))
```

total shape of edgelist (533, 2)

0.3 3.0- Network analysis techniques and visualizations to describe the network in which it is embedded (indicatively 700 words)

0.3.1 (Your written part)

Company Network Analysis:

Global Value Chain:

0.3.2 (My Findings)

Provided dataset **edgelist** corresponds of:

1. Number of node (companies): 638 and Number of edges(connections): 533
2. From **Figure 1** we can see that the network is a industrial network (define industrial network). From **figure 2** we can see that the network has 2 communities(yellow, green). The community detection was done using **girvan_newman** algoirthm. Under the Girvan-Newman algorithm, the communities in a graph are discovered by iteratively removing the edges of the graph, based on the edge betweenness centrality value. The edge with the highest edge betweenness is removed first. We will cover this algorithm later in the article, but first, let's understand the concept of "edge betweenness centrality".
3. International Business Machines Corporation have number of degree = 21 which means it has total of 21 unique direct connections with companies.

```
[6]: import networkx as nx

# Read Our Edgelist
us_graph = nx.from_pandas_edgelist(final_edgelist,source="From",target="To")
```

```
[7]: def get_graph_info(graph):
    print("Number of nodes:", graph.number_of_nodes())
    print("Number of edges:", graph.number_of_edges())
```

```
[8]: get_graph_info(us_graph)
```

Number of nodes: 638

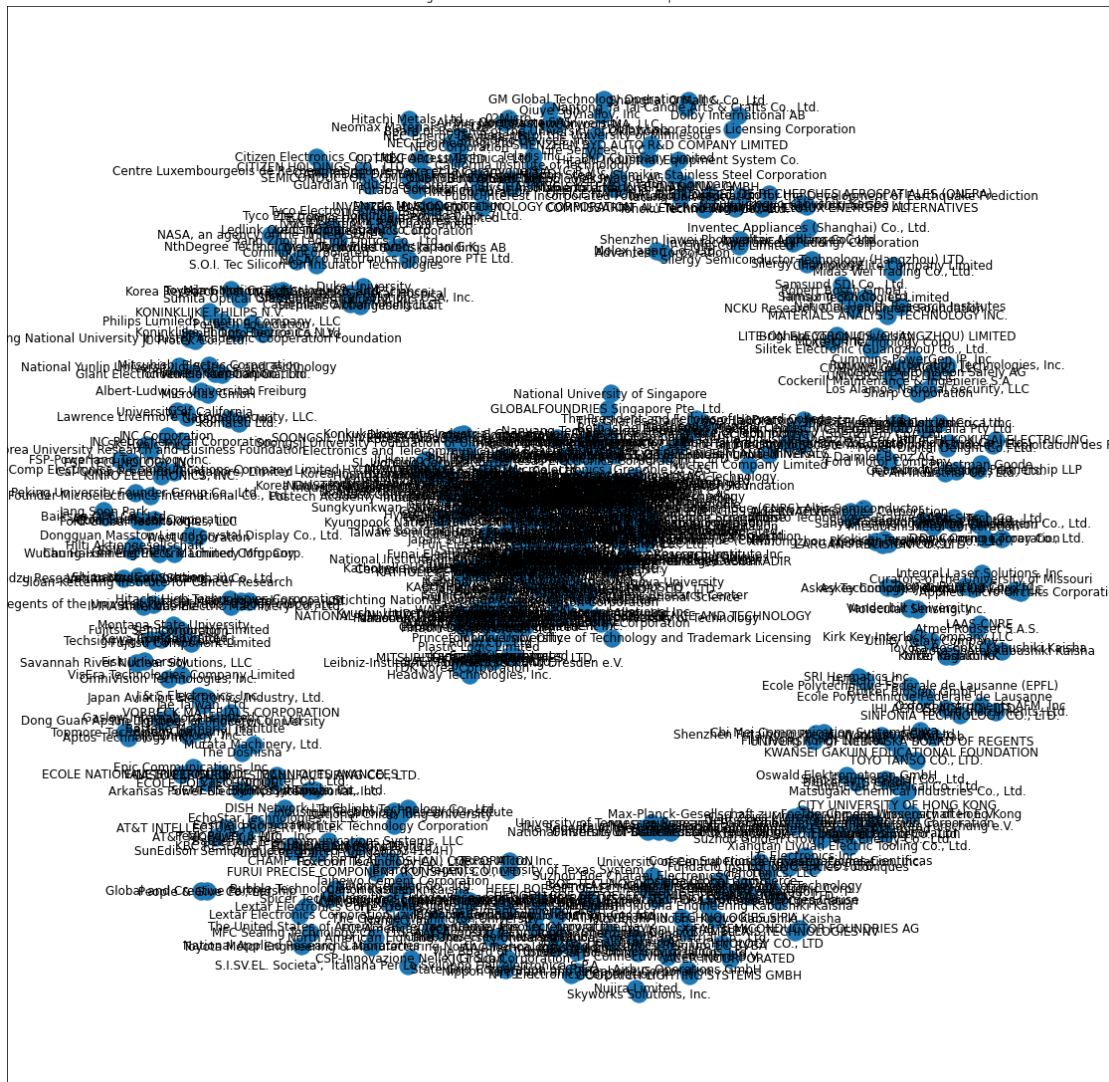
Number of edges: 533

```
[29]: us_graph.degree('International Business Machines Corporation')
```

```
[29]: 21
```

```
[10]: plt.figure(figsize=(10,10))
      nx.draw_networkx(us_graph)
      plt.title('Figure 1. network visualization of the companies')
      plt.show()
```

Figure 1. network visualization of the companies



```
[30]: from networkx.algorithms.community centrality import girvan_newman

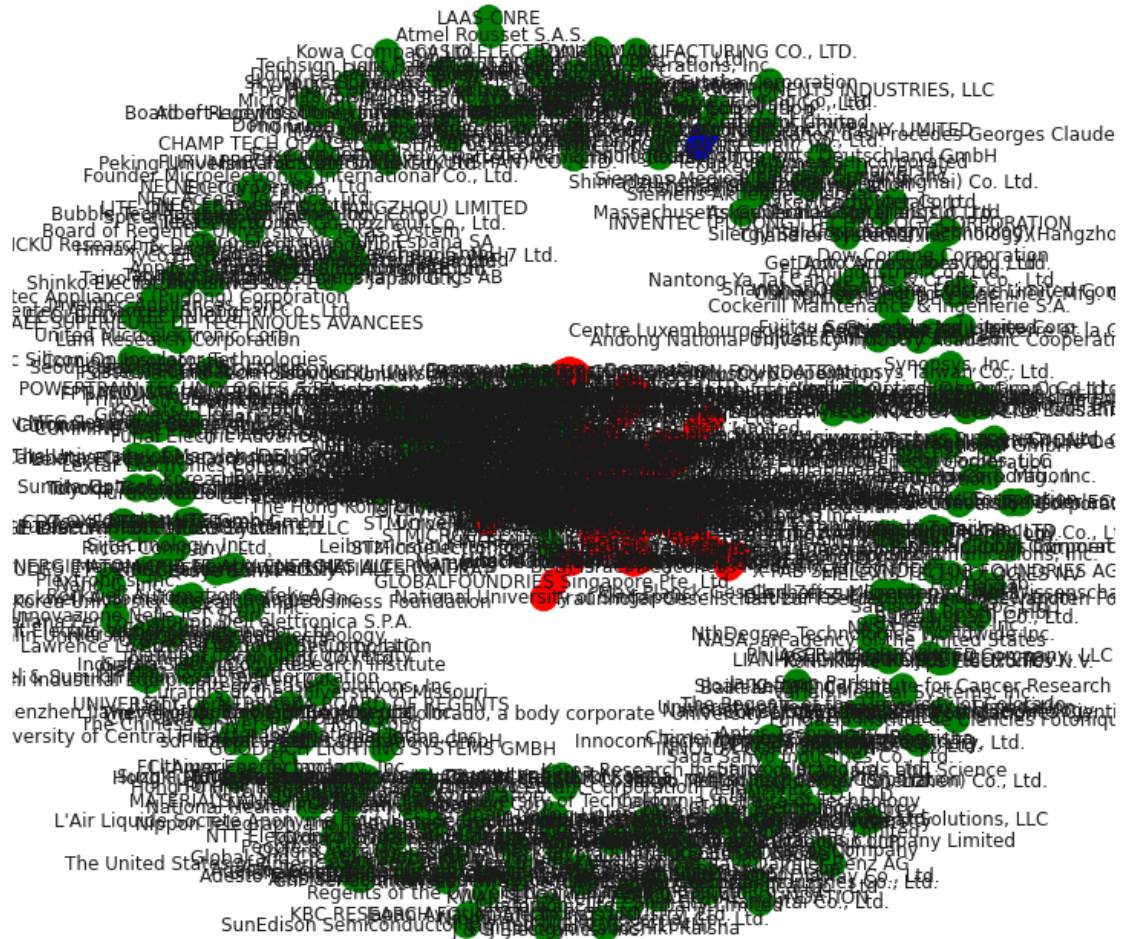
G = us_graph
communities = girvan_newman(G)

node_groups = []
for com in next(communities):
    node_groups.append(list(com))

color_map = []
for node in G:
    if node in node_groups[0]:
        color_map.append('blue')
    elif node in node_groups[1]:
        color_map.append('red')
    else:
        color_map.append('green')

plt.figure(figsize=(10,10))
nx.draw(G, node_color=color_map, with_labels=True)
plt.title('Figure 2. girvan_newman community detection')
plt.show()
```

Figure 2. girvan_newman community detection



0.4 4.0- Provide a preliminary, exploratory, interpretation of the role played by the company and others of particular note, considering aspects such as their centrality (degree, betweenness, closeness/farness, and eigenvector centrality), location, activity, size and other relevant characteristics (500 words)

(My findings)

1. **Degree centrality** is a simple count of the total number of connections linked to a vertex. It is the simplest measure of node connectivity. The higher the degree, the more central the node is. This can be an effective measure, since many nodes with high degrees also have high centrality by other measures. A high degree centrality score simply means that a node has a larger than average number of connections for that

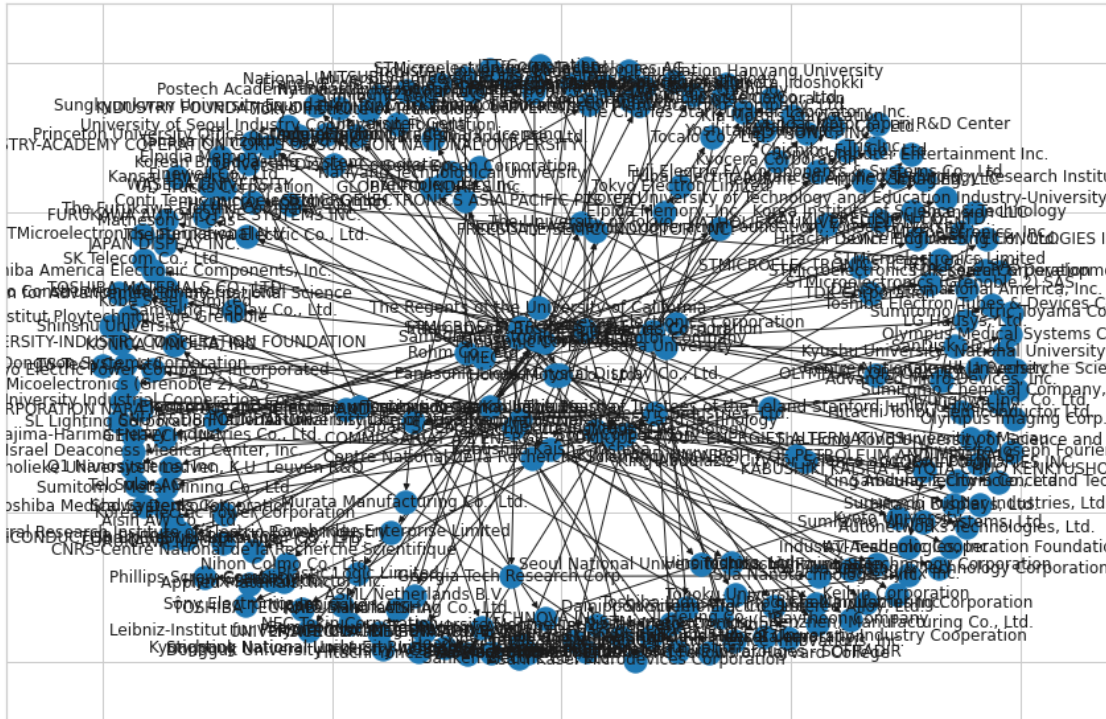
graph. In our case higher value of degree centrality means the company has more connections from other companies. For the dataset of **edgelist** it can be seen that top 3 best connected company was : **Samsung Electronics Co. Ltd. (0.03924646781789639)**, **International Business Machines Corporation (0.03296703296703297)**, **Toyota Jidosha Kabushiki Kaisha (0.02197802197802198)**. Meanwhile, **Hitachi Displays, Ltd. (0.0015698587127158557)**, **JAPAN DISPLAY INC. (0.0015698587127158557)**, **Henkel Corporation (0.0015698587127158557)** has a relatively lower degree centrality which means it has the lowest connections among other companies of the dataset. International Business Machines Corporation is the 2nd highest connected company compared to the other companies.

2. **Eigenvector centrality** measures a node's importance while giving consideration to the importance of its neighbors. Like degree centrality, EigenCentrality measures a node's influence based on the number of links it has to other nodes in the network. EigenCentrality then goes a step further by also taking into account how well connected a node is, and how many links their connections have, and so on through the network. **International Business Machines Corporation (0.45813003028955307)**, **Samsung Electronics Co. Ltd. (0.4316882680143975)**, **STMICROELECTRONICS S.R.L. (0.33897072011146945)** had the eigenvector centrality which indicates that they are the most important companies in the network. It can be seen that the ranking of companies based on Degree of centrality and eigenvector centrality is quite similar. It's because the most connected companies are the ones who are more important in the network. The eigenvector centrality suggests International Business Machines Corporation is the most important company in the network.
3. **Betweenness Centrality** is a measure of centrality in a graph based on shortest paths. it is a way of detecting the amount of influence a company has over the flow of information in a network. It is often used to find company that serve as a bridge from one part of a network to another. it calculates unweighted shortest paths between all pairs of company in a network. Each node receives a score, based on the number of shortest paths that pass through the node. Companies that more frequently lie on shortest paths between other companies will have higher betweenness centrality scores. In our dataset **Samsung Electronics Co. Ltd. (0.09045562104861295)**, **IMEC (0.05288860585356546)**, **International Business Machines Corporation (0.04846897636655047)** had the highest betweenness score and they are the ones who influence the flow of information around the network. They are the ones whose removal from the network will most disrupt communications between other companies because they are the top connected companies. International Business Machines Corporation is the 3rd most influential company in the network.
4. **Closeness centrality** indicates how close a company is to all other companies in the network. It captures the average distance between each company and every other companies in the network. If information needed to flow through the network, some company would be able to get a message to all the other companies relatively quickly (i.e., in few steps), whereas others may require many steps. Top 4 closely centered Companies were : **Samsung Electronics Co. Ltd. (0.11556670253543498)**, **IMEC (0.10819312151476919)**, **International Business Machines Corporation (0.10100503325834695)**. So, these companies with high closeness centrality is literally close to other companies. Companies with high closeness have, on average, short paths to many other companies, which can be helpful for disseminating resources quickly.

5. Figure 3 shows the Shortest path from International Business Machines Corporation to their connections

```
[33]: group1 = nx.bfs_tree(us_graph,"International Business Machines Corporation")
plt.figure(figsize=(15,10))
nx.draw_networkx(group1)
plt.title('Figure 3. Shortest path from International Business Machines_
↳Corporation to their connections ')
plt.show()
```

Figure 3. Shortest path from International Business Machines Corporation to their connections



Attribute dataset had total 215 companies with 11 features initially. Among them there was an unnecessary feature named Unnamed: 10 . So we need dropped the column.

```
[13]: df = pd.read_csv(attribute4)
df = df.drop(columns=['Unnamed: 10'])
print('total shape of attributes {}'.format(df.shape))
```

total shape of attributes (215, 10)

Figure 4 indicates that the attribute dataset had missing values in R&D_2012, Employees_2012, Turnover_2012, Total_assets_2012, Turnover_lay and Country_code. Among them R&D_2012 had the highest missing values with 58% and country_code had the least with 12%.

```
[14]: total = df.isnull().sum().sort_values(ascending=False)
percent = ((df.isnull().sum()/df.isnull().count()*100).
↳sort_values(ascending=False))
missing_data = pd.concat([total, percent], axis=1, keys=['Total', 'Percent'])

axes = missing_data.plot.bar( subplots=True)

plt.title('Figure 4. Total and percentage of missing values for each column')
axes[1].legend(loc=1)
plt.show()
```

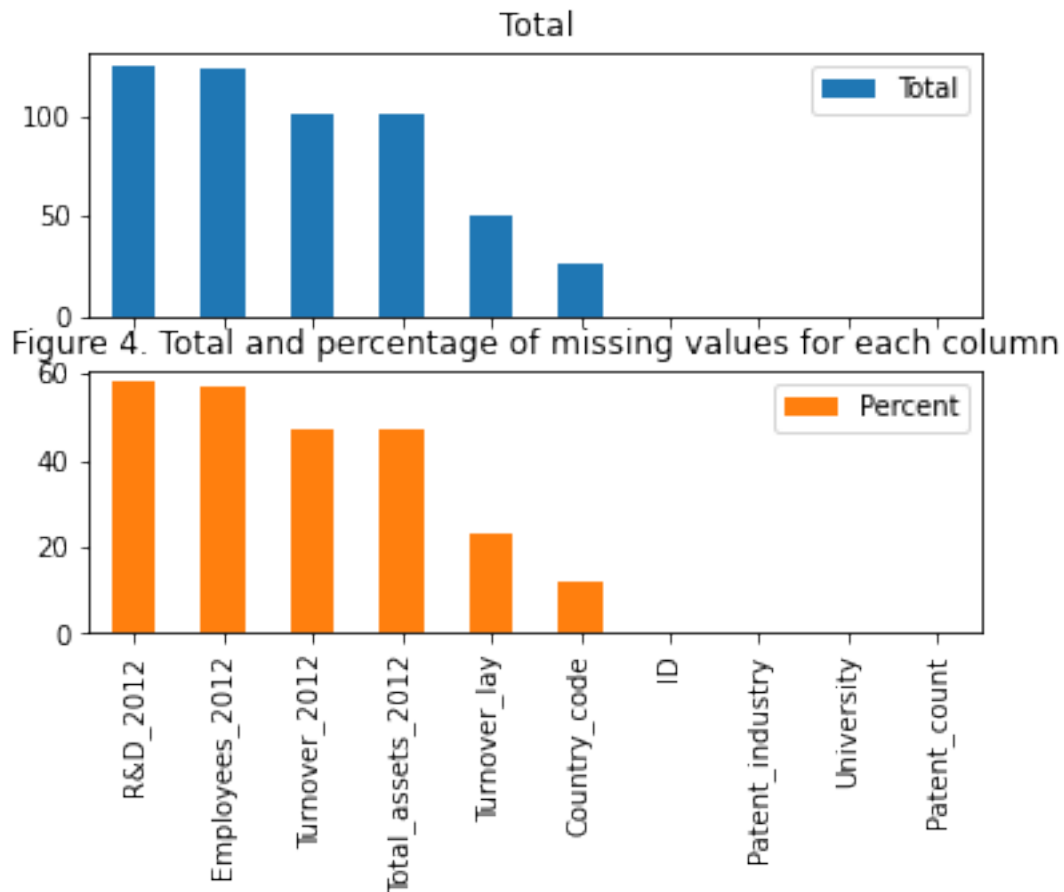
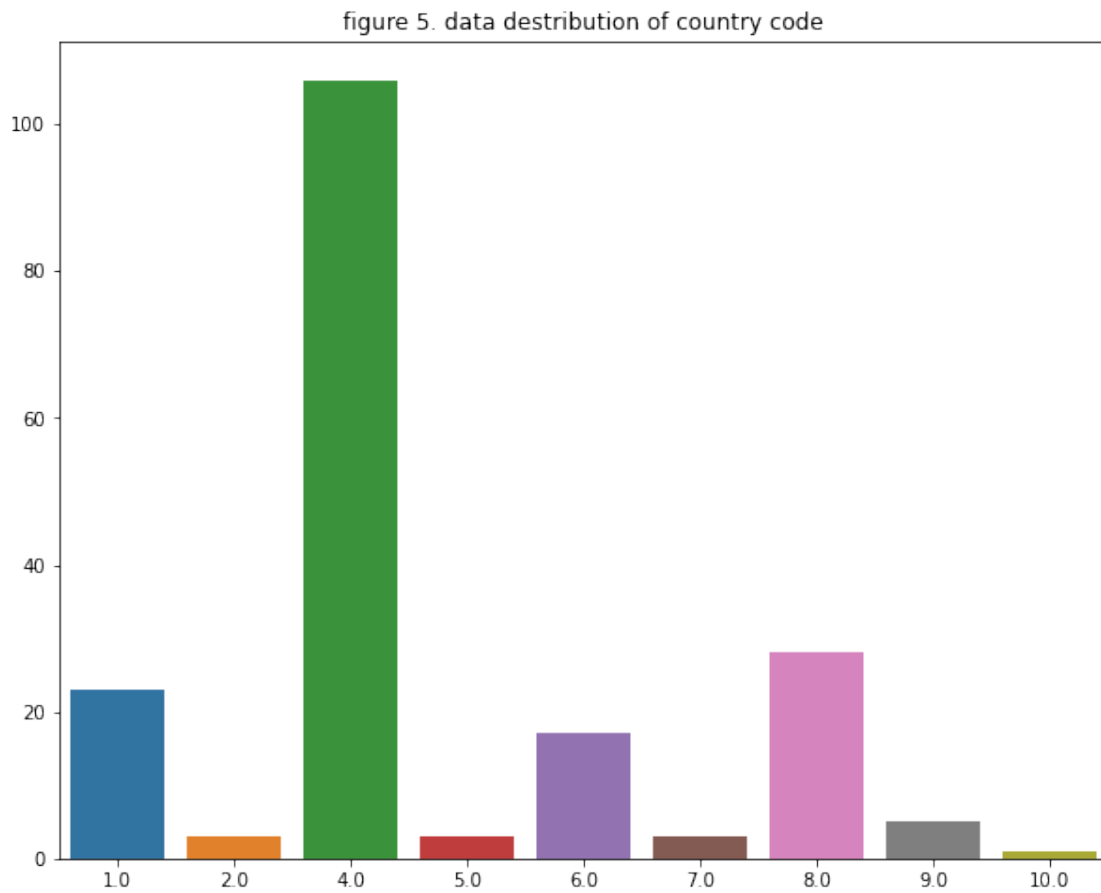


Figure 5. indicates that the dataset had the highest number of companies situated at Country code 4 and the lowest at Country code 10.

```
[15]: plt.figure(figsize=(10,8))
plt.title('figure 5. data destribution of country code')
# Country_code
sns.barplot(x=df.Country_code.value_counts().index, y=df.Country_code.
↳value_counts().values)
```



```
plt.show()
```



```
[28]: samsunge_df = df[df['ID']=='International Business Machines Corporation']
```

```
samsunge_df
```

```
[28]:
```

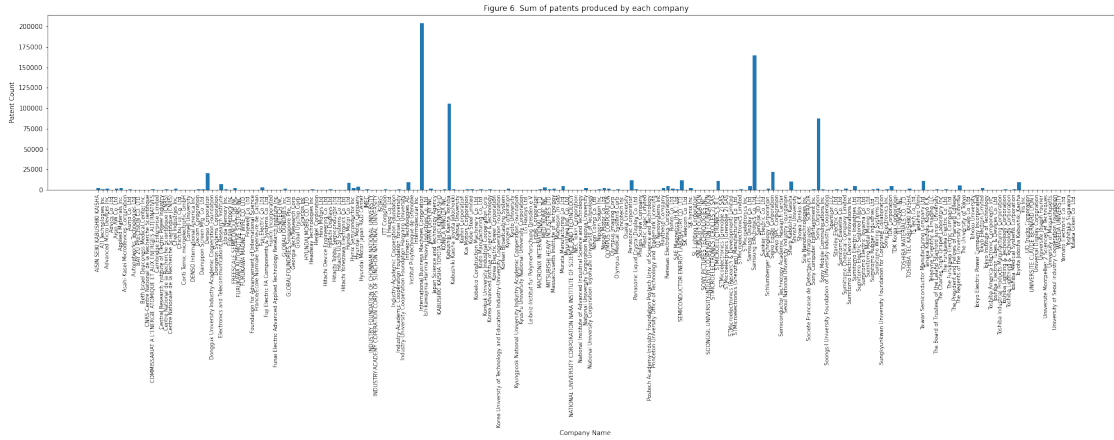
	ID	Patent_industry	University	\
5	International Business Machines Corporation		4	0

	Patent_count	Turnover_lay	Turnover_2012	Total_assets_2012	\
5	204120	79139000.0	102874000.0	119213000.0	

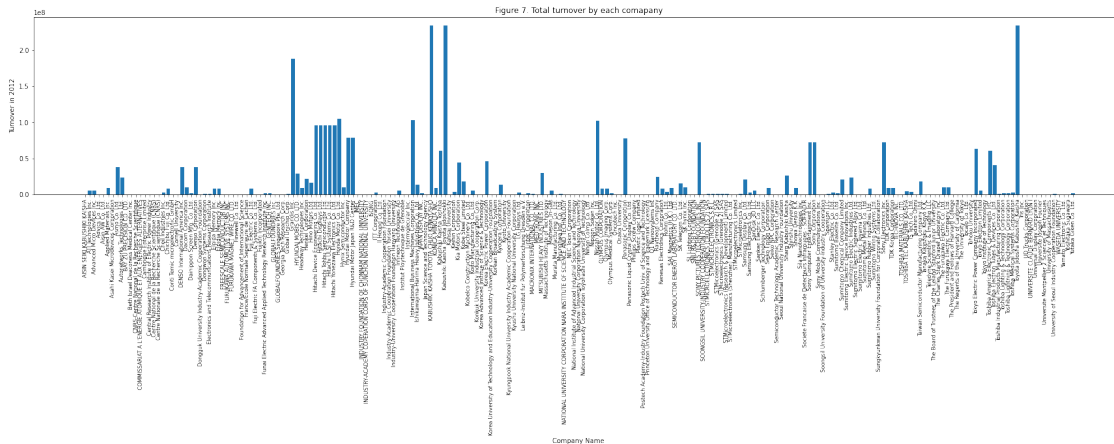
	Employees_2012	R&D_2012	Country_code
5	434246.0	5816000.0	1.0

```
[17]: keys = [company for company, df in df.groupby(['ID'])]
plt.figure(figsize=(30,5))
plt.bar(keys,df.groupby(['ID']).sum()['Patent_count'])
plt.ylabel('Patent Count')
```

```
plt.xlabel('Company Name ')
plt.xticks(keys, rotation='vertical', size=8)
plt.title('Figure 6. Sum of patents produced by each company')
plt.show()
```

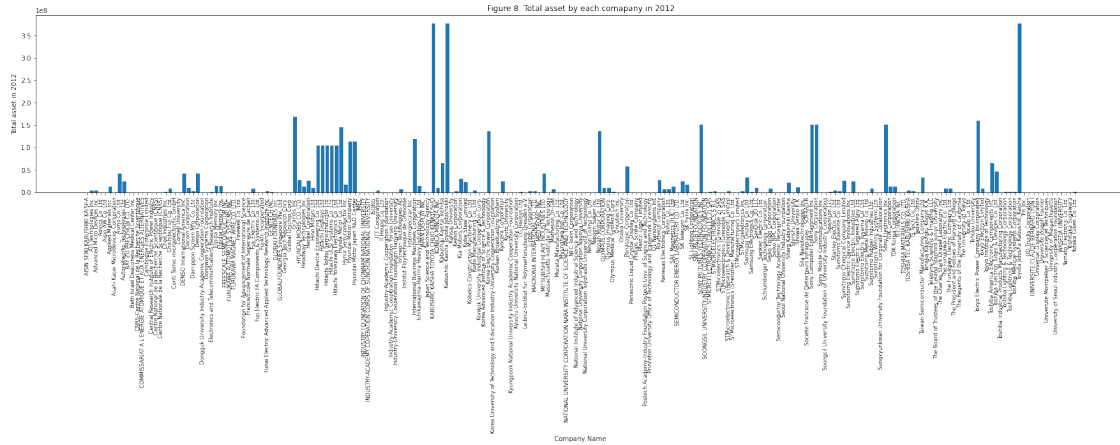


```
[18]: keys = [company for company, df in df.groupby(['ID'])]
plt.figure(figsize=(30,5))
plt.bar(keys,df.groupby(['ID']).sum()['Turnover_2012'])
plt.ylabel('Turnover in 2012')
plt.xlabel('Company Name ')
plt.xticks(keys, rotation='vertical', size=8)
plt.title('Figure 7. Total turnover by each compaany')
plt.show()
```

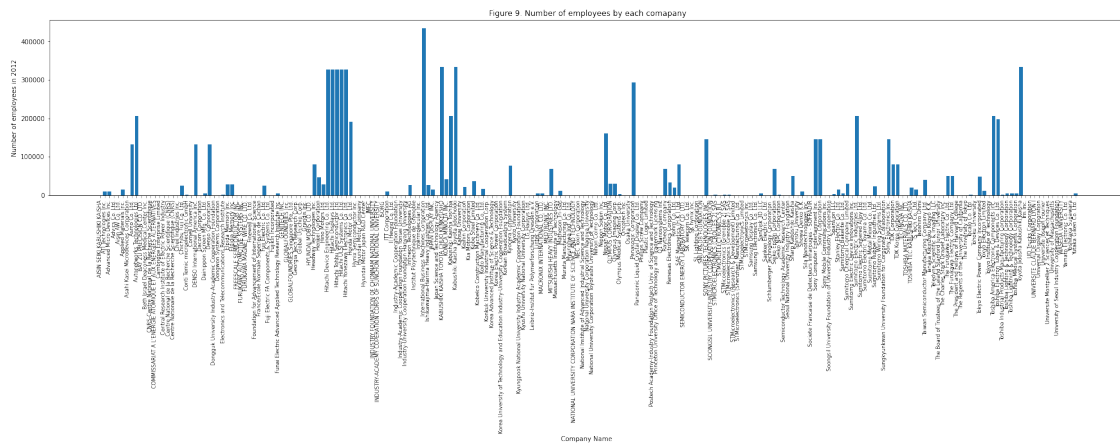


```
[19]: keys = [company for company, df in df.groupby(['ID'])]
plt.figure(figsize=(30,5))
```

```
plt.bar(keys,df.groupby(['ID']).sum()['Total_assets_2012'])
plt.ylabel('Total asset in 2012')
plt.xlabel('Company Name ')
plt.xticks(keys, rotation='vertical', size=8)
plt.title('Figure 8. Total asset by each company in 2012')
plt.show()
```



```
[20]: keys = [company for company, df in df.groupby(['ID'])]
plt.figure(figsize=(30,5))
plt.bar(keys,df.groupby(['ID']).sum()['Employees_2012'])
plt.ylabel('Number of employees in 2012')
plt.xlabel('Company Name ')
plt.xticks(keys, rotation='vertical', size=8)
plt.title('Figure 9. Number of employees by each company')
plt.show()
```

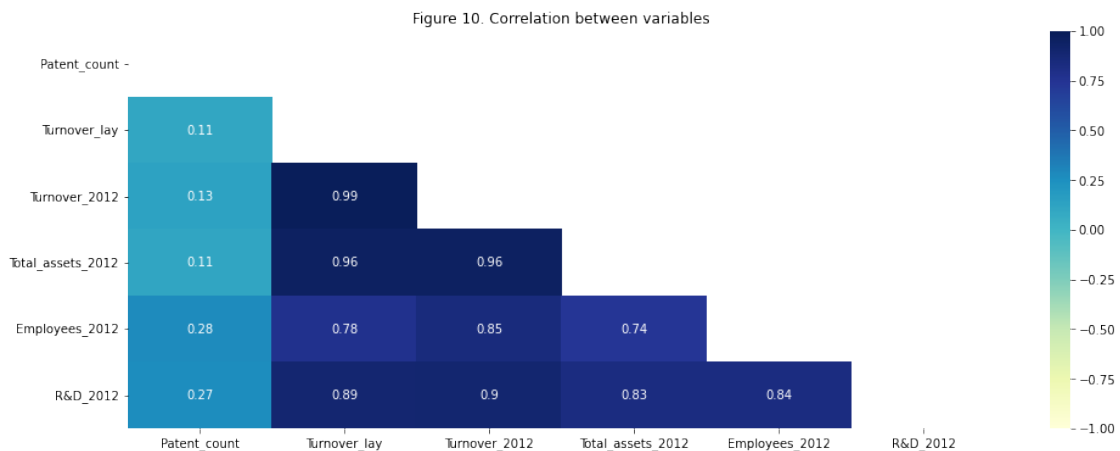


```
[21]: # data = df[['Patent_count', 'Turnover_lay', 'Turnover_2012', 'Total_assets_2012',
↳ 'Employees_2012', 'R&D_2012']]
# plt.figure(figsize=(16, 6))
# corr = data.corr()
# heatmap = sns.heatmap(data.corr(), vmin=-1, vmax=1, cmap="YlGnBu", annot=True)
# heatmap.set_title('Correlation Heatmap', fontdict={'fontsize':12}, pad=12);
# plt.title('Figure 10. Correlation between variables')

# plt.show()

data = df[['Patent_count', 'Turnover_lay', 'Turnover_2012', 'Total_assets_2012',
↳ 'Employees_2012', 'R&D_2012']]
plt.figure(figsize=(16, 6))
corr = data.corr()
mask = np.triu(np.ones_like(corr, dtype=bool))
heatmap = sns.heatmap(data.corr(), mask=mask, vmin=-1, vmax=1, cmap="YlGnBu",
↳ annot=True)
heatmap.set_title('Correlation Heatmap', fontdict={'fontsize':12}, pad=12);
plt.title('Figure 10. Correlation between variables')

plt.show()
```

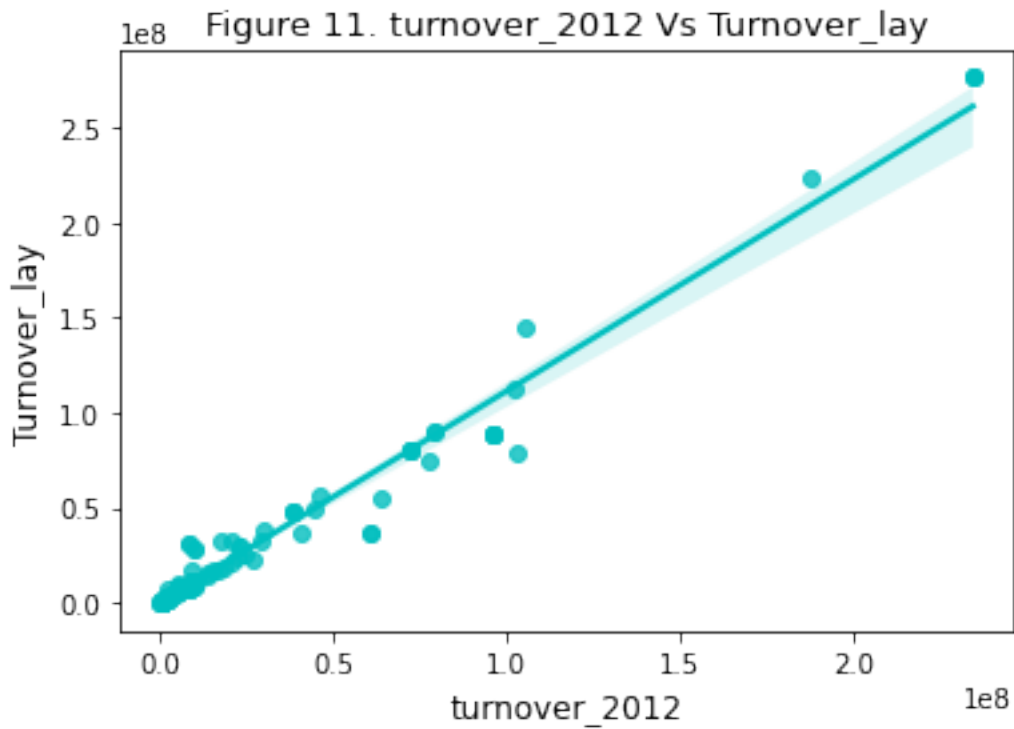


```
[22]: ax = sns.regplot(x=df['Turnover_2012'], y=df['Turnover_lay'], color='c')

#setup the title and the labels of the scatter plot.
ax.set_title("Figure 11. turnover_2012 Vs Turnover_lay", fontsize=13)
ax.set_xlabel("turnover_2012", fontsize=12)
ax.set_ylabel("Turnover_lay", fontsize=12)

#setup the figure size.
sns.set(rc={'figure.figsize': (6, 4)})
```

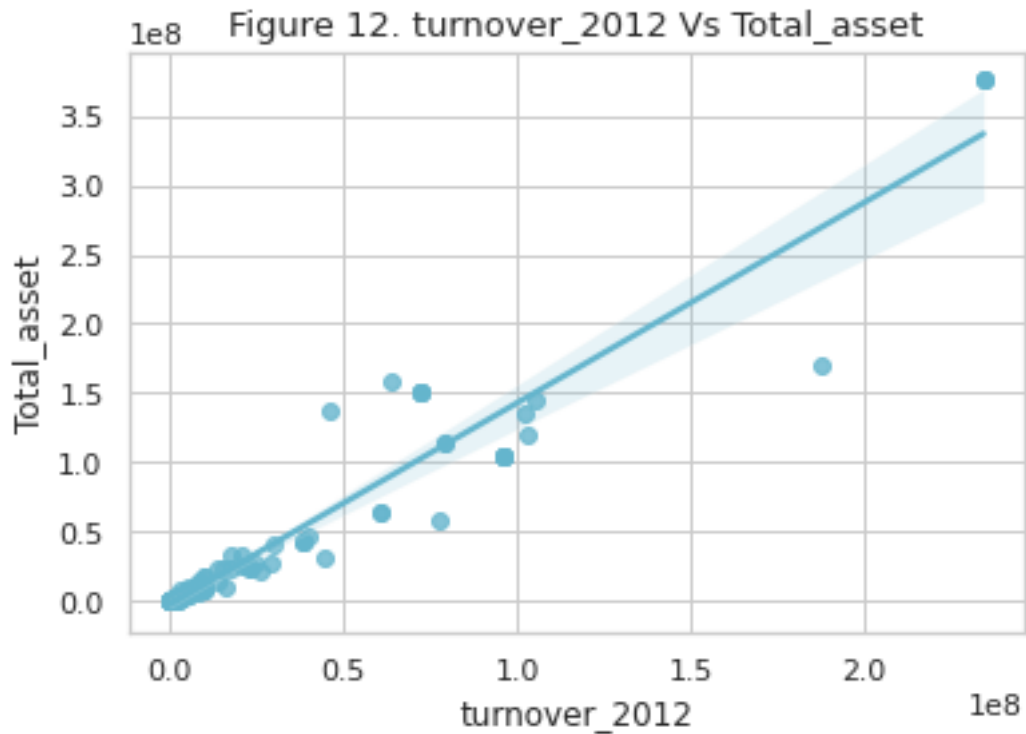
```
sns.set_style("whitegrid")
```



```
[23]: ax = sns.regplot(x=df['Turnover_2012'],y=df['Total_assets_2012'],color='c')

#setup the title and the labels of the scatter plot.
ax.set_title("Figure 12. turnover_2012 Vs Total_asset",fontsize=13)
ax.set_xlabel("turnover_2012",fontsize=12)
ax.set_ylabel("Total_asset",fontsize=12)

#setup the figure size.
sns.set(rc={'figure.figsize':(6,4)})
sns.set_style("whitegrid")
```

0.5 Discuss the implication of industry and country environments on the innovation strategy of the firm (400 words)

[23]:

Appendix

[23]:

[24]:

```
# degree centrality
most_influential = nx.degree_centrality(us_graph)
for w in sorted(most_influential, key=most_influential.get, reverse=True):
    print(w, most_influential[w])
```

Samsung Electronics Co., Ltd. 0.03924646781789639
 International Business Machines Corporation 0.03296703296703297
 Toyota Jidosha Kabushiki Kaisha 0.02197802197802198
 STMICROELECTRONICS S.R.L. 0.020408163265306124
 Kabushiki Kaisha Toshiba 0.020408163265306124
 Denso Corporation 0.01883830455259027
 Fuji Electric Co., Ltd. 0.017268445839874413
 Sumitomo Electric Industries, Ltd. 0.017268445839874413
 Sony Cōrporation 0.015698587127158558

COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES
 0.015698587127158558
 Honda Motor Co., Ltd. 0.015698587127158558
 Hyundai Motor Company 0.0141287284144427
 Panasonic Corporation 0.0141287284144427
 Rohm Co., Ltd. 0.0141287284144427
 IMEC 0.012558869701726845
 Centre National de la Recherche Scientifique (CNRS) 0.01098901098901099
 National University Corporation Nagoya University 0.01098901098901099
 Electronics and Telecommunications Research Institute 0.009419152276295134
 The Regents of the University of California 0.009419152276295134
 FREESCALE SEMICONDUCTOR, INC. 0.009419152276295134
 Renesas Electronics Corporation 0.009419152276295134
 BOE TECHNOLOGY GROUP CO., LTD. 0.007849293563579279
 The University of Tokyo 0.007849293563579279
 Tyco Electronics Corporation 0.007849293563579279
 Samsung Display Co., Ltd. 0.007849293563579279
 The Board of Trustees of the Leland Stanford Junior University
 0.007849293563579279
 Intermolecular, Inc. 0.007849293563579279
 Massachusetts Institute of Technology 0.007849293563579279
 National Institute of Advanced Industrial Science and Technology
 0.007849293563579279
 Hon Hai Precision Industry Co., Ltd. 0.007849293563579279
 Kia Motors Corporation 0.006279434850863423
 OLYMPUS CORPORATION 0.006279434850863423
 Murata Manufacturing Co., Ltd. 0.006279434850863423
 SNU R&DB FOUNDATION 0.006279434850863423
 Industry-Academic Cooperation Foundation, Yonsei University 0.006279434850863423
 GLOBALFOUNDRIES Inc. 0.006279434850863423
 Seoul National University Industry Foundation 0.006279434850863423
 Seiko Epson Corporation 0.006279434850863423
 Sanyo Electric Co., Ltd. 0.006279434850863423
 Sumitomo Metal Mining Co., Ltd. 0.006279434850863423
 University of Tennessee Research Foundation 0.006279434850863423
 Sharp Kabushiki Kaisha 0.006279434850863423
 Siémens Aktiengesellschaft 0.006279434850863423
 Tohoku University 0.006279434850863423
 STMICROELECTRONICS (CROLLES 2) SAS 0.006279434850863423
 Canon Kabushiki Kaisha 0.004709576138147567
 Advanced Micro Devices, Inc. 0.004709576138147567
 Hino Motors, Ltd. 0.004709576138147567
 The Furukawa Electric Co., Ltd. 0.004709576138147567
 Georgia Tech Research Corp. 0.004709576138147567
 Korea Advanced Institue of Science & Technology 0.004709576138147567
 Taiwan Semiconductor Manufacturing Company, Ltd. 0.004709576138147567
 Osaka University 0.004709576138147567
 Hitachi, Ltd. 0.004709576138147567

KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS 0.004709576138147567
 Autonetworks Technologies, Ltd. 0.004709576138147567
 AISIN SEIKI KABUSHIKI KAISHA 0.004709576138147567
 Sumitomo Wiring Systems, Ltd. 0.004709576138147567
 Sanken Electric Co., Ltd. 0.004709576138147567
 Nissan Motor Co., Ltd. 0.004709576138147567
 YALE UNIVERSITY 0.004709576138147567
 Kyocera Corporation 0.004709576138147567
 SAE Magnetics (H.K.) Ltd. 0.004709576138147567
 Showa Denko K.K. 0.004709576138147567
 Kokichi Terajima 0.004709576138147567
 Xinhongzhou Precision Technology Co., Ltd 0.004709576138147567
 Micro Win Tech Inc. 0.004709576138147567
 LARGAN PRECISION CO., LTD. 0.004709576138147567
 ASML Netherlands B.V. 0.004709576138147567
 TDK Corporation 0.004709576138147567
 Tyco Electronics Japan G.K. 0.004709576138147567
 National Chiao Tung University 0.004709576138147567
 Panasonic Liquid Crystal Display Co., Ltd. 0.004709576138147567
 Hyundai Motor Japan R&D Center 0.0031397174254317113
 Nihon Ceratec Co., Ltd. 0.0031397174254317113
 Taiheiyo Cement Corporation 0.0031397174254317113
 Intel Corporation 0.0031397174254317113
 Koito Manufacturing Co., Ltd. 0.0031397174254317113
 Fuji Electric FA Components & Systems Co., Ltd. 0.0031397174254317113
 FURUKAWA AUTOMOTIVE SYSTEMS INC. 0.0031397174254317113
 FURUKAWA MAGNET WIRE CO., LTD. 0.0031397174254317113
 Tsinghua University 0.0031397174254317113
 Tokyo Electric Power Company, Incorporated 0.0031397174254317113
 Ishikawajima-Harima Heavy Industries Co., Ltd. 0.0031397174254317113
 University of California 0.0031397174254317113
 GSI 0.0031397174254317113
 Lawrence Livermore National Security, LLC. 0.0031397174254317113
 Shenzhen Futaihong Precision Industry Co., Ltd. 0.0031397174254317113
 Tanaka Kikinzoku Kogyo K.K. 0.0031397174254317113
 France/Ecole Normale Seperieure de Cachan 0.0031397174254317113
 France and Universitat de les Illes Balears 0.0031397174254317113
 Hynix Semiconductor Inc. 0.0031397174254317113
 WASEDA UNIVERSITY 0.0031397174254317113
 Aisin AW Co., Ltd. 0.0031397174254317113
 Kabushiki Kaisha Toyota Jidoshokki 0.0031397174254317113
 Kyungpook National University Industry Academic Cooperation Foundation
 0.0031397174254317113
 Northeastern University 0.0031397174254317113
 Cal-Comp Electronics & Communications Company Limited 0.0031397174254317113
 UT-Battelle, LLC 0.0031397174254317113
 The Regents of the University of Colorado 0.0031397174254317113
 National Institute of Standards and Technology 0.0031397174254317113

KATHOLIEKE UNIVERSITEIT LEUVEN 0.0031397174254317113
SanDisk 3D LLC 0.0031397174254317113
Elpida Memory, Inc. 0.0031397174254317113
Philips Lumileds Lighting Company, LLC 0.0031397174254317113
Volkswagon AG 0.0031397174254317113
iHi CHARGING SYSTEMS INTERNATIONAL GMBH 0.0031397174254317113
Mahle International GmbH 0.0031397174254317113
AAC Acoustic Technologies (Shenzhen) Co., Ltd. 0.0031397174254317113
Oncotech, Inc. 0.0031397174254317113
Japan Aviation Electronics Industry, Ltd. 0.0031397174254317113
Universal Display Corporation 0.0031397174254317113
Robert Bosch GmbH 0.0031397174254317113
STMicroelectronics (Grenoble 2) SAS 0.0031397174254317113
California Institute of Technology 0.0031397174254317113
Adesto Technologies Corporation 0.0031397174254317113
Fujitsu Limited 0.0031397174254317113
Central Research Institute of Electric Power Industry 0.0031397174254317113
Japan Science and Technology Agency 0.0031397174254317113
Sumitomo Chemical Company, Limited 0.0031397174254317113
Foxconn Technology Co., Ltd. 0.0031397174254317113
Universiteit Gent 0.0031397174254317113
Siemens Industry, Inc. 0.0031397174254317113
Caterpillar Global Mining LLC 0.0031397174254317113
Siemens Medical Solutions USA, Inc. 0.0031397174254317113
Tohoku Pioneer Corporation 0.0031397174254317113
Kyoto University 0.0031397174254317113
Myunghwa Ind. Co. Ltd. 0.0031397174254317113
Tyco Electronics Raychem GmbH 0.0031397174254317113
NthDegree Technologies Worldwide Inc. 0.0031397174254317113
Max-Planck-Gesellschaft zur Foerderung der Wissenschaften E.V.
0.0031397174254317113
Carl Zeiss Microscopy GmbH 0.0031397174254317113
Bruker BioSpin GmbH 0.0031397174254317113
The Trustees of Princeton University 0.0031397174254317113
King Abdulaziz City for Science and Technology 0.0031397174254317113
STMicroelectronics Limited 0.0031397174254317113
NEC Access Technica, Ltd. 0.0031397174254317113
NEC Corporation 0.0031397174254317113
Universite Joseph Fourier 0.0031397174254317113
CNRS-Centre National de la Recherche Scientifique 0.0031397174254317113
Ford Global Technologies, LLC 0.0031397174254317113
Hong Fu Jin Precision Industry (ShenZhen) Co., Ltd. 0.0031397174254317113
Ledlink Optics (Dong Guan) Co. Ltd. 0.0031397174254317113
Yang Zhou LedLink Optics Co., Ltd. 0.0031397174254317113
LedLink Optics, Inc. 0.0031397174254317113
Inventec Appliances Corp. 0.0031397174254317113
Plastic Logic Limited 0.0031397174254317113
Cambridge Enterprise Limited 0.0031397174254317113

Kobe Steel, Limited 0.0031397174254317113
 Innocom Technology (Shenzhen) Co., Ltd. 0.0031397174254317113
 Sumitomo Bakelite Co. Ltd. 0.0031397174254317113
 Dacom Corporation 0.0031397174254317113
 Tokyo Electron Limited 0.0031397174254317113
 The Hong Kong University of Science and Technology 0.0031397174254317113
 GLOBALFOUNDRIES Singapore Pte. Ltd. 0.0031397174254317113
 Nanyang Technological University 0.0031397174254317113
 Shin-Etsu Chemical Co., Ltd. 0.0031397174254317113
 Lite-On Technology Corp. 0.0031397174254317113
 STMICROELECTRONICS ASIA PACIFIC PTE. LTD. 0.0031397174254317113
 Asmo Co., Ltd. 0.0031397174254317113
 Lintec Corporation 0.0031397174254317113
 Kyushu University, National University Corporation 0.0031397174254317113
 HITACHI KOKUSAI ELECTRIC INC. 0.0015698587127158557
 L'Air Liquid, Societe Anonyme pour l'Etude et l'Exploitation des Procedes
 Georges Claude 0.0015698587127158557
 STMicroelectronics (Mala) Ltd 0.0015698587127158557
 ACER INCORPORATED 0.0015698587127158557
 LIANHONG TECHNOLOGY CO., LTD 0.0015698587127158557
 CANON PRECISION, INC. 0.0015698587127158557
 University of Seoul Industry Cooperation Foundation 0.0015698587127158557
 MATERIALS ANALYSIS TECHNOLOGY INC. 0.0015698587127158557
 National Health Research Institutes 0.0015698587127158557
 Chandler Systems, Inc. 0.0015698587127158557
 GENITECH, INC. 0.0015698587127158557
 Korea Electric Power Corporation 0.0015698587127158557
 SOONGSIL UNIVERSITY-INDUSTRY COOPERATION FOUNDATION 0.0015698587127158557
 Dynalloy, Inc 0.0015698587127158557
 GM Global Technology Operations, Inc. 0.0015698587127158557
 HEFEI BOE OPTOELECTRONICS TECHNOLOGY CO., LTD. 0.0015698587127158557
 Cummins PowerGen IP, Inc. 0.0015698587127158557
 CUMMINS CAL PACIFIC, LLC 0.0015698587127158557
 XJ Group Corporation 0.0015698587127158557
 State Grid Corporation of China 0.0015698587127158557
 BEIJING BOE DISPLAY TECHNOLOGY CO., LTD. 0.0015698587127158557
 Spansion LLC 0.0015698587127158557
 Volex PLC 0.0015698587127158557
 Applied Micro Circuits Corporation 0.0015698587127158557
 Advins, Inc. 0.0015698587127158557
 Scientific Analysis Instruments, Ltd. 0.0015698587127158557
 Funai Electric Advanced Applied Technology Research Institute Inc.
 0.0015698587127158557
 Chichibu Fuji Co., Ltd. 0.0015698587127158557
 KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO 0.0015698587127158557
 Nuctech Company Limited 0.0015698587127158557
 Sôny Electronics Inc. 0.0015698587127158557
 Toshiba Industrial Products Manufacturing Corporation 0.0015698587127158557

Phillips Screw Company 0.0015698587127158557
 Sila Nanotechnologies Inc. 0.0015698587127158557
 Olympus Imaging Corp. 0.0015698587127158557
 Olympus Medical Systems Corp. 0.0015698587127158557
 Schlumberger Technology Corporation 0.0015698587127158557
 Toshiba Global Commerce 0.0015698587127158557
 Solutions Holdings Corporation 0.0015698587127158557
 Asahi Kasei Microdevices Corporation 0.0015698587127158557
 Varian Medical Systems, Inc. 0.0015698587127158557
 Sloan-Kettering Institute for Cancer Research 0.0015698587127158557
 TE Connectivity India Private Limited 0.0015698587127158557
 FIH (Hong Kong) Limited 0.0015698587127158557
 Sungkyunkwan University Foundation for Corporate Collaboration
 0.0015698587127158557
 Dongguk University Industry-Academic Cooperation Foundation
 0.0015698587127158557
 Korea University of Technology and Education Industry-University Cooperation
 Foundation 0.0015698587127158557
 Postech Academy-Industry Foundation Postech Univ. of Science and Technology
 0.0015698587127158557
 Industry-University Cooperation Foundation Hanyang University
 0.0015698587127158557
 INDUSTRY FOUNDATION OF CHONNAM NATIONAL UNIVERSITY 0.0015698587127158557
 Cheil Industries Inc. 0.0015698587127158557
 Industry-Academic Cooperation Foundation 0.0015698587127158557
 INDUSTRY-ACADEMY COOPERATION CORPS OF SUNCHON NATIONAL UNIVERSITY
 0.0015698587127158557
 NANO HOLDINGS LLC 0.0015698587127158557
 University of Florida Research Foundation, Inc. 0.0015698587127158557
 Suzhou Golden Crown New Energy Co., Ltd 0.0015698587127158557
 Golden Crown New Energy (HK) Limited 0.0015698587127158557
 Ulvac, Inc. 0.0015698587127158557
 Societe Francaise de Detecteurs Infrarouges - SOFRADIR 0.0015698587127158557
 Universite Montpellier 2 Sciences et Techniques 0.0015698587127158557
 UNIVERSITE CLAUDE BERNARD LYON I 0.0015698587127158557
 Toshiba Medical Systems Corporation 0.0015698587127158557
 Grandis, Inc. 0.0015698587127158557
 Hitachi Mito Engineering Co., Ltd. 0.0015698587127158557
 Chi Mei Communication Systems, Inc. 0.0015698587127158557
 NEC Tokin Corporation 0.0015698587127158557
 Postech Foundation 0.0015698587127158557
 Seoul Opto Device Co., Ltd. 0.0015698587127158557
 TS Tech Co., Ltd. 0.0015698587127158557
 King Abdulaziz City Science and Technology 0.0015698587127158557
 Tyco Electronics Holdings (Bermuda) No. 7 Ltd. 0.0015698587127158557
 Xiangtan Electric Manufacturing Co., Ltd. 0.0015698587127158557
 Xiangtan Liyuan Electric Tooling Co., Ltd. 0.0015698587127158557
 UD Trucks Corporation 0.0015698587127158557

Tokyo Institute of Technology 0.0015698587127158557
University of Massachusetts 0.0015698587127158557
Shinshu University 0.0015698587127158557
Vanderbilt University 0.0015698587127158557
Molecular Sensing, Inc. 0.0015698587127158557
Neomax Materials Co., Ltd. 0.0015698587127158557
Hitachi Metals, Ltd. 0.0015698587127158557
SK Telecom Co., Ltd. 0.0015698587127158557
Mersen USA Newburyport-MA, LLC 0.0015698587127158557
Cal-Comp Precision (Singapore) Limited 0.0015698587127158557
CITIZEN HOLDINGS CO., LTD. 0.0015698587127158557
Citizen Electronics Co., Ltd. 0.0015698587127158557
Institut Ploytechnique de Grenoble 0.0015698587127158557
Curators of the University of Missouri 0.0015698587127158557
Integral Laser Solutions, Inc. 0.0015698587127158557
Silergy Semiconductor Technology (Hangzhou) LTD 0.0015698587127158557
Silergy Technology 0.0015698587127158557
KBC RESEARCH FOUNDATION PVT. LTD. 0.0015698587127158557
SunEdison Semiconductor Limited (UEN201334164H) 0.0015698587127158557
GLOBAL FOUNDRIES INC. 0.0015698587127158557
Sony Computer Entertainment Inc. 0.0015698587127158557
Lextar Electronics Corp. 0.0015698587127158557
Lextar Electronics Corporation 0.0015698587127158557
H-Tech, LLC 0.0015698587127158557
SRI Hermatics Inc. 0.0015698587127158557
American Power Conversion Corporation 0.0015698587127158557
Hydrogenics Corporation 0.0015698587127158557
Alpine Electronics, Inc. 0.0015698587127158557
Blueprint Acoustics Pty Ltd. 0.0015698587127158557
JC Protek Co., Ltd. 0.0015698587127158557
Andong National University Industry Academic Cooperation Foundation
0.0015698587127158557
Shimadzu Corporation 0.0015698587127158557
Shimadzu Research Laboratory (Shanghai) Co. Ltd. 0.0015698587127158557
FCI Americas Technology, Inc. 0.0015698587127158557
FCI 0.0015698587127158557
Askey Computer Corp. 0.0015698587127158557
Askey Technology (Jiangsu) Ltd. 0.0015698587127158557
SCK.-CEN 0.0015698587127158557
Toppan Printing Co., Ltd. 0.0015698587127158557
Advantest Corp. 0.0015698587127158557
FSP-Powerland Technology Inc. 0.0015698587127158557
FSP TECHNOLOGY INC. 0.0015698587127158557
Elpidia Memory, Inc. 0.0015698587127158557
Beth Israel Deaconess Medical Center, Inc. 0.0015698587127158557
The Charles Stark Draper Laboratory, Inc. 0.0015698587127158557
The President and Fellows of Harvard College 0.0015698587127158557
Raytheon Company 0.0015698587127158557

Koninklijke Philips Electronics N.V. 0.0015698587127158557
KONINKLIJKE PHILIPS N.V. 0.0015698587127158557
Sanyo Technology Center (Shenzhen) Co., Ltd. 0.0015698587127158557
Kirk Key Interlock Company LLC 0.0015698587127158557
Utility Relay Company 0.0015698587127158557
Eastfield Corporation 0.0015698587127158557
Peak Power & Mfg., Inc. 0.0015698587127158557
Fuji Jukogyo Kabushiki Kaisha 0.0015698587127158557
Nippon Chemical Industrial Co., Ltd. 0.0015698587127158557
X-FAB SEMICONDUCTOR FOUNDRIES AG 0.0015698587127158557
MELEXIS TECHNOLOGIES NV 0.0015698587127158557
Spicer Technology, Inc. 0.0015698587127158557
Bubble Technologies Industries Inc. 0.0015698587127158557
American Audio Components Inc. 0.0015698587127158557
MEDTRONIC, INC. 0.0015698587127158557
Jae Taiwan, Ltd. 0.0015698587127158557
J & S Electronics, Inc. 0.0015698587127158557
Princeton University Office of Technology and Trademark Licensing
0.0015698587127158557
Tatung University 0.0015698587127158557
Tatung Company 0.0015698587127158557
Headway Technologies, Inc. 0.0015698587127158557
Board of Regents, University of Texas System 0.0015698587127158557
Texas Micro, Inc. 0.0015698587127158557
Konkuk University Industrial Cooperation Corp. 0.0015698587127158557
Tel Solar AG 0.0015698587127158557
Korea University Research and Business Foundation 0.0015698587127158557
SK Hynic Inc. 0.0015698587127158557
IHI AEROSPACE CO., LTD. 0.0015698587127158557
SINFONIA TECHNOLOGY CO., LTD. 0.0015698587127158557
Dainippon Screen Mfg. Co., Ltd. 0.0015698587127158557
Hamamatsu Photonics K.K. 0.0015698587127158557
Keihin Corporation 0.0015698587127158557
Samsung SDI Co., Ltd. 0.0015698587127158557
STMicroelectronics (Research & Development) Limited 0.0015698587127158557
Telaris Inc. 0.0015698587127158557
Suzuki Motor Corporation 0.0015698587127158557
Lithium Energy Japan 0.0015698587127158557
Adesto Technologies France SARL 0.0015698587127158557
Altis Semiconductor 0.0015698587127158557
Fujitsu Component Limited 0.0015698587127158557
Fujitsu Semiconductor Limited 0.0015698587127158557
Power Digital Delight Co., Ltd. 0.0015698587127158557
Easthill Industrial Co., Ltd. 0.0015698587127158557
Conti Temic microelectronic GmbH 0.0015698587127158557
Sumitomo Electric Toyama Co., Ltd. 0.0015698587127158557
Sumitomo Electric Device Innovations, Inc. 0.0015698587127158557
National University Corporation Toyohashi University of Technology

0.0015698587127158557
 Sumitomo Electric Sintered Alloy, Ltd. 0.0015698587127158557
 NATIONAL UNIVERSITY CORPORATION NARA INSTITUTE OF SCIENCE AND TECHNOLOGY
 0.0015698587127158557
 LAAS-CNRE 0.0015698587127158557
 Atmel Rousset S.A.S. 0.0015698587127158557
 FURUI PRECISE COMPONENT (KUNSHAN) CO., LTD. 0.0015698587127158557
 Katholieke Universiteit Leuven, K.U. Leuven R&D 0.0015698587127158557
 Kowa Company Ltd. 0.0015698587127158557
 Techsign Light Panel Co., Ltd. 0.0015698587127158557
 ECOLE NATIONALE SUPERIEURE DE TECHNIQUES AVANCEES 0.0015698587127158557
 ECOLE POLYTECHNIQUE 0.0015698587127158557
 Maytag Corporation 0.0015698587127158557
 Satori S-Tech Co., Ltd. 0.0015698587127158557
 Priestman Goode 0.0015698587127158557
 Cambridge Design Partnership LLP 0.0015698587127158557
 Massachusetts General Hospital 0.0015698587127158557
 Mitsubishi Electric Corporation 0.0015698587127158557
 Pioneer Corporation 0.0015698587127158557
 Applied Materials, Inc. 0.0015698587127158557
 Hitachi Tohbu Semiconductor Ltd. 0.0015698587127158557
 ITT Corporation 0.0015698587127158557
 Hitachi Device Engineering Co., Ltd. 0.0015698587127158557
 Hitachi ULSI Systems Co., Ltd. 0.0015698587127158557
 Hitachi Yonezawa Electronics Co., Ltd. 0.0015698587127158557
 IMEC VZW 0.0015698587127158557
 TDK Korea Corporation 0.0015698587127158557
 BYD Company Limited 0.0015698587127158557
 SHENZHEN BYD AUTO R&D COMPANY LIMITED 0.0015698587127158557
 Sony Mobile Communications Inc. 0.0015698587127158557
 SONY PICTURES TECHNOLOGIES INC. 0.0015698587127158557
 LG Hausys, Ltd. 0.0015698587127158557
 Korea Institute of Science & Technology 0.0015698587127158557
 HYUNDAI MOBIS CO., LTD. 0.0015698587127158557
 SL Lighting Corporation 0.0015698587127158557
 Il Heung Co., Ltd. 0.0015698587127158557
 Hayterzlab 0.0015698587127158557
 Heiwa 0.0015698587127158557
 Champion Elite Company Limited 0.0015698587127158557
 Midas Wei Trading Co., Ltd. 0.0015698587127158557
 Korea Research Institute of Standards and Science 0.0015698587127158557
 Micro Motion Technology Co., Ltd. 0.0015698587127158557
 S.T. Corporation 0.0015698587127158557
 Montana State University 0.0015698587127158557
 Nihon Colmo Co., Ltd. 0.0015698587127158557
 Plextronics, Inc. 0.0015698587127158557
 Nano-C, Inc. 0.0015698587127158557
 The Furukawa Electric Company, Ltd. 0.0015698587127158557

SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC 0.0015698587127158557
 Futaba Corporation 0.0015698587127158557
 OFFICE NATIONAL D'ETUDES ET DE RECHERCHES AEROSPATIALES (ONERA)
 0.0015698587127158557
 COMMISSARIAT ÁL'ÉNERGIE ATOMIQUE ET AUX ÉNERGIES ALTERNATIVES
 0.0015698587127158557
 Nitto Kogaku KK 0.0015698587127158557
 Koike, Yashuhiro 0.0015698587127158557
 Tyco Electronics AMP Espana SA 0.0015698587127158557
 CHAMP TECH OPTICAL (FOSHAN) CORPORATION 0.0015698587127158557
 Hitachi Industrial Equipment System Co. 0.0015698587127158557
 Nippon Steel & Sumikin Stainless Steel Corporation 0.0015698587127158557
 NASA, an agency of the United States 0.0015698587127158557
 NASA 0.0015698587127158557
 Board of Regents of the University of Oklahoma 0.0015698587127158557
 Phononic Devices, Inc. 0.0015698587127158557
 Daimler-Benz AG 0.0015698587127158557
 Ford Motor Company 0.0015698587127158557
 IMRA America, Inc. 0.0015698587127158557
 The Regents of the University of Colorado, a body corporate
 0.0015698587127158557
 EchoStar Technologies, L.L.C. 0.0015698587127158557
 DISH Network L.L.C. 0.0015698587127158557
 KWANSEI GAKUIN EDUCATIONAL FOUNDATION 0.0015698587127158557
 TOYO TANSO CO., LTD. 0.0015698587127158557
 Deutsches Krebsforschungszentrum 0.0015698587127158557
 Saga Sanyo Industries Co., Ltd. 0.0015698587127158557
 Mitsubishi Metal Corporation 0.0015698587127158557
 Furukawa Co., Ltd. 0.0015698587127158557
 Tohoku Techno Arch Co., Ltd. 0.0015698587127158557
 Fu Tai Industry (Shenzhen) Co., Ltd. 0.0015698587127158557
 Ecole Polytechnique Federale de Lausanne (EPFL) 0.0015698587127158557
 Baxter International Inc. 0.0015698587127158557
 Baxter Healthcare S.A. 0.0015698587127158557
 Nujira Limited 0.0015698587127158557
 Skyworks Solutions, Inc. 0.0015698587127158557
 Nantong Ya Tai Candle Arts & Crafts Co., Ltd. 0.0015698587127158557
 Shanghai Q Mall & Co. Ltd. 0.0015698587127158557
 TECHNOVA INC. 0.0015698587127158557
 Toshiba Lightning & Technology Corporation 0.0015698587127158557
 Giant Electric Vehicle Kunshan Co., Ltd. 0.0015698587127158557
 National Yunlin University of Science and Technology 0.0015698587127158557
 Tadahiro Ohmi 0.0015698587127158557
 TOSHIBA TEC KABUSHIKI KAISHA 0.0015698587127158557
 TOSHIBA MATERIALS CO., LTD. 0.0015698587127158557
 Toshiba Electron Tubes & Devices Co., Ltd. 0.0015698587127158557
 Toshiba Lighting & Technology Corporation 0.0015698587127158557
 Battelle Memorial Institute 0.0015698587127158557

Semiconductor Technology Academic Research Center 0.0015698587127158557
 Foundation for Advancement of International Science 0.0015698587127158557
 CSP-Innovazione Nelle ICT Scarl 0.0015698587127158557
 S.I.SV.EL. Societa', Italiana Per Lo Sviluppo Dell'elettronica S.P.A.
 0.0015698587127158557
 Legrand France 0.0015698587127158557
 Legrand SNC 0.0015698587127158557
 Dolby Laboratories Licensing Corporation 0.0015698587127158557
 Dolby International AB 0.0015698587127158557
 National Taipei University of Technology 0.0015698587127158557
 Phansco Corp. 0.0015698587127158557
 Hitachi High-Technologies Corporation 0.0015698587127158557
 Shin-Kobe Electric Machinery Co., Ltd. 0.0015698587127158557
 AT&T MOBILITY II LLC 0.0015698587127158557
 AT&T INTELLECTUAL PROPERTY I, L.P. 0.0015698587127158557
 Oxford Instruments, Ltd. 0.0015698587127158557
 Oxford Instruments AFM, Inc 0.0015698587127158557
 Fundació Institut de Ciències Fotòniques 0.0015698587127158557
 Consejo Superior de Investigaciones Cientificas 0.0015698587127158557
 X-Body Inc. 0.0015698587127158557
 The Board of Trustees of the University of Illinois 0.0015698587127158557
 Global Unichip Corp. 0.0015698587127158557
 KINPO ELECTRONICS, INC. 0.0015698587127158557
 NEC Engineering, Ltd. 0.0015698587127158557
 Toshiba America Electronic Components, Inc. 0.0015698587127158557
 Toyoda Gosei Co., Ltd. 0.0015698587127158557
 Sumita Optical Glass, Inc. 0.0015698587127158557
 ATI Technologies, Inc. 0.0015698587127158557
 ISORG 0.0015698587127158557
 Centre Nationale de la Recherche Scientifique (CNRS) 0.0015698587127158557
 Colonial Plastics, Inc. 0.0015698587127158557
 Dow Global Technologies Inc. 0.0015698587127158557
 Los Alamos National Security, LLC 0.0015698587127158557
 Sharp Corporation 0.0015698587127158557
 NCKU Research & Development Foundation 0.0015698587127158557
 Himax Technologies Limited 0.0015698587127158557
 Hong Fu Precision Industry (ShenZhen) Co., Ltd. 0.0015698587127158557
 Fu Tai Hua Industry (Shenzhen) Co., Ltd. 0.0015698587127158557
 SEMICONDUCTOR ENERGY LABORATORY CO., LTD. 0.0015698587127158557
 Shinko Electric Industries Co., Ltd. 0.0015698587127158557
 Taiyo Yuden Co., Ltd. 0.0015698587127158557
 Tris Inc. 0.0015698587127158557
 The George Washington University 0.0015698587127158557
 The United States of America as represented by the Secretary of the Navy
 0.0015698587127158557
 Korean Broadcasting System 0.0015698587127158557
 Dongwon Systems Corporation 0.0015698587127158557
 Soongsil University Foundation of University-Industry Cooperation

0.0015698587127158557
 Airbus Operations SAS 0.0015698587127158557
 02Micro 0.0015698587127158557
 Ricoh Company, Ltd. 0.0015698587127158557
 Sijtechnology, Inc. 0.0015698587127158557
 Moxtek, Inc. 0.0015698587127158557
 Brigham Young University 0.0015698587127158557
 Kansai University 0.0015698587127158557
 MITSUBISHI HEAVY INDUSTRIES, LTD. 0.0015698587127158557
 Finewell Co., Ltd. 0.0015698587127158557
 Shenzhen Jiawei Photovoltaic Lighting Co., Ltd. 0.0015698587127158557
 Light-Core Limited 0.0015698587127158557
 Q1 Nanosystems, Inc 0.0015698587127158557
 Corning Incorporated 0.0015698587127158557
 S.O.I. Tec Silicon On Insulator Technologies 0.0015698587127158557
 CHENGDU BOE OPTOELECTRONICS TECHNOLOGY CO., LTD. 0.0015698587127158557
 SIEMENS ENERGY, INC. 0.0015698587127158557
 Arkansas Power Electronics International, Inc. 0.0015698587127158557
 The Chinese University of Hong Kong 0.0015698587127158557
 CITY UNIVERSITY OF HONG KONG 0.0015698587127158557
 STMicroelectronics, Inc. 0.0015698587127158557
 Inventec Appliances (Shanghai) Co., Ltd. 0.0015698587127158557
 Leibniz-Institut für Polymerforschung Dresden e.V. 0.0015698587127158557
 Samsung Techwin Co., Ltd. 0.0015698587127158557
 Sumitomo Rubber Industries, Ltd. 0.0015698587127158557
 Tyco Electronics Singapore PTE Ltd. 0.0015698587127158557
 Cornell University 0.0015698587127158557
 Kobelco Construction Machinery Co., Ltd. 0.0015698587127158557
 Regents of the University of Minnesota 0.0015698587127158557
 Life Services, LLC 0.0015698587127158557
 FIAT POWERTRAIN TECHNOLOGIES S.P.A. 0.0015698587127158557
 FPT INDUSTRIAL S.P.A. 0.0015698587127158557
 INNOLUX CORPORATION 0.0015698587127158557
 Murata Machinery, Ltd. 0.0015698587127158557
 The Doshisha 0.0015698587127158557
 JNC Petrochemical Corporation 0.0015698587127158557
 JNC Corporation 0.0015698587127158557
 SK hynix Inc. 0.0015698587127158557
 BAY ZU PRECISION CO., LTD. 0.0015698587127158557
 People & Give Co., Ltd. 0.0015698587127158557
 Global and Creative Partnership 0.0015698587127158557
 Universal Scientific Industrial Co., Ltd. 0.0015698587127158557
 Universal Global Scientific Industrial Co., Ltd. 0.0015698587127158557
 Qiuye Sun 0.0015698587127158557
 Gaslow International Limited 0.0015698587127158557
 Dong Guan Apsun Lighting Technology Co., Ltd 0.0015698587127158557
 LG INNOTEK CO., LTD. 0.0015698587127158557
 LG Electronics Inc. 0.0015698587127158557

MACRONIX INTERNATIONAL CO., LTD. 0.0015698587127158557
 National Applied Research Laboratories 0.0015698587127158557
 MFC Sealing Technology Co., Ltd. 0.0015698587127158557
 Industrial Technology Research Institute 0.0015698587127158557
 Hon Hai Precsion Industry Co., Ltd. 0.0015698587127158557
 Yutaka Giken Co., Ltd. 0.0015698587127158557
 AAC Technologies Holdings Inc. 0.0015698587127158557
 Afton Chemical Corporation 0.0015698587127158557
 Molex Japan Co., Ltd. 0.0015698587127158557
 Advantest Corporation 0.0015698587127158557
 Matheson Tri-Gas 0.0015698587127158557
 VisEra Technologies Company Limited 0.0015698587127158557
 OmniVision Technologies, Inc. 0.0015698587127158557
 Dow Corning Corporation 0.0015698587127158557
 Dow Corning Toray Co., Ltd. 0.0015698587127158557
 Tocalo Co., Ltd. 0.0015698587127158557
 Nippon Telegraph and Telephone Corporation 0.0015698587127158557
 NTT Electronics Corporation 0.0015698587127158557
 VORBECK MATERIALS CORPORATION 0.0015698587127158557
 University of Macau 0.0015698587127158557
 Gigaphoton Inc. 0.0015698587127158557
 Komatsu Ltd. 0.0015698587127158557
 Savannah River Nuclear Solutions, LLC 0.0015698587127158557
 Fisk University 0.0015698587127158557
 Inventec Appliances (Pudong) Corporation 0.0015698587127158557
 Fujikin Incorporated 0.0015698587127158557
 Rockwell Automation Technologies, Inc. 0.0015698587127158557
 Rockwell Automation Safely AG 0.0015698587127158557
 Public Interest Incorporated Foundations Association for the Development of
 Earthquake Prediction 0.0015698587127158557
 Techno Sugaya Co., Ltd. 0.0015698587127158557
 UNIVERSITE DE LIEGE 0.0015698587127158557
 Cockerill Maintenance & Ingénierie S.A. 0.0015698587127158557
 The University of Maryland 0.0015698587127158557
 Calabatas Creek Research, Inc. 0.0015698587127158557
 University of Utah Research Foundation 0.0015698587127158557
 NEC Energy Devices, Ltd. 0.0015698587127158557
 United Microelectronic Corp. 0.0015698587127158557
 Lam Research Corporation 0.0015698587127158557
 Jang Soon Park 0.0015698587127158557
 Baiksang OPC Co., Ltd. 0.0015698587127158557
 Yoshitaka Sugawara 0.0015698587127158557
 Seiko NPC Corporation 0.0015698587127158557
 Casio Computer Co., Ltd. 0.0015698587127158557
 CASIO ELECTRONICS MANUFACTURING CO., LTD. 0.0015698587127158557
 Regal Beloit America, Inc. 0.0015698587127158557
 Regal Beloit Australia Pty Ltd 0.0015698587127158557
 Samsund SDI Co., Ltd. 0.0015698587127158557

National University of Singapore 0.0015698587127158557
 Matsugaki Chemical Industries Co., Ltd. 0.0015698587127158557
 Silitek Electronic (Guangzhou) Co., Ltd. 0.0015698587127158557
 LITE-ON ELECTRONICS (GUANGZHOU) LIMITED 0.0015698587127158557
 Duke University 0.0015698587127158557
 E-NETPIC.COM, Inc. 0.0015698587127158557
 Epic Communications, Inc. 0.0015698587127158557
 STMicoelectronics (Grenoble 2) SAS 0.0015698587127158557
 Battlefield Telecommunications Systems, LLC 0.0015698587127158557
 Purdue Research Foundation 0.0015698587127158557
 North American Lighting, Inc. 0.0015698587127158557
 Toyota Motor Engineering & Manufacturing North America, Inc.
 0.0015698587127158557
 University of Central Florida Research Foundation, Inc. 0.0015698587127158557
 sdPhotonics, LLC 0.0015698587127158557
 STMicroelectronics (Shenzhen) Manufacturing Co., Ltd. 0.0015698587127158557
 STMicroelectronics International N.V. 0.0015698587127158557
 Airbus Operations GmbH 0.0015698587127158557
 GOODRICH LIGHTING SYSTEMS GMBH 0.0015698587127158557
 Ecole Polytechnique Fédérale de Lausanne 0.0015698587127158557
 Hilti Aktiengesellschaft 0.0015698587127158557
 ESW GmbH 0.0015698587127158557
 Bruker HTS GmbH 0.0015698587127158557
 Oswald Elektromotoren GmbH 0.0015698587127158557
 Chung-Hsin Electric & Machinery Mfg. Corp. 0.0015698587127158557
 Wuhan Haixinneng Electric Limited Company 0.0015698587127158557
 Teledyne Scientific & Imaging, LLC 0.0015698587127158557
 Tyco Electronics Amp Korea Ltd. 0.0015698587127158557
 Albert-Ludwigs Universitat Freiburg 0.0015698587127158557
 Micronas GmbH 0.0015698587127158557
 Centre Luxembourgeois de Recherches pour le Verre et la Ceramique S.A.
 (C.R.V.C.) 0.0015698587127158557
 Guardian Industries Corp. 0.0015698587127158557
 Tyco Electronics Belgium EC BVBA 0.0015698587127158557
 TE Connectivity Nederland B.V. 0.0015698587127158557
 KONICA MINOLTA, INC. 0.0015698587127158557
 U-Shin Ltd. 0.0015698587127158557
 Mazda Motor Corporation 0.0015698587127158557
 DENSO International America, Inc. 0.0015698587127158557
 West Corporation 0.0015698587127158557
 Dongguan Masstop Liquid Crystal Display Co., Ltd. 0.0015698587127158557
 Torchlight Technology Co., Ltd. 0.0015698587127158557
 Tyco Electronics Svenska Holdings AB 0.0015698587127158557
 Advics Co., Ltd. 0.0015698587127158557
 Synopsys, Inc. 0.0015698587127158557
 Synopsys Taiwan Co., Ltd. 0.0015698587127158557
 CDT OXFORD LIMITED 0.0015698587127158557
 CAMBRIDGE DISPLAY TECHNOLOGY LIMITED 0.0015698587127158557

Beijing Asahi Glass Electronics Co., Ltd. 0.0015698587127158557
 Suzhou Boe Chatani Electronics Co., Ltd. 0.0015698587127158557
 Mitsubishi Jidosha Kogyo Kabushiki Kaisha 0.0015698587127158557
 Mitsubishi Jidosha Engineering Kabushiki Kaisha 0.0015698587127158557
 Toyota Boshoku Kabushiki Kaisha 0.0015698587127158557
 Toyota Shatai Kabushiki Kaisha 0.0015698587127158557
 Fraunhofer-Gesellschaft zur Foerderung der angewandten Forschung e.V.
 0.0015698587127158557
 Shin-Etsu Handotai Co., Ltd. 0.0015698587127158557
 Stanley Electric Co., Ltd. 0.0015698587127158557
 Chimei Innolux Corporation 0.0015698587127158557
 Peking University Founder Group Co., Ltd. 0.0015698587127158557
 Founder Microelectronics International Co., Ltd. 0.0015698587127158557
 Texas Instruments Deutschland GmbH 0.0015698587127158557
 Texas Instruments Incorporated 0.0015698587127158557
 INVENTEC (PUDONG) TECHNOLOGY CORPORATION 0.0015698587127158557
 Richtek Technology Corporation 0.0015698587127158557
 Infineon Technologies AG 0.0015698587127158557
 American Air Liquide, Inc. 0.0015698587127158557
 L'Air Liquide Société Anonyme Pour L'Étude Et L'Exploitation Des Procédés
 Georges Clause 0.0015698587127158557
 Stichting National Lucht-En Ruimtevaart Laboratorium 0.0015698587127158557
 Yamato Electronic Co., Ltd. 0.0015698587127158557
 Nippon Soken, Inc. 0.0015698587127158557
 Fu An Industrial Co., Ltd. 0.0015698587127158557
 Get Auto Accessories Co., Ltd. 0.0015698587127158557
 UNIVERSITY OF NEBRASKA BOARD OF REGENTS 0.0015698587127158557
 J.A. Woollam Co. Inc. 0.0015698587127158557
 Topmore Technology Inc. 0.0015698587127158557
 Aptos Technology Inc. 0.0015698587127158557
 Hitachi Displays, Ltd. 0.0015698587127158557
 JAPAN DISPLAY INC. 0.0015698587127158557
 Henkel Corporation 0.0015698587127158557

```

[25]: # eigenvector centrality
most_important_link = nx.eigenvector_centrality(us_graph, max_iter=500)
for w in sorted(most_important_link, key=most_important_link.get, reverse=True):
    print(w, most_important_link[w])
  
```

International Business Machines Corporation 0.45813003028955307
 Samsung Electronics Co., Ltd. 0.4316882680143975
 STMICROELECTRONICS S.R.L. 0.33897072011146945
 COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES
 0.24047786993028206
 FREESCALE SEMICONDUCTOR, INC. 0.21000175507774457
 GLOBALFOUNDRIES Inc. 0.20634328236519153
 STMICROELECTRONICS (CROLLES 2) SAS 0.16941578123418422
 Kabushiki Kaisha Toshiba 0.16120311083141994

Centre National de la Recherche Scientifique (CNRS) 0.12871241958293347
 Samsung Display Co., Ltd. 0.11558633904181562
 IMEC 0.10138705794847949
 Industry-Academic Cooperation Foundation, Yonsei University 0.09419447698017736
 SNU R&DB FOUNDATION 0.09181066170812134
 Korea Advanced Institute of Science & Technology 0.0897007605188954
 STMicroelectronics Limited 0.08736606969814834
 Taiwan Semiconductor Manufacturing Company, Ltd. 0.08704546490027698
 Sumitomo Bakelite Co. Ltd. 0.0867079764713347
 Dacom Corporation 0.0867079764713347
 Renesas Electronics Corporation 0.08348029548942879
 The Regents of the University of California 0.08187260081386839
 Seoul National University Industry Foundation 0.07824270685112465
 Advanced Micro Devices, Inc. 0.07679906195108382
 King Abdulaziz City for Science and Technology 0.07491350181541453
 GLOBAL FOUNDRIES INC. 0.07290893371996789
 Applied Materials, Inc. 0.07290893371996789
 Toshiba America Electronic Components, Inc. 0.07290893371996789
 Cornell University 0.07290893371996789
 BAY ZU PRECISION CO., LTD. 0.07290893371996789
 MACRONIX INTERNATIONAL CO., LTD. 0.07290893371996789
 Matheson Tri-Gas 0.07290893371996789
 Infineon Technologies AG 0.07290893371996789
 Georgia Tech Research Corp. 0.07236954216993262
 Osaka University 0.07236954216993262
 University of Seoul Industry Cooperation Foundation 0.06870339967415455
 GENITECH, INC. 0.06870339967415455
 Korea Electric Power Corporation 0.06870339967415455
 Sungkyunkwan University Foundation for Corporate Collaboration
 0.06870339967415455
 Dongguk University Industry-Academic Cooperation Foundation 0.06870339967415455
 Korea University of Technology and Education Industry-University Cooperation
 Foundation 0.06870339967415455
 Postech Academy-Industry Foundation Postech Univ. of Science and Technology
 0.06870339967415455
 Industry-University Cooperation Foundation Hanyang University
 0.06870339967415455
 INDUSTRY FOUNDATION OF CHONNAM NATIONAL UNIVERSITY 0.06870339967415455
 Cheil Industries Inc. 0.06870339967415455
 Industry-Academic Cooperation Foundation 0.06870339967415455
 INDUSTRY-ACADEMY COOPERATION CORPS OF SUNCHON NATIONAL UNIVERSITY
 0.06870339967415455
 Intermolecular, Inc. 0.06777081750179055
 STMICROELECTRONICS ASIA PACIFIC PTE. LTD. 0.055385814446158664
 STMicroelectronics (Grenoble 2) SAS 0.055347419443303604
 STMicroelectronics (Mala) Ltd 0.053945633717555085
 STMicroelectronics (Grenoble 2) SAS 0.053945633717555085
 STMicroelectronics (Shenzhen) Manufacturing Co., Ltd. 0.053945633717555085

STMicroelectronics International N.V. 0.053945633717555085
 Universite Joseph Fourier 0.04551361915658404
 CNRS-Centre National de la Recherche Scientifique 0.04551361915658404
 Institut Ploytechnique de Grenoble 0.038270475726493475
 ISORG 0.038270475726493475
 Centre Nationale de la Recherche Scientifique (CNRS) 0.038270475726493475
 SanDisk 3D LLC 0.03643961018154147
 Conti Temic microelectronic GmbH 0.03342043598059326
 Tokyo Electric Power Company, Incorporated 0.03050964015873904
 Ishikawajima-Harima Heavy Industries Co., Ltd. 0.03050964015873904
 The Board of Trustees of the Leland Stanford Junior University
 0.030218506960651124
 STMicroeletronics, Inc. 0.02696149611195337
 Sony C rporation 0.025850208996698525
 Toshiba Industrial Products Manufacturing Corporation 0.025654294928027427
 Toshiba Medical Systems Corporation 0.025654294928027427
 Toshiba Lightning & Technology Corporation 0.025654294928027427
 TOSHIBA TEC KABUSHIKI KAISHA 0.025654294928027427
 TOSHIBA MATERIALS CO., LTD. 0.025654294928027427
 Toshiba Electron Tubes & Devices Co., Ltd. 0.025654294928027427
 Toshiba Lighting & Technology Corporation 0.025654294928027427
 France/Ecole Normale Seperieure de Cachan 0.024360473902886016
 France and Universitat de les Illes Balears 0.024360473902886016
 Hyundai Motor Company 0.0235786784414443
 Panasonic Corporation 0.022396389044840058
 Kia Motors Corporation 0.02100241351242177
 ASML Netherlands B.V. 0.02077990029462191
 Societe Francaise de Detecteurs Infrarouges - SOFRADIR 0.02048370035963474
 Universite Montpellier 2 Sciences et Techniques 0.02048370035963474
 UNIVERSITE CLAUDE BERNARD LYON I 0.02048370035963474
 Kobe Steel, Limited 0.01887386988403148
 Kyungpook National University Industry Academic Cooperation Foundation
 0.01726249535358259
 KATHOLIEKE UNIVERSITEIT LEUVEN 0.01655663260432348
 Universiteit Gent 0.01655663260432348
 Electronics and Telecommunications Research Institute 0.01634628907649445
 Katholieke Universiteit Leuven, K.U. Leuven R&D 0.016137164499564472
 Hynix Semiconductor Inc. 0.014991565455654362
 SK Telecom Co., Ltd. 0.01461183099994617
 Global Unichip Corp. 0.013853681688097226
 Japan Science and Technology Agency 0.013431939732457638
 Hitachi Tohbu Semiconductor Ltd. 0.013285367465408635
 ITT Corporation 0.013285367465408635
 Hitachi Device Engineering Co., Ltd. 0.013285367465408635
 Hitachi ULSI Systems Co., Ltd. 0.013285367465408635
 Hitachi Yonezawa Electronics Co., Ltd. 0.013285367465408635
 University of Massachusetts 0.013030300945851213
 Q1 Nanosystems, Inc 0.013030300945851213

Teledyne Scientific & Imaging, LLC 0.013030300945851213
 KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS 0.01259601314553718
 Samsung Techwin Co., Ltd. 0.012452593136407364
 Spansion LLC 0.012222104143213869
 ATI Technologies, Inc. 0.012222104143213869
 Phillips Screw Company 0.011517712758787563
 Sila Nanotechnologies Inc. 0.011517712758787563
 Dainippon Screen Mfg. Co., Ltd. 0.011517712758787563
 Hamamatsu Photonics K.K. 0.011517712758787563
 Elpida Memory, Inc. 0.011073042135950098
 Elpidia Memory, Inc. 0.010785315253514038
 Toyota Jidosha Kabushiki Kaisha 0.009861229011250914
 Sumitomo Electric Industries, Ltd. 0.009111190513532319
 Nanyang Technological University 0.009049523699672374
 STMicroelectronics (Research & Development) Limited 0.008808262274915246
 Honda Motor Co., Ltd. 0.007542350779655358
 Hyundai Motor Japan R&D Center 0.007095281816084602
 Myunghwa Ind. Co. Ltd. 0.007095281816084602
 Rohm Co., Ltd. 0.00626621619632014
 Tohoku University 0.005387841096783582
 Kyoto University 0.005114427641046359
 The Hong Kong University of Science and Technology 0.004934945898104303
 Lintec Corporation 0.004242723913256142
 Kyushu University, National University Corporation 0.004242723913256142
 Sôny Electronics Inc. 0.004116143068560741
 Sony Computer Entertainment Inc. 0.004116143068560741
 Tel Solar AG 0.004116143068560741
 Sony Mobile Communications Inc. 0.004116143068560741
 SONY PICTURES TECHNOLOGIES INC. 0.004116143068560741
 Panasonic Liquid Crystal Display Co., Ltd. 0.003757612102446119
 LG Hausys, Ltd. 0.003752657837850895
 Korea Institute of Science & Technology 0.003752657837850895
 HYUNDAI MOBIS CO., LTD. 0.003752657837850895
 SL Lighting Corporation 0.003752657837850895
 Il Heung Co., Ltd. 0.003752657837850895
 Cambridge Enterprise Limited 0.003662244133108439
 WASEDA UNIVERSITY 0.0036597577108379367
 Autonetwoks Technologies, Ltd. 0.0036083174045692724
 Sumitomo Wiring Systems, Ltd. 0.0036083174045692724
 National University Corporation Nagoya University 0.003591052269190269
 Nihon Colmo Co., Ltd. 0.0035668761637707587
 Fuji Electric Co., Ltd. 0.0034782588445674786
 Stichting National Lucht-En Ruimtevaart Laboratorium 0.0033078557426458126
 Sharp Kabushiki Kaisha 0.0032989794651176775
 AISIN SEIKI KABUSHIKI KAISHA 0.0031104989410684976
 Denso Corporation 0.003087378128731179
 Kobelco Construction Machinery Co., Ltd. 0.003003836618804158
 SCK.-CEN 0.002635290801312462

IMEC VZW 0.002635290801312462
 SOONGSIL UNIVERSITY-INDUSTRY COOPERATION FOUNDATION 0.0026015653548026444
 Konkuk University Industrial Cooperation Corp. 0.0026015653548026444
 Korean Broadcasting System 0.0026015653548026444
 Dongwon Systems Corporation 0.0026015653548026444
 Soongsil University Foundation of University-Industry Cooperation
 0.0026015653548026444
 National Institute of Advanced Industrial Science and Technology
 0.002522512388588826
 Sumitomo Metal Mining Co., Ltd. 0.002499375672646654
 Grandis, Inc. 0.002385951769810231
 Massachusetts Institute of Technology 0.002230528612052467
 Aisin AW Co., Ltd. 0.0020733555595960056
 King Abdulaziz City Science and Technology 0.0020045680954466375
 Hino Motors, Ltd. 0.0019272609085059314
 Koito Manufacturing Co., Ltd. 0.0018846593232495737
 Tokyo Electron Limited 0.0018079875010195412
 Kabushiki Kaisha Toyota Jidoshokki 0.0016968976589754495
 KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO 0.0015761899154973905
 Shinshu University 0.0015761899154973905
 GLOBALFOUNDRIES Singapore Pte. Ltd. 0.0014776033448941673
 Sumitomo Electric Toyama Co., Ltd. 0.001454971675892045
 Sumitomo Electric Device Innovations, Inc. 0.001454971675892045
 National University Corporation Toyohashi University of Technology
 0.001454971675892045
 Sumitomo Electric Sintered Alloy, Ltd. 0.001454971675892045
 NATIONAL UNIVERSITY CORPORATION NARA INSTITUTE OF SCIENCE AND TECHNOLOGY
 0.001454971675892045
 TDK Corporation 0.0012245468019549085
 SAE Magnetics (H.K.) Ltd. 0.001224546801954908
 TS Tech Co., Ltd. 0.0012025697129131622
 Tokyo Institute of Technology 0.0012025697129131622
 Keihin Corporation 0.0012025697129131622
 Sumitomo Rubber Industries, Ltd. 0.0012025697129131622
 Yutaka Giken Co., Ltd. 0.0012025697129131622
 Stanley Electric Co., Ltd. 0.0012025697129131622
 Sanken Electric Co., Ltd. 0.0011405616551523896
 Nissan Motor Co., Ltd. 0.0011405616551523896
 Murata Manufacturing Co., Ltd. 0.0011279864787165975
 Tadahiro Ohmi 0.0009982845724856178
 Kansai University 0.0009982845724856178
 MITSUBISHI HEAVY INDUSTRIES, LTD. 0.0009982845724856178
 Finewell Co., Ltd. 0.0009982845724856178
 SK hynix Inc. 0.0008581443679653236
 Fujikin Incorporated 0.0008581443679653236
 University of Macau 0.0007855291456752742
 Showa Denko K.K. 0.0007563433822760645
 Kyocera Corporation 0.0006816332245449124

Oncotech, Inc. 0.0006664842751411207
 Seiko Epson Corporation 0.0006406084712227015
 The University of Tokyo 0.0006312109988584909
 OLYMPUS CORPORATION 0.0006283337318938422
 The Furukawa Electric Co., Ltd. 0.0006065453315042851
 Plastic Logic Limited 0.0005985618113865256
 Hitachi Displays, Ltd. 0.0005985618113865256
 JAPAN DISPLAY INC. 0.0005985618113865256
 FURUKAWA MAGNET WIRE CO., LTD. 0.0005926541874461529
 UD Trucks Corporation 0.0005829662024182051
 TECHNOVA INC. 0.0005746388648927304
 Semiconductor Technology Academic Research Center 0.0005746388648927304
 Foundation for Advancement of International Science 0.0005746388648927304
 Fuji Electric FA Components & Systems Co., Ltd. 0.0005718372050188169
 Funai Electric Advanced Applied Technology Research Institute Inc.
 0.0005570932942155983
 Yoshitaka Sugawara 0.0005570932942155983
 SEMICONDUCTOR ENERGY LABORATORY CO., LTD. 0.0005272317585515378
 Central Research Institute of Electric Power Industry 0.0005223465300844822
 Asmo Co., Ltd. 0.0005082985258460908
 Sumitomo Chemical Company, Limited 0.0005023732242341063
 NEC Tokin Corporation 0.0004951448417603794
 Tris Inc. 0.0004951448417603794
 DENSO International America, Inc. 0.0004951448417603794
 Advics Co., Ltd. 0.0004951448417603794
 Nippon Soken, Inc. 0.0004951448417603794
 Beth Israel Deaconess Medical Center, Inc. 0.0003549702382754391
 The Charles Stark Draper Laboratory, Inc. 0.0003549702382754391
 The President and Fellows of Harvard College 0.0003549702382754391
 Raytheon Company 0.0003549702382754391
 Henkel Corporation 0.0003084694077521832
 Tocalo Co., Ltd. 0.000287726882436059
 National University of Singapore 0.00023515117981422063
 Tanaka Kikinzoku Kogyo K.K. 0.0002034022982632585
 TDK Korea Corporation 0.00019515136461496942
 Headway Technologies, Inc. 0.00019515136461496934
 Asahi Kasei Microdevices Corporation 0.0001810051242476699
 KONICA MINOLTA, INC. 0.0001810051242476699
 MEDTRONIC, INC. 0.00010939098092552235
 Universal Display Corporation 0.00010538992998880639
 Seiko NPC Corporation 0.00010266786063557555
 Olympus Imaging Corp. 0.0001008735342311986
 Olympus Medical Systems Corp. 0.0001008735342311986
 Schlumberger Technology Corporation 0.00010073443762768297
 FURUKAWA AUTOMOTIVE SYSTEMS INC. 0.00010011721019902751
 Leibniz-Institut für Polymerforschung Dresden e.V. 9.536796933768017e-05
 Chichibu Fuji Co., Ltd. 9.173561295888772e-05
 Yamato Electronic Co., Ltd. 8.167700813907773e-05

Princeton University Office of Technology and Trademark Licensing
 1.6920256067053562e-05
 The Furukawa Electric Company, Ltd. 1.6135254566122414e-05
 Kokichi Terajima 1.679548786010822e-12
 Xinhongzhou Precision Technology Co., Ltd 1.679548786010822e-12
 Micro Win Tech Inc. 1.679548786010822e-12
 LARGAN PRECISION CO., LTD. 1.679548786010822e-12
 University of Tennessee Research Foundation 3.893575584116354e-14
 YALE UNIVERSITY 2.8775930339526017e-14
 UT-Battelle, LLC 2.575909807956941e-14
 The Regents of the University of Colorado 2.390674803966723e-14
 National Institute of Standards and Technology 2.390674803966723e-14
 University of Utah Research Foundation 1.0947032245339941e-14
 Tyco Electronics Corporation 3.058375024668444e-15
 Siémens Aktiengesellschaft 2.015774997285506e-15
 Tyco Electronics Japan G.K. 1.957480889296755e-15
 Tyco Electronics Raychem GmbH 1.5449302684550563e-15
 Siemens Industry, Inc. 1.4608355354140517e-15
 Caterpillar Global Mining LLC 1.4608355354140517e-15
 Hon Hai Precision Industry Co., Ltd. 1.3823205081103573e-15
 TE Connectivity India Private Limited 1.2760047633066684e-15
 Tyco Electronics Holdings (Bermuda) No. 7 Ltd. 1.2760047633066684e-15
 Tyco Electronics Amp Korea Ltd. 1.2760047633066684e-15
 Siemens Medical Solutions USA, Inc. 1.0286200881738171e-15
 Massachusetts General Hospital 8.470076587027285e-16
 Tyco Electronics Singapore PTE Ltd. 8.166934825238591e-16
 Tyco Electronics Svenska Holdings AB 8.166934825238591e-16
 Hong Fu Jin Precision Industry (ShenZhen) Co., Ltd. 7.252311691851027e-16
 Tsinghua University 7.252311691851026e-16
 Tyco Electronics AMP Espana SA 6.445705190163019e-16
 Fu Tai Industry (Shenzhen) Co., Ltd. 5.921487700214671e-16
 Hong Fu Precision Industry (ShenZhen) Co., Ltd. 5.921487700214671e-16
 Fu Tai Hua Industry (Shenzhen) Co., Ltd. 5.921487700214671e-16
 Duke University 4.3221544762212004e-16
 BOE TECHNOLOGY GROUP CO., LTD. 3.7017009995208453e-16
 Nuctech Company Limited 3.1066944481756953e-16
 Hon Hai Precsion Industry Co., Ltd. 3.1066944481756953e-16
 HEFEI BOE OPTOELECTRONICS TECHNOLOGY CO., LTD. 1.655451013461505e-16
 BEIJING BOE DISPLAY TECHNOLOGY CO., LTD. 1.655451013461505e-16
 CHENGDU BOE OPTOELECTRONICS TECHNOLOGY CO., LTD. 1.655451013461505e-16
 Beijing Asahi Glass Electronics Co., Ltd. 1.655451013461505e-16
 Suzhou Boe Chatani Electronics Co., Ltd. 1.655451013461505e-16
 Canon Kabushiki Kaisha 1.1421052329037462e-16
 Nihon Ceratec Co., Ltd. 9.760861662431706e-17
 Taiheiyo Cement Corporation 9.760861662431706e-17
 CANON PRECISION, INC. 5.2629479974295725e-17
 Sanyo Electric Co., Ltd. 1.4251380805948534e-17
 University of California 9.500920537299017e-18

GSI 9.500920537299017e-18
 Lawrence Livermore National Security, LLC. 9.500920537299017e-18
 Volkswagon AG 9.500920537299017e-18
 iHi CHARGING SYSTEMS INTERNATIONAL GMBH 9.500920537299017e-18
 Mahle International GmbH 9.500920537299017e-18
 Ledlink Optics (Dong Guan) Co. Ltd. 9.500920537299017e-18
 Yang Zhou LedLink Optics Co., Ltd. 9.500920537299017e-18
 LedLink Optics, Inc. 9.500920537299017e-18
 Ulvac, Inc. 7.125690402974268e-18
 Sanyo Technology Center (Shenzhen) Co., Ltd. 7.125690402974268e-18
 Saga Sanyo Industries Co., Ltd. 7.125690402974268e-18
 Mitsubishi Metal Corporation 7.125690402974268e-18
 Hitachi, Ltd. 2.5507046309727877e-19
 National Chiao Tung University 2.5507046309727877e-19
 Hitachi Mito Engineering Co., Ltd. 1.4726500053153642e-19
 Hitachi High-Technologies Corporation 1.4726500053153642e-19
 Shin-Kobe Electric Machinery Co., Ltd. 1.4726500053153642e-19
 Industrial Technology Research Institute 1.4726500053153642e-19
 Torchlight Technology Co., Ltd. 1.4726500053153642e-19
 Richtek Technology Corporation 1.4726500053153642e-19
 Max-Planck-Gesellschaft zur Foerderung der Wissenschaften E.V.
 3.648589860698905e-20
 Carl Zeiss Microscopy GmbH 3.648589860698905e-20
 NEC Access Technica, Ltd. 3.648589860698905e-20
 NEC Corporation 3.648589860698905e-20
 Deutsches Krebsforschungszentrum 2.2549525449201677e-20
 NEC Engineering, Ltd. 2.2549525449201677e-20
 NEC Energy Devices, Ltd. 2.2549525449201677e-20
 Fraunhofer-Gesellschaft zur Foerderung der angewandten Forschung e.V.
 2.2549525449201677e-20
 Intel Corporation 1.2502517221708469e-21
 Shenzhen Futaihong Precision Industry Co., Ltd. 1.2502517221708469e-21
 Northeastern University 1.2502517221708469e-21
 Cal-Comp Electronics & Communications Company Limited 1.2502517221708469e-21
 Philips Lumileds Lighting Company, LLC 1.2502517221708469e-21
 AAC Acoustic Technologies (Shenzhen) Co., Ltd. 1.2502517221708469e-21
 Japan Aviation Electronics Industry, Ltd. 1.2502517221708469e-21
 Robert Bosch GmbH 1.2502517221708469e-21
 California Institute of Technology 1.2502517221708469e-21
 Adesto Technologies Corporation 1.2502517221708469e-21
 Fujitsu Limited 1.2502517221708469e-21
 Foxconn Technology Co., Ltd. 1.2502517221708469e-21
 Tohoku Pioneer Corporation 1.2502517221708469e-21
 NthDegree Technologies Worldwide Inc. 1.2502517221708469e-21
 Bruker BioSpin GmbH 1.2502517221708469e-21
 The Trustees of Princeton University 1.2502517221708469e-21
 Ford Global Technologies, LLC 1.2502517221708469e-21
 Inventec Appliances Corp. 1.2502517221708469e-21

Innocom Technology (Shenzhen) Co., Ltd. 1.2502517221708469e-21
 Shin-Etsu Chemical Co., Ltd. 1.2502517221708469e-21
 Lite-On Technology Corp. 1.2502517221708469e-21
 Chandler Systems, Inc. 8.840614709371652e-22
 FIH (Hong Kong) Limited 8.840614709371652e-22
 Chi Mei Communication Systems, Inc. 8.840614709371652e-22
 Mersen USA Newburyport-MA, LLC 8.840614709371652e-22
 Cal-Comp Precision (Singapore) Limited 8.840614709371652e-22
 Koninklijke Philips Electronics N.V. 8.840614709371652e-22
 KONINKLIJKE PHILIPS N.V. 8.840614709371652e-22
 American Audio Components Inc. 8.840614709371652e-22
 Jae Taiwan, Ltd. 8.840614709371652e-22
 J & S Electronics, Inc. 8.840614709371652e-22
 Samsung SDI Co., Ltd. 8.840614709371652e-22
 Telaris Inc. 8.840614709371652e-22
 Adesto Technologies France SARL 8.840614709371652e-22
 Altis Semiconductor 8.840614709371652e-22
 Fujitsu Component Limited 8.840614709371652e-22
 Fujitsu Semiconductor Limited 8.840614709371652e-22
 FURUI PRECISE COMPONENT (KUNSHAN) CO., LTD. 8.840614709371652e-22
 Mitsubishi Electric Corporation 8.840614709371652e-22
 Pioneer Corporation 8.840614709371652e-22
 CHAMP TECH OPTICAL (FOSHAN) CORPORATION 8.840614709371652e-22
 NASA, an agency of the United States 8.840614709371652e-22
 NASA 8.840614709371652e-22
 Ecole Polytechnique Federale de Lausanne (EPFL) 8.840614709371652e-22
 Battelle Memorial Institute 8.840614709371652e-22
 KINPO ELECTRONICS, INC. 8.840614709371652e-22
 Colonial Plastics, Inc. 8.840614709371652e-22
 Dow Global Technologies Inc. 8.840614709371652e-22
 Inventec Appliances (Shanghai) Co., Ltd. 8.840614709371652e-22
 INNOLUX CORPORATION 8.840614709371652e-22
 Qiuye Sun 8.840614709371652e-22
 AAC Technologies Holdings Inc. 8.840614709371652e-22
 Afton Chemical Corporation 8.840614709371652e-22
 VORBECK MATERIALS CORPORATION 8.840614709371652e-22
 Inventec Appliances (Pudong) Corporation 8.840614709371652e-22
 Samsund SDI Co., Ltd. 8.840614709371652e-22
 Matsugaki Chemical Industries Co., Ltd. 8.840614709371652e-22
 Silitek Electronic (Guangzhou) Co., Ltd. 8.840614709371652e-22
 LITE-ON ELECTRONICS (GUANGZHOU) LIMITED 8.840614709371652e-22
 Ecole Polytechnique Fédérale de Lausanne 8.840614709371652e-22
 Shin-Etsu Handotai Co., Ltd. 8.840614709371652e-22
 Chimei Innolux Corporation 8.840614709371652e-22
 INVENTEC (PUDONG) TECHNOLOGY CORPORATION 8.840614709371652e-22
 HITACHI KOKUSAI ELECTRIC INC. 3.8188518056149906e-25
 L'Air Liquid, Societe Anonyme pour l'Etude et l'Exploitation des Procédes
 Georges Claude 3.8188518056149906e-25

ACER INCORPORATED 3.8188518056149906e-25
LIANHONG TECHNOLOGY CO., LTD 3.8188518056149906e-25
MATERIALS ANALYSIS TECHNOLOGY INC. 3.8188518056149906e-25
National Health Research Institutes 3.8188518056149906e-25
Dynalloy, Inc 3.8188518056149906e-25
GM Global Technology Operations, Inc. 3.8188518056149906e-25
Cummins PowerGen IP, Inc. 3.8188518056149906e-25
CUMMINS CAL PACIFIC, LLC 3.8188518056149906e-25
XJ Group Corporation 3.8188518056149906e-25
State Grid Corporation of China 3.8188518056149906e-25
Volex PLC 3.8188518056149906e-25
Applied Micro Circuits Corporation 3.8188518056149906e-25
Advins, Inc. 3.8188518056149906e-25
Scientific Analysis Instruments, Ltd. 3.8188518056149906e-25
Toshiba Global Commerce 3.8188518056149906e-25
Solutions Holdings Corporation 3.8188518056149906e-25
Varian Medical Systems, Inc. 3.8188518056149906e-25
Sloan-Kettering Institute for Cancer Research 3.8188518056149906e-25
NANO HOLDINGS LLC 3.8188518056149906e-25
University of Florida Research Foundation, Inc. 3.8188518056149906e-25
Suzhou Golden Crown New Energy Co., Ltd 3.8188518056149906e-25
Golden Crown New Energy (HK) Limited 3.8188518056149906e-25
Postech Foundation 3.8188518056149906e-25
Seoul Opto Device Co., Ltd. 3.8188518056149906e-25
Xiangtan Electric Manufacturing Co., Ltd. 3.8188518056149906e-25
Xiangtan Liyuan Electric Tooling Co., Ltd. 3.8188518056149906e-25
Vanderbilt University 3.8188518056149906e-25
Molecular Sensing, Inc. 3.8188518056149906e-25
Neomax Materials Co., Ltd. 3.8188518056149906e-25
Hitachi Metals, Ltd. 3.8188518056149906e-25
CITIZEN HOLDINGS CO., LTD. 3.8188518056149906e-25
Citizen Electronics Co., Ltd. 3.8188518056149906e-25
Curators of the University of Missouri 3.8188518056149906e-25
Integral Laser Solutions, Inc. 3.8188518056149906e-25
Silergy Semiconductor Technology (Hangzhou) LTD 3.8188518056149906e-25
Silergy Technology 3.8188518056149906e-25
KBC RESEARCH FOUNDATION PVT. LTD. 3.8188518056149906e-25
SunEdison Semiconductor Limited (UEN201334164H) 3.8188518056149906e-25
Lextar Electronics Corp. 3.8188518056149906e-25
Lextar Electronics Corporation 3.8188518056149906e-25
H-Tech, LLC 3.8188518056149906e-25
SRI Hermatics Inc. 3.8188518056149906e-25
American Power Conversion Corporation 3.8188518056149906e-25
Hydrogenics Corporation 3.8188518056149906e-25
Alpine Electronics, Inc. 3.8188518056149906e-25
Blueprint Acoustics Pty Ltd. 3.8188518056149906e-25
JC Protek Co., Ltd. 3.8188518056149906e-25
Andong National University Industry Academic Cooperation Foundation

3.8188518056149906e-25
Shimadzu Corporation 3.8188518056149906e-25
Shimadzu Research Laboratory (Shanghai) Co. Ltd. 3.8188518056149906e-25
FCI Americas Technology, Inc. 3.8188518056149906e-25
FCI 3.8188518056149906e-25
Askey Computer Corp. 3.8188518056149906e-25
Askey Technology (Jiangsu) Ltd. 3.8188518056149906e-25
Toppan Printing Co., Ltd. 3.8188518056149906e-25
Advantest Corp. 3.8188518056149906e-25
FSP-Powerland Technology Inc. 3.8188518056149906e-25
FSP TECHNOLOGY INC. 3.8188518056149906e-25
Kirk Key Interlock Company LLC 3.8188518056149906e-25
Utility Relay Company 3.8188518056149906e-25
Eastfield Corporation 3.8188518056149906e-25
Peak Power & Mfg., Inc. 3.8188518056149906e-25
Fuji Jukogyo Kabushiki Kaisha 3.8188518056149906e-25
Nippon Chemical Industrial Co., Ltd. 3.8188518056149906e-25
X-FAB SEMICONDUCTOR FOUNDRIES AG 3.8188518056149906e-25
MELEXIS TECHNOLOGIES NV 3.8188518056149906e-25
Spicer Technology, Inc. 3.8188518056149906e-25
Bubble Technologies Industries Inc. 3.8188518056149906e-25
Tatung University 3.8188518056149906e-25
Tatung Company 3.8188518056149906e-25
Board of Regents, University of Texas System 3.8188518056149906e-25
Texas Micro, Inc. 3.8188518056149906e-25
Korea University Research and Business Foundation 3.8188518056149906e-25
SK Hynic Inc. 3.8188518056149906e-25
IHI AEROSPACE CO., LTD. 3.8188518056149906e-25
SINFONIA TECHNOLOGY CO., LTD. 3.8188518056149906e-25
Suzuki Motor Corporation 3.8188518056149906e-25
Lithium Energy Japan 3.8188518056149906e-25
Power Digital Delight Co., Ltd. 3.8188518056149906e-25
Easthill Industrial Co., Ltd. 3.8188518056149906e-25
LAAS-CNRE 3.8188518056149906e-25
Atmel Rousset S.A.S. 3.8188518056149906e-25
Kowa Company Ltd. 3.8188518056149906e-25
Techsign Light Panel Co., Ltd. 3.8188518056149906e-25
ECOLE NATIONALE SUPERIEURE DE TECHNIQUES AVANCEES 3.8188518056149906e-25
ECOLE POLYTECHNIQUE 3.8188518056149906e-25
Maytag Corporation 3.8188518056149906e-25
Satori S-Tech Co., Ltd. 3.8188518056149906e-25
Priestman Goode 3.8188518056149906e-25
Cambridge Design Partnership LLP 3.8188518056149906e-25
BYD Company Limited 3.8188518056149906e-25
SHENZHEN BYD AUTO R&D COMPANY LIMITED 3.8188518056149906e-25
Hayterzlab 3.8188518056149906e-25
Heiwa 3.8188518056149906e-25
Champion Elite Company Limited 3.8188518056149906e-25

Midas Wei Trading Co., Ltd. 3.8188518056149906e-25
Korea Research Institute of Standards and Science 3.8188518056149906e-25
Micro Motion Technology Co., Ltd. 3.8188518056149906e-25
S.T. Corporation 3.8188518056149906e-25
Montana State University 3.8188518056149906e-25
Plextronics, Inc. 3.8188518056149906e-25
Nano-C, Inc. 3.8188518056149906e-25
SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC 3.8188518056149906e-25
Futaba Corporation 3.8188518056149906e-25
OFFICE NATIONAL D'ETUDES ET DE RECHERCHES AEROSPATIALES (ONERA)
3.8188518056149906e-25
COMMISSARIAT ÁL'ÉNERGIE ATOMIQUE ET AUX ÉNERGIES ALTERNATIVES
3.8188518056149906e-25
Nitto Kogaku KK 3.8188518056149906e-25
Koike, Yashuhiro 3.8188518056149906e-25
Hitachi Industrial Equipment System Co. 3.8188518056149906e-25
Nippon Steel & Sumikin Stainless Steel Corporation 3.8188518056149906e-25
Board of Regents of the University of Oklahoma 3.8188518056149906e-25
Phononic Devices, Inc. 3.8188518056149906e-25
Daimler-Benz AG 3.8188518056149906e-25
Ford Motor Company 3.8188518056149906e-25
IMRA America, Inc. 3.8188518056149906e-25
The Regents of the University of Colorado, a body corporate
3.8188518056149906e-25
EchoStar Technologies, L.L.C. 3.8188518056149906e-25
DISH Network L.L.C. 3.8188518056149906e-25
KWANSEI GAKUIN EDUCATIONAL FOUNDATION 3.8188518056149906e-25
TOYO TANSO CO., LTD. 3.8188518056149906e-25
Furukawa Co., Ltd. 3.8188518056149906e-25
Tohoku Techno Arch Co., Ltd. 3.8188518056149906e-25
Baxter International Inc. 3.8188518056149906e-25
Baxter Healthcare S.A. 3.8188518056149906e-25
Nujira Limited 3.8188518056149906e-25
Skyworks Solutions, Inc. 3.8188518056149906e-25
Nantong Ya Tai Candle Arts & Crafts Co., Ltd. 3.8188518056149906e-25
Shanghai Q Mall & Co. Ltd. 3.8188518056149906e-25
Giant Electric Vehicle Kunshan Co., Ltd. 3.8188518056149906e-25
National Yunlin University of Science and Technology 3.8188518056149906e-25
CSP-Innovazione Nelle ICT Scarl 3.8188518056149906e-25
S.I.SV.EL. Societa', Italiana Per Lo Sviluppo Dell'elettronica S.P.A.
3.8188518056149906e-25
Legrand France 3.8188518056149906e-25
Legrand SNC 3.8188518056149906e-25
Dolby Laboratories Licensing Corporation 3.8188518056149906e-25
Dolby International AB 3.8188518056149906e-25
National Taipei University of Technology 3.8188518056149906e-25
Phansco Corp. 3.8188518056149906e-25
AT&T MOBILITY II LLC 3.8188518056149906e-25

AT&T INTELLECTUAL PROPERTY I, L.P. 3.8188518056149906e-25
Oxford Instruments, Ltd. 3.8188518056149906e-25
Oxford Instruments AFM, Inc 3.8188518056149906e-25
Fundació Institut de Ciències Fotòniques 3.8188518056149906e-25
Consejo Superior de Investigaciones Cientificas 3.8188518056149906e-25
X-Body Inc. 3.8188518056149906e-25
The Board of Trustees of the University of Illinois 3.8188518056149906e-25
Toyoda Gosei Co., Ltd. 3.8188518056149906e-25
Sumita Optical Glass, Inc. 3.8188518056149906e-25
Los Alamos National Security, LLC 3.8188518056149906e-25
Sharp Corporation 3.8188518056149906e-25
NCKU Research & Development Foundation 3.8188518056149906e-25
Himax Technologies Limited 3.8188518056149906e-25
Shinko Electric Industries Co., Ltd. 3.8188518056149906e-25
Taiyo Yuden Co., Ltd. 3.8188518056149906e-25
The George Washington University 3.8188518056149906e-25
The United States of America as represented by the Secretary of the Navy
3.8188518056149906e-25
Airbus Operations SAS 3.8188518056149906e-25
02Micro 3.8188518056149906e-25
Ricoh Company, Ltd. 3.8188518056149906e-25
Sijtechnology, Inc. 3.8188518056149906e-25
Moxtek, Inc. 3.8188518056149906e-25
Brigham Young University 3.8188518056149906e-25
Shenzhen Jiawei Photovoltaic Lighting Co., Ltd. 3.8188518056149906e-25
Light-Core Limited 3.8188518056149906e-25
Corning Incorporated 3.8188518056149906e-25
S.O.I. Tec Silicon On Insulator Technologies 3.8188518056149906e-25
SIEMENS ENERGY, INC. 3.8188518056149906e-25
Arkansas Power Electronics International, Inc. 3.8188518056149906e-25
The Chinese University of Hong Kong 3.8188518056149906e-25
CITY UNIVERSITY OF HONG KONG 3.8188518056149906e-25
Regents of the University of Minnesota 3.8188518056149906e-25
Life Services, LLC 3.8188518056149906e-25
FIAT POWERTRAIN TECHNOLOGIES S.P.A. 3.8188518056149906e-25
FPT INDUSTRIAL S.P.A. 3.8188518056149906e-25
Murata Machinery, Ltd. 3.8188518056149906e-25
The Doshisha 3.8188518056149906e-25
JNC Petrochemical Corporation 3.8188518056149906e-25
JNC Corporation 3.8188518056149906e-25
People & Give Co., Ltd. 3.8188518056149906e-25
Global and Creative Partnership 3.8188518056149906e-25
Universal Scientific Industrial Co., Ltd. 3.8188518056149906e-25
Universal Global Scientific Industrial Co., Ltd. 3.8188518056149906e-25
Gaslow International Limited 3.8188518056149906e-25
Dong Guan Apsun Lighting Technology Co., Ltd 3.8188518056149906e-25
LG INNOTEK CO., LTD. 3.8188518056149906e-25
LG Electronics Inc. 3.8188518056149906e-25

National Applied Research Laboratories 3.8188518056149906e-25
 MFC Sealing Technology Co., Ltd. 3.8188518056149906e-25
 Molex Japan Co., Ltd. 3.8188518056149906e-25
 Advantest Corporation 3.8188518056149906e-25
 VisEra Technologies Company Limited 3.8188518056149906e-25
 OmniVision Technologies, Inc. 3.8188518056149906e-25
 Dow Corning Corporation 3.8188518056149906e-25
 Dow Corning Toray Co., Ltd. 3.8188518056149906e-25
 Nippon Telegraph and Telephone Corporation 3.8188518056149906e-25
 NTT Electronics Corporation 3.8188518056149906e-25
 Gigaphoton Inc. 3.8188518056149906e-25
 Komatsu Ltd. 3.8188518056149906e-25
 Savannah River Nuclear Solutions, LLC 3.8188518056149906e-25
 Fisk University 3.8188518056149906e-25
 Rockwell Automation Technologies, Inc. 3.8188518056149906e-25
 Rockwell Automation Safely AG 3.8188518056149906e-25
 Public Interest Incorporated Foundations Association for the Development of
 Earthquake Prediction 3.8188518056149906e-25
 Techno Sugaya Co., Ltd. 3.8188518056149906e-25
 UNIVERSITE DE LIEGE 3.8188518056149906e-25
 Cockerill Maintenance & Ingénierie S.A. 3.8188518056149906e-25
 The University of Maryland 3.8188518056149906e-25
 Calabatas Creek Research, Inc. 3.8188518056149906e-25
 United Microelectronic Corp. 3.8188518056149906e-25
 Lam Research Corporation 3.8188518056149906e-25
 Jang Soon Park 3.8188518056149906e-25
 Baiksan OPC Co., Ltd. 3.8188518056149906e-25
 Casio Computer Co., Ltd. 3.8188518056149906e-25
 CASIO ELECTRONICS MANUFACTURING CO., LTD. 3.8188518056149906e-25
 Regal Beloit America, Inc. 3.8188518056149906e-25
 Regal Beloit Australia Pty Ltd 3.8188518056149906e-25
 E-NETPIC.COM, Inc. 3.8188518056149906e-25
 Epic Communications, Inc. 3.8188518056149906e-25
 Battlefield Telecommunications Systems, LLC 3.8188518056149906e-25
 Purdue Research Foundation 3.8188518056149906e-25
 North American Lighting, Inc. 3.8188518056149906e-25
 Toyota Motor Engineering & Manufacturing North America, Inc.
 3.8188518056149906e-25
 University of Central Florida Research Foundation, Inc. 3.8188518056149906e-25
 sdPhotonics, LLC 3.8188518056149906e-25
 Airbus Operations GmbH 3.8188518056149906e-25
 GOODRICH LIGHTING SYSTEMS GMBH 3.8188518056149906e-25
 Hilti Aktiengesellschaft 3.8188518056149906e-25
 ESW GmbH 3.8188518056149906e-25
 Bruker HTS GmbH 3.8188518056149906e-25
 Oswald Elektromotoren GmbH 3.8188518056149906e-25
 Chung-Hsin Electric & Machinery Mfg. Corp. 3.8188518056149906e-25
 Wuhan Haixinneng Electric Limited Company 3.8188518056149906e-25

Albert-Ludwigs Universitat Freiburg 3.8188518056149906e-25
 Micronas GmbH 3.8188518056149906e-25
 Centre Luxembourgeois de Recherches pour le Verre et la Ceramique S.A.
 (C.R.V.C.) 3.8188518056149906e-25
 Guardian Industries Corp. 3.8188518056149906e-25
 Tyco Electronics Belgium EC BVBA 3.8188518056149906e-25
 TE Connectivity Nederland B.V. 3.8188518056149906e-25
 U-Shin Ltd. 3.8188518056149906e-25
 Mazda Motor Corporation 3.8188518056149906e-25
 West Corporation 3.8188518056149906e-25
 Dongguan Masstop Liquid Crystal Display Co., Ltd. 3.8188518056149906e-25
 Synopsys, Inc. 3.8188518056149906e-25
 Synopsys Taiwan Co., Ltd. 3.8188518056149906e-25
 CDT OXFORD LIMITED 3.8188518056149906e-25
 CAMBRIDGE DISPLAY TECHNOLOGY LIMITED 3.8188518056149906e-25
 Mitsubishi Jidosha Kogyo Kabushiki Kaisha 3.8188518056149906e-25
 Mitsubishi Jidosha Engineering Kabushiki Kaisha 3.8188518056149906e-25
 Toyota Boshoku Kabushiki Kaisha 3.8188518056149906e-25
 Toyota Shatai Kabushiki Kaisha 3.8188518056149906e-25
 Peking University Founder Group Co., Ltd. 3.8188518056149906e-25
 Founder Microelectronics International Co., Ltd. 3.8188518056149906e-25
 Texas Instruments Deutschland GmbH 3.8188518056149906e-25
 Texas Instruments Incorporated 3.8188518056149906e-25
 American Air Liquide, Inc. 3.8188518056149906e-25
 L'Air Liquide Société Anonyme Pour L'Étude Et L'Exploitation Des Procédés
 Georges Clause 3.8188518056149906e-25
 Fu An Industrial Co., Ltd. 3.8188518056149906e-25
 Get Auto Accessories Co., Ltd. 3.8188518056149906e-25
 UNIVERSITY OF NEBRASKA BOARD OF REGENTS 3.8188518056149906e-25
 J.A. Woollam Co. Inc. 3.8188518056149906e-25
 Topmore Technology Inc. 3.8188518056149906e-25
 Aptos Technology Inc. 3.8188518056149906e-25

```

[26]: # betweenness centrality
best_connector = nx.betweenness_centrality(us_graph)
for w in sorted(best_connector, key=best_connector.get, reverse=True):
    print(w, best_connector[w])
  
```

Samsung Electronics Co., Ltd. 0.09045562104861295
 IMEC 0.05288860585356546
 International Business Machines Corporation 0.04846897636655047
 Panasonic Corporation 0.04114988036820923
 Toyota Jidosha Kabushiki Kaisha 0.03232065927483717
 Sony Corporation 0.01850524438125521
 Denso Corporation 0.017879933782898746
 STMICROELECTRONICS S.R.L. 0.01649174425454749
 The Regents of the University of California 0.01621463292622325
 Honda Motor Co., Ltd. 0.016060938163364007

The Board of Trustees of the Leland Stanford Junior University
 0.015055504543375155
 Sumitomo Electric Industries, Ltd. 0.014384776648927617
 Kabushiki Kaisha Toshiba 0.011540271648088367
 Fuji Electric Co., Ltd. 0.011184009162445828
 Industry-Academic Cooperation Foundation, Yonsei University 0.010130031693374012
 National University Corporation Nagoya University 0.009936679074145383
 Rohm Co., Ltd. 0.009703010376864826
 Seoul National University Industry Foundation 0.00837768101919044
 King Abdulaziz City for Science and Technology 0.007948026815951345
 Hyundai Motor Company 0.006908859334735346
 KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS 0.006866897702477218
 Korea Advanced Institute of Science & Technology 0.006842214389384201
 COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES
 0.006014500623665043
 Electronics and Telecommunications Research Institute 0.005775895263765884
 Renesas Electronics Corporation 0.005775895263765884
 Centre National de la Recherche Scientifique (CNRS) 0.005770958601147281
 Japan Science and Technology Agency 0.00566482035484731
 National Institute of Advanced Industrial Science and Technology
 0.005417164446814044
 GLOBALFOUNDRIES Inc. 0.005308557869204769
 Intermolecular, Inc. 0.005070775286408708
 Massachusetts Institute of Technology 0.004630589536249914
 Seiko Epson Corporation 0.004010215600512098
 The University of Tokyo 0.003724711945736206
 OLYMPUS CORPORATION 0.0037148386204989975
 SNU R&DB FOUNDATION 0.003475410483496737
 STMICROELECTRONICS ASIA PACIFIC PTE. LTD. 0.0034655371582595304
 Sharp Kabushiki Kaisha 0.003432790629556128
 Murata Manufacturing Co., Ltd. 0.002670734476664396
 Samsung Display Co., Ltd. 0.0026608611514271894
 Tohoku University 0.002606557862622552
 Advanced Micro Devices, Inc. 0.0023251680933621638
 Georgia Tech Research Corp. 0.0023251680933621638
 Osaka University 0.0023251680933621638
 Panasonic Liquid Crystal Display Co., Ltd. 0.0023251680933621638
 The Furukawa Electric Co., Ltd. 0.0023202314307435605
 Elpida Memory, Inc. 0.0023202314307435605
 Cambridge Enterprise Limited 0.0023202314307435605
 Nanyang Technological University 0.0023202314307435605
 AISIN SEIKI KABUSHIKI KAISHA 0.0018487801506669435
 FREESCALE SEMICONDUCTOR, INC. 0.0018199829520584247
 Sumitomo Metal Mining Co., Ltd. 0.0017781858752209119
 Kabushiki Kaisha Toyota Jidoshokki 0.0012596717448469473
 Hino Motors, Ltd. 0.0011650523779903835
 Fuji Electric FA Components & Systems Co., Ltd. 0.0011650523779903835
 FURUKAWA AUTOMOTIVE SYSTEMS INC. 0.0011650523779903835

Taiwan Semiconductor Manufacturing Company, Ltd. 0.0011650523779903835
 Hynix Semiconductor Inc. 0.0011650523779903835
 WASEDA UNIVERSITY 0.0011650523779903835
 KATHOLIEKE UNIVERSITEIT LEUVEN 0.0011650523779903835
 Kyocera Corporation 0.0011650523779903835
 Universal Display Corporation 0.0011650523779903835
 SAE Magnetics (H.K.) Ltd. 0.0011650523779903835
 STMicroelectronics (Grenoble 2) SAS 0.0011650523779903835
 Universiteit Gent 0.0011650523779903835
 ASML Netherlands B.V. 0.0011650523779903835
 TDK Corporation 0.0011650523779903835
 STMICROELECTRONICS (CROLLES 2) SAS 0.0011650523779903835
 Plastic Logic Limited 0.0011650523779903835
 Kobe Steel, Limited 0.0011650523779903835
 Tokyo Electron Limited 0.0011650523779903835
 The Hong Kong University of Science and Technology 0.0011650523779903835
 GLOBALFOUNDRIES Singapore Pte. Ltd. 0.0011650523779903835
 Asmo Co., Ltd. 0.0011650523779903835
 Kia Motors Corporation 0.0011329640709694618
 Showa Denko K.K. 0.0008326504283377602
 Tanaka Kikinzoku Kogyo K.K. 0.0004434768585711982
 Kyoto University 0.00028138976926038917
 Tyco Electronics Corporation 0.00011847990284647968
 Hon Hai Precision Industry Co., Ltd. 9.379658975346307e-05
 Tyco Electronics Japan G.K. 6.417661404184316e-05
 BOE TECHNOLOGY GROUP CO., LTD. 4.9366626186033196e-05
 Siemens Aktiengesellschaft 3.949330094882656e-05
 Tyco Electronics Raychem GmbH 3.455663833022324e-05
 Tsinghua University 2.961997571161992e-05
 Sanyo Electric Co., Ltd. 2.961997571161992e-05
 University of Tennessee Research Foundation 2.961997571161992e-05
 Hong Fu Jin Precision Industry (ShenZhen) Co., Ltd. 2.961997571161992e-05
 YALE UNIVERSITY 1.974665047441328e-05
 Siemens Medical Solutions USA, Inc. 1.974665047441328e-05
 Hitachi, Ltd. 1.480998785580996e-05
 National Chiao Tung University 1.480998785580996e-05
 Canon Kabushiki Kaisha 9.87332523720664e-06
 Max-Planck-Gesellschaft zur Foerderung der Wissenschaften E.V.
 9.87332523720664e-06
 Carl Zeiss Microscopy GmbH 9.87332523720664e-06
 NEC Access Technica, Ltd. 9.87332523720664e-06
 NEC Corporation 9.87332523720664e-06
 Intel Corporation 4.93666261860332e-06
 Shenzhen Futaihong Precision Industry Co., Ltd. 4.93666261860332e-06
 Northeastern University 4.93666261860332e-06
 Cal-Comp Electronics & Communications Company Limited 4.93666261860332e-06
 Philips Lumileds Lighting Company, LLC 4.93666261860332e-06
 AAC Acoustic Technologies (Shenzhen) Co., Ltd. 4.93666261860332e-06

Japan Aviation Electronics Industry, Ltd. 4.93666261860332e-06
 Robert Bosch GmbH 4.93666261860332e-06
 California Institute of Technology 4.93666261860332e-06
 Adesto Technologies Corporation 4.93666261860332e-06
 Fujitsu Limited 4.93666261860332e-06
 Foxconn Technology Co., Ltd. 4.93666261860332e-06
 Tohoku Pioneer Corporation 4.93666261860332e-06
 NthDegree Technologies Worldwide Inc. 4.93666261860332e-06
 Bruker BioSpin GmbH 4.93666261860332e-06
 The Trustees of Princeton University 4.93666261860332e-06
 Ford Global Technologies, LLC 4.93666261860332e-06
 Inventec Appliances Corp. 4.93666261860332e-06
 Innocom Technology (Shenzhen) Co., Ltd. 4.93666261860332e-06
 Shin-Etsu Chemical Co., Ltd. 4.93666261860332e-06
 Lite-On Technology Corp. 4.93666261860332e-06
 HITACHI KOKUSAI ELECTRIC INC. 0.0
 L'Air Liquid, Societe Anonyme pour l'Etude et l'Exploitation des Procedes
 Georges Claude 0.0
 Hyundai Motor Japan R&D Center 0.0
 STMicroelectronics (Mala) Ltd 0.0
 ACER INCORPORATED 0.0
 LIANHONG TECHNOLOGY CO., LTD 0.0
 Nihon Ceratec Co., Ltd. 0.0
 Taiheiyo Cement Corporation 0.0
 CANON PRECISION, INC. 0.0
 University of Seoul Industry Cooperation Foundation 0.0
 MATERIALS ANALYSIS TECHNOLOGY INC. 0.0
 National Health Research Institutes 0.0
 Chandler Systems, Inc. 0.0
 GENITECH, INC. 0.0
 Korea Electric Power Corporation 0.0
 SOONGSIL UNIVERSITY-INDUSTRY COOPERATION FOUNDATION 0.0
 Dynalloy, Inc 0.0
 GM Global Technology Operations, Inc. 0.0
 HEFEI BOE OPTOELECTRONICS TECHNOLOGY CO., LTD. 0.0
 Cummins PowerGen IP, Inc. 0.0
 CUMMINS CAL PACIFIC, LLC 0.0
 XJ Group Corporation 0.0
 State Grid Corporation of China 0.0
 BEIJING BOE DISPLAY TECHNOLOGY CO., LTD. 0.0
 Spansion LLC 0.0
 Koito Manufacturing Co., Ltd. 0.0
 Volex PLC 0.0
 Applied Micro Circuits Corporation 0.0
 Advins, Inc. 0.0
 Scientific Analysis Instruments, Ltd. 0.0
 Funai Electric Advanced Applied Technology Research Institute Inc. 0.0
 Chichibu Fuji Co., Ltd. 0.0

KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO 0.0
 FURUKAWA MAGNET WIRE CO., LTD. 0.0
 Nuctech Company Limited 0.0
 Sôny Electronics Inc. 0.0
 Toshiba Industrial Products Manufacturing Corporation 0.0
 Phillips Screw Company 0.0
 Sila Nanotechnologies Inc. 0.0
 Olympus Imaging Corp. 0.0
 Olympus Medical Systems Corp. 0.0
 Schlumberger Technology Corporation 0.0
 Toshiba Global Commerce 0.0
 Solutions Holdings Corporation 0.0
 Asahi Kasei Microdevices Corporation 0.0
 Varian Medical Systems, Inc. 0.0
 Sloan-Kettering Institute for Cancer Research 0.0
 Tokyo Electric Power Company, Incorporated 0.0
 Ishikawajima-Harima Heavy Industries Co., Ltd. 0.0
 University of California 0.0
 GSI 0.0
 Lawrence Livermore National Security, LLC. 0.0
 TE Connectivity India Private Limited 0.0
 FIH (Hong Kong) Limited 0.0
 Sungkyunkwan University Foundation for Corporate Collaboration 0.0
 Dongguk University Industry-Academic Cooperation Foundation 0.0
 Korea University of Technology and Education Industry-University Cooperation
 Foundation 0.0
 Postech Academy-Industry Foundation Postech Univ. of Science and Technology 0.0
 Industry-University Cooperation Foundation Hanyang University 0.0
 INDUSTRY FOUNDATION OF CHONNAM NATIONAL UNIVERSITY 0.0
 Cheil Industries Inc. 0.0
 Industry-Academic Cooperation Foundation 0.0
 INDUSTRY-ACADEMY COOPERATION CORPS OF SUNCHON NATIONAL UNIVERSITY 0.0
 NANO HOLDINGS LLC 0.0
 University of Florida Research Foundation, Inc. 0.0
 Suzhou Golden Crown New Energy Co., Ltd 0.0
 Golden Crown New Energy (HK) Limited 0.0
 Ulvac, Inc. 0.0
 Societe Francaise de Detecteurs Infrarouges - SOFRADIR 0.0
 Universite Montpellier 2 Sciences et Techniques 0.0
 UNIVERSITE CLAUDE BERNARD LYON I 0.0
 France/Ecole Normale Supérieure de Cachan 0.0
 France and Universitat de les Illes Balears 0.0
 Toshiba Medical Systems Corporation 0.0
 Grandis, Inc. 0.0
 Hitachi Mito Engineering Co., Ltd. 0.0
 Chi Mei Communication Systems, Inc. 0.0
 NEC Tokin Corporation 0.0
 Postech Foundation 0.0

Seoul Opto Device Co., Ltd. 0.0
 TS Tech Co., Ltd. 0.0
 King Abdulaziz City Science and Technology 0.0
 Tyco Electronics Holdings (Bermuda) No. 7 Ltd. 0.0
 Xiangtan Electric Manufacturing Co., Ltd. 0.0
 Xiangtan Liyuan Electric Tooling Co., Ltd. 0.0
 UD Trucks Corporation 0.0
 Tokyo Institute of Technology 0.0
 University of Massachusetts 0.0
 Shinshu University 0.0
 Autonetworks Technologies, Ltd. 0.0
 Aisin AW Co., Ltd. 0.0
 Sumitomo Wiring Systems, Ltd. 0.0
 Vanderbilt University 0.0
 Molecular Sensing, Inc. 0.0
 Neomax Materials Co., Ltd. 0.0
 Hitachi Metals, Ltd. 0.0
 SK Telecom Co., Ltd. 0.0
 Kyungpook National University Industry Academic Cooperation Foundation 0.0
 Mersen USA Newburyport-MA, LLC 0.0
 Cal-Comp Precision (Singapore) Limited 0.0
 CITIZEN HOLDINGS CO., LTD. 0.0
 Citizen Electronics Co., Ltd. 0.0
 Institut Ploytechnique de Grenoble 0.0
 Curators of the University of Missouri 0.0
 Integral Laser Solutions, Inc. 0.0
 Silergy Semiconductor Technology (Hangzhou) LTD 0.0
 Silergy Technology 0.0
 KBC RESEARCH FOUNDATION PVT. LTD. 0.0
 SunEdison Semiconductor Limited (UEN201334164H) 0.0
 GLOBAL FOUNDRIES INC. 0.0
 Sony Computer Entertainment Inc. 0.0
 Lextar Electronics Corp. 0.0
 Lextar Electronics Corporation 0.0
 H-Tech, LLC 0.0
 SRI Hermatics Inc. 0.0
 American Power Conversion Corporation 0.0
 Hydrogenics Corporation 0.0
 Sanken Electric Co., Ltd. 0.0
 Nissan Motor Co., Ltd. 0.0
 Alpine Electronics, Inc. 0.0
 Blueprint Acoustics Pty Ltd. 0.0
 JC Protek Co., Ltd. 0.0
 Andong National University Industry Academic Cooperation Foundation 0.0
 UT-Battelle, LLC 0.0
 The Regents of the University of Colorado 0.0
 National Institute of Standards and Technology 0.0
 Shimadzu Corporation 0.0

Shimadzu Research Laboratory (Shanghai) Co. Ltd. 0.0
 FCI Americas Technology, Inc. 0.0
 FCI 0.0
 Askey Computer Corp. 0.0
 Askey Technology (Jiangsu) Ltd. 0.0
 SCK.-CEN 0.0
 Toppan Printing Co., Ltd. 0.0
 Advantest Corp. 0.0
 FSP-Powerland Technology Inc. 0.0
 FSP TECHNOLOGY INC. 0.0
 SanDisk 3D LLC 0.0
 Elpidia Memory, Inc. 0.0
 Beth Israel Deaconess Medical Center, Inc. 0.0
 The Charles Stark Draper Laboratory, Inc. 0.0
 The President and Fellows of Harvard College 0.0
 Raytheon Company 0.0
 Koninklijke Philips Electronics N.V. 0.0
 KONINKLIJKE PHILIPS N.V. 0.0
 Sanyo Technology Center (Shenzhen) Co., Ltd. 0.0
 Kirk Key Interlock Company LLC 0.0
 Utility Relay Company 0.0
 Eastfield Corporation 0.0
 Peak Power & Mfg., Inc. 0.0
 Volkswagon AG 0.0
 iHi CHARGING SYSTEMS INTERNATIONAL GMBH 0.0
 Mahle International GmbH 0.0
 Fuji Jukogyo Kabushiki Kaisha 0.0
 Nippon Chemical Industrial Co., Ltd. 0.0
 X-FAB SEMICONDUCTOR FOUNDRIES AG 0.0
 MELEXIS TECHNOLOGIES NV 0.0
 Spicer Technology, Inc. 0.0
 Bubble Technologies Industries Inc. 0.0
 American Audio Components Inc. 0.0
 MEDTRONIC, INC. 0.0
 Oncotech, Inc. 0.0
 Jae Taiwan, Ltd. 0.0
 J & S Electronics, Inc. 0.0
 Princeton University Office of Technology and Trademark Licensing 0.0
 Tatung University 0.0
 Tatung Company 0.0
 Headway Technologies, Inc. 0.0
 Board of Regents, University of Texas System 0.0
 Texas Micro, Inc. 0.0
 Konkuk University Industrial Cooperation Corp. 0.0
 Tel Solar AG 0.0
 Korea University Research and Business Foundation 0.0
 SK Hynic Inc. 0.0
 IHI AEROSPACE CO., LTD. 0.0

SINFONIA TECHNOLOGY CO., LTD. 0.0
 Dainippon Screen Mfg. Co., Ltd. 0.0
 Hamamatsu Photonics K.K. 0.0
 Keihin Corporation 0.0
 Samsung SDI Co., Ltd. 0.0
 STMicroelectronics (Research & Development) Limited 0.0
 Telaris Inc. 0.0
 Suzuki Motor Corporation 0.0
 Lithium Energy Japan 0.0
 Adesto Technologies France SARL 0.0
 Altis Semiconductor 0.0
 Fujitsu Component Limited 0.0
 Fujitsu Semiconductor Limited 0.0
 Power Digital Delight Co., Ltd. 0.0
 Easthill Industrial Co., Ltd. 0.0
 Conti Temic microelectronic GmbH 0.0
 Sumitomo Electric Toyama Co., Ltd. 0.0
 Sumitomo Electric Device Innovations, Inc. 0.0
 National University Corporation Toyohashi University of Technology 0.0
 Sumitomo Electric Sintered Alloy, Ltd. 0.0
 NATIONAL UNIVERSITY CORPORATION NARA INSTITUTE OF SCIENCE AND TECHNOLOGY 0.0
 Central Research Institute of Electric Power Industry 0.0
 Sumitomo Chemical Company, Limited 0.0
 LAAS-CNRE 0.0
 Atmel Rousset S.A.S. 0.0
 FURUI PRECISE COMPONENT (KUNSHAN) CO., LTD. 0.0
 Kokichi Terajima 0.0
 Xinhongzhou Precision Technology Co., Ltd 0.0
 Micro Win Tech Inc. 0.0
 LARGAN PRECISION CO., LTD. 0.0
 Katholieke Universiteit Leuven, K.U. Leuven R&D 0.0
 Kowa Company Ltd. 0.0
 Techsign Light Panel Co., Ltd. 0.0
 ECOLE NATIONALE SUPERIEURE DE TECHNIQUES AVANCEES 0.0
 ECOLE POLYTECHNIQUE 0.0
 Maytag Corporation 0.0
 Satori S-Tech Co., Ltd. 0.0
 Priestman Goode 0.0
 Cambridge Design Partnership LLP 0.0
 Siemens Industry, Inc. 0.0
 Caterpillar Global Mining LLC 0.0
 Massachusetts General Hospital 0.0
 Mitsubishi Electric Corporation 0.0
 Pioneer Corporation 0.0
 Applied Materials, Inc. 0.0
 Hitachi Tohbu Semiconductor Ltd. 0.0
 ITT Corporation 0.0
 Hitachi Device Engineering Co., Ltd. 0.0

Hitachi ULSI Systems Co., Ltd. 0.0
 Hitachi Yonezawa Electronics Co., Ltd. 0.0
 IMEC VZW 0.0
 TDK Korea Corporation 0.0
 BYD Company Limited 0.0
 SHENZHEN BYD AUTO R&D COMPANY LIMITED 0.0
 Sony Mobile Communications Inc. 0.0
 SONY PICTURES TECHNOLOGIES INC. 0.0
 LG Hausys, Ltd. 0.0
 Korea Institute of Science & Technology 0.0
 HYUNDAI MOBIS CO., LTD. 0.0
 SL Lighting Corporation 0.0
 Il Heung Co., Ltd. 0.0
 Myunghwa Ind. Co. Ltd. 0.0
 Hayterzlab 0.0
 Heiwa 0.0
 Champion Elite Company Limited 0.0
 Midas Wei Trading Co., Ltd. 0.0
 Korea Research Institute of Standards and Science 0.0
 Micro Motion Technology Co., Ltd. 0.0
 S.T. Corporation 0.0
 Montana State University 0.0
 Nihon Colmo Co., Ltd. 0.0
 Plextronics, Inc. 0.0
 Nano-C, Inc. 0.0
 The Furukawa Electric Company, Ltd. 0.0
 SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC 0.0
 Futaba Corporation 0.0
 OFFICE NATIONAL D'ETUDES ET DE RECHERCHES AEROSPATIALES (ONERA) 0.0
 COMMISSARIAT À L'ÉNERGIE ATOMIQUE ET AUX ÉNERGIES ALTERNATIVES 0.0
 Nitto Kogaku KK 0.0
 Koike, Yashuhiro 0.0
 Tyco Electronics AMP Espana SA 0.0
 CHAMP TECH OPTICAL (FOSHAN) CORPORATION 0.0
 Hitachi Industrial Equipment System Co. 0.0
 Nippon Steel & Sumikin Stainless Steel Corporation 0.0
 NASA, an agency of the United States 0.0
 NASA 0.0
 Board of Regents of the University of Oklahoma 0.0
 Phononic Devices, Inc. 0.0
 Daimler-Benz AG 0.0
 Ford Motor Company 0.0
 IMRA America, Inc. 0.0
 The Regents of the University of Colorado, a body corporate 0.0
 EchoStar Technologies, L.L.C. 0.0
 DISH Network L.L.C. 0.0
 KWANSEI GAKUIN EDUCATIONAL FOUNDATION 0.0
 TOYO TANSO CO., LTD. 0.0

Deutsches Krebsforschungszentrum 0.0
 Saga Sanyo Industries Co., Ltd. 0.0
 Mitsubishi Metal Corporation 0.0
 Furukawa Co., Ltd. 0.0
 Tohoku Techno Arch Co., Ltd. 0.0
 Fu Tai Industry (Shenzhen) Co., Ltd. 0.0
 Ecole Polytechnique Federale de Lausanne (EPFL) 0.0
 Baxter International Inc. 0.0
 Baxter Healthcare S.A. 0.0
 Nujira Limited 0.0
 Skyworks Solutions, Inc. 0.0
 Nantong Ya Tai Candle Arts & Crafts Co., Ltd. 0.0
 Shanghai Q Mall & Co. Ltd. 0.0
 TECHNOVA INC. 0.0
 Toshiba Lightning & Technology Corporation 0.0
 Giant Electric Vehicle Kunshan Co., Ltd. 0.0
 National Yunlin University of Science and Technology 0.0
 Tadahiro Ohmi 0.0
 TOSHIBA TEC KABUSHIKI KAISHA 0.0
 TOSHIBA MATERIALS CO., LTD. 0.0
 Toshiba Electron Tubes & Devices Co., Ltd. 0.0
 Toshiba Lighting & Technology Corporation 0.0
 Battelle Memorial Institute 0.0
 Semiconductor Technology Academic Research Center 0.0
 Foundation for Advancement of International Science 0.0
 CSP-Innovazione Nelle ICT Scarl 0.0
 S.I.SV.EL. Societa', Italiana Per Lo Sviluppo Dell'elettronica S.P.A. 0.0
 Legrand France 0.0
 Legrand SNC 0.0
 Dolby Laboratories Licensing Corporation 0.0
 Dolby International AB 0.0
 National Taipei University of Technology 0.0
 Phansco Corp. 0.0
 Hitachi High-Technologies Corporation 0.0
 Shin-Kobe Electric Machinery Co., Ltd. 0.0
 AT&T MOBILITY II LLC 0.0
 AT&T INTELLECTUAL PROPERTY I, L.P. 0.0
 Oxford Instruments, Ltd. 0.0
 Oxford Instruments AFM, Inc 0.0
 STMicroelectronics Limited 0.0
 Fundació Institut de Ciències Fotòniques 0.0
 Consejo Superior de Investigaciones Cientificas 0.0
 X-Body Inc. 0.0
 The Board of Trustees of the University of Illinois 0.0
 Global Unichip Corp. 0.0
 KINPO ELECTRONICS, INC. 0.0
 NEC Engineering, Ltd. 0.0
 Toshiba America Electronic Components, Inc. 0.0

Toyoda Gosei Co., Ltd. 0.0
 Sumita Optical Glass, Inc. 0.0
 ATI Technologies, Inc. 0.0
 Universite Joseph Fourier 0.0
 ISORG 0.0
 Centre Nationale de la Recherche Scientifique (CNRS) 0.0
 CNRS-Centre National de la Recherche Scientifique 0.0
 Colonial Plastics, Inc. 0.0
 Dow Global Technologies Inc. 0.0
 Los Alamos National Security, LLC 0.0
 Sharp Corporation 0.0
 NCKU Research & Development Foundation 0.0
 Himax Technologies Limited 0.0
 Hong Fu Precision Industry (ShenZhen) Co., Ltd. 0.0
 Fu Tai Hua Industry (Shenzhen) Co., Ltd. 0.0
 Ledlink Optics (Dong Guan) Co. Ltd. 0.0
 Yang Zhou LedLink Optics Co., Ltd. 0.0
 LedLink Optics, Inc. 0.0
 SEMICONDUCTOR ENERGY LABORATORY CO., LTD. 0.0
 Shinko Electric Industries Co., Ltd. 0.0
 Taiyo Yuden Co., Ltd. 0.0
 Tris Inc. 0.0
 The George Washington University 0.0
 The United States of America as represented by the Secretary of the Navy 0.0
 Korean Broadcasting System 0.0
 Dongwon Systems Corporation 0.0
 Soongsil University Foundation of University-Industry Cooperation 0.0
 Airbus Operations SAS 0.0
 02Micro 0.0
 Ricoh Company, Ltd. 0.0
 Sijtechnology, Inc. 0.0
 Moxtek, Inc. 0.0
 Brigham Young University 0.0
 Kansai University 0.0
 MITSUBISHI HEAVY INDUSTRIES, LTD. 0.0
 Finewell Co., Ltd. 0.0
 Shenzhen Jiawei Photovoltaic Lighting Co., Ltd. 0.0
 Light-Core Limited 0.0
 Q1 Nanosystems, Inc 0.0
 Corning Incorporated 0.0
 S.O.I. Tec Silicon On Insulator Technologies 0.0
 CHENGDU BOE OPTOELECTRONICS TECHNOLOGY CO., LTD. 0.0
 SIEMENS ENERGY, INC. 0.0
 Arkansas Power Electronics International, Inc. 0.0
 The Chinese University of Hong Kong 0.0
 CITY UNIVERSITY OF HONG KONG 0.0
 STMicroeletronics, Inc. 0.0
 Inventec Appliances (Shanghai) Co., Ltd. 0.0

Leibniz-Institut fur Polymerforschung Dresden e.V. 0.0
 Samsung Techwin Co., Ltd. 0.0
 Sumitomo Rubber Industries, Ltd. 0.0
 Tyco Electronics Singapore PTE Ltd. 0.0
 Cornell University 0.0
 Kobelco Construction Machinery Co., Ltd. 0.0
 Regents of the University of Minnesota 0.0
 Life Services, LLC 0.0
 FIAT POWERTRAIN TECHNOLOGIES S.P.A. 0.0
 FPT INDUSTRIAL S.P.A. 0.0
 INNOLUX CORPORATION 0.0
 Murata Machinery, Ltd. 0.0
 The Doshisha 0.0
 JNC Petrochemical Corporation 0.0
 JNC Corporation 0.0
 SK hynix Inc. 0.0
 BAY ZU PRECISION CO., LTD. 0.0
 People & Give Co., Ltd. 0.0
 Global and Creative Partnership 0.0
 Universal Scientific Industrial Co., Ltd. 0.0
 Universal Global Scientific Industrial Co., Ltd. 0.0
 Qiuye Sun 0.0
 Gaslow International Limited 0.0
 Dong Guan Apsun Lighting Technology Co., Ltd 0.0
 LG INNOTEK CO., LTD. 0.0
 LG Electronics Inc. 0.0
 Sumitomo Bakelite Co. Ltd. 0.0
 Dacom Corporation 0.0
 MACRONIX INTERNATIONAL CO., LTD. 0.0
 National Applied Research Laboratories 0.0
 MFC Sealing Technology Co., Ltd. 0.0
 Industrial Technology Research Institute 0.0
 Hon Hai Precsion Industry Co., Ltd. 0.0
 Yutaka Giken Co., Ltd. 0.0
 AAC Technologies Holdings Inc. 0.0
 Afton Chemical Corporation 0.0
 Molex Japan Co., Ltd. 0.0
 Advantest Corporation 0.0
 Matheson Tri-Gas 0.0
 VisEra Technologies Company Limited 0.0
 OmniVision Technologies, Inc. 0.0
 Dow Corning Corporation 0.0
 Dow Corning Toray Co., Ltd. 0.0
 Tocalo Co., Ltd. 0.0
 Nippon Telegraph and Telephone Corporation 0.0
 NTT Electronics Corporation 0.0
 VORBECK MATERIALS CORPORATION 0.0
 University of Macau 0.0

Gigaphoton Inc. 0.0
 Komatsu Ltd. 0.0
 Savannah River Nuclear Solutions, LLC 0.0
 Fisk University 0.0
 Inventec Appliances (Pudong) Corporation 0.0
 Fujikin Incorporated 0.0
 Rockwell Automation Technologies, Inc. 0.0
 Rockwell Automation Safely AG 0.0
 Public Interest Incorporated Foundations Association for the Development of
 Earthquake Prediction 0.0
 Techno Sugaya Co., Ltd. 0.0
 UNIVERSITE DE LIEGE 0.0
 Cockerill Maintenance & Ingénierie S.A. 0.0
 The University of Maryland 0.0
 Calabatas Creek Research, Inc. 0.0
 University of Utah Research Foundation 0.0
 NEC Energy Devices, Ltd. 0.0
 United Microelectronic Corp. 0.0
 Lam Research Corporation 0.0
 Jang Soon Park 0.0
 Baiksang OPC Co., Ltd. 0.0
 Yoshitaka Sugawara 0.0
 Seiko NPC Corporation 0.0
 Casio Computer Co., Ltd. 0.0
 CASIO ELECTRONICS MANUFACTURING CO., LTD. 0.0
 Regal Beloit America, Inc. 0.0
 Regal Beloit Australia Pty Ltd 0.0
 Samsund SDI Co., Ltd. 0.0
 National University of Singapore 0.0
 Matsugaki Chemical Industries Co., Ltd. 0.0
 Silitek Electronic (Guangzhou) Co., Ltd. 0.0
 LITE-ON ELECTRONICS (GUANGZHOU) LIMITED 0.0
 Duke University 0.0
 E-NETPIC.COM, Inc. 0.0
 Epic Communications, Inc. 0.0
 STMicoelectronics (Grenoble 2) SAS 0.0
 Battlefield Telecommunications Systems, LLC 0.0
 Purdue Research Foundation 0.0
 North American Lighting, Inc. 0.0
 Toyota Motor Engineering & Manufacturing North America, Inc. 0.0
 University of Central Florida Research Foundation, Inc. 0.0
 sdPhotonics, LLC 0.0
 STMicroelectronics (Shenzhen) Manufacturing Co., Ltd. 0.0
 STMicroelectronics International N.V. 0.0
 Airbus Operations GmbH 0.0
 GOODRICH LIGHTING SYSTEMS GMBH 0.0
 Ecole Polytechnique Fédérale de Lausanne 0.0
 Hilti Aktiengesellschaft 0.0

ESW GmbH 0.0
 Bruker HTS GmbH 0.0
 Oswald Elektromotoren GmbH 0.0
 Chung-Hsin Electric & Machinery Mfg. Corp. 0.0
 Wuhan Haixinneng Electric Limited Company 0.0
 Teledyne Scientific & Imaging, LLC 0.0
 Tyco Electronics Amp Korea Ltd. 0.0
 Albert-Ludwigs Universitat Freiburg 0.0
 Micronas GmbH 0.0
 Centre Luxembourgeois de Recherches pour le Verre et la Ceramique S.A.
 (C.R.V.C.) 0.0
 Guardian Industries Corp. 0.0
 Tyco Electronics Belgium EC BVBA 0.0
 TE Connectivity Nederland B.V. 0.0
 KONICA MINOLTA, INC. 0.0
 U-Shin Ltd. 0.0
 Mazda Motor Corporation 0.0
 DENSO International America, Inc. 0.0
 West Corporation 0.0
 Dongguan Masstop Liquid Crystal Display Co., Ltd. 0.0
 Torchlight Technology Co., Ltd. 0.0
 Tyco Electronics Svenska Holdings AB 0.0
 Advics Co., Ltd. 0.0
 Synopsys, Inc. 0.0
 Synopsys Taiwan Co., Ltd. 0.0
 CDT OXFORD LIMITED 0.0
 CAMBRIDGE DISPLAY TECHNOLOGY LIMITED 0.0
 Beijing Asahi Glass Electronics Co., Ltd. 0.0
 Suzhou Boe Chatani Electronics Co., Ltd. 0.0
 Mitsubishi Jidosha Kogyo Kabushiki Kaisha 0.0
 Mitsubishi Jidosha Engineering Kabushiki Kaisha 0.0
 Toyota Boshoku Kabushiki Kaisha 0.0
 Toyota Shatai Kabushiki Kaisha 0.0
 Fraunhofer-Gesellschaft zur Foerderung der angewandten Forschung e.V. 0.0
 Shin-Etsu Handotai Co., Ltd. 0.0
 Stanley Electric Co., Ltd. 0.0
 Chimei Innolux Corporation 0.0
 Peking University Founder Group Co., Ltd. 0.0
 Founder Microelectronics International Co., Ltd. 0.0
 Texas Instruments Deutschland GmbH 0.0
 Texas Instruments Incorporated 0.0
 INVENTEC (PUDONG) TECHNOLOGY CORPORATION 0.0
 Richtek Technology Corporation 0.0
 Infineon Technologies AG 0.0
 American Air Liquide, Inc. 0.0
 L'Air Liquide Société Anonyme Pour L'Étude Et L'Exploitation Des Procédés
 Georges Clause 0.0
 Stichting National Lucht-En Ruimtevaart Laboratorium 0.0

Yamato Electronic Co., Ltd. 0.0
 Nippon Soken, Inc. 0.0
 Fu An Industrial Co., Ltd. 0.0
 Get Auto Accessories Co., Ltd. 0.0
 UNIVERSITY OF NEBRASKA BOARD OF REGENTS 0.0
 J.A. Woollam Co. Inc. 0.0
 Topmore Technology Inc. 0.0
 Aptos Technology Inc. 0.0
 Lintec Corporation 0.0
 Kyushu University, National University Corporation 0.0
 Hitachi Displays, Ltd. 0.0
 JAPAN DISPLAY INC. 0.0
 Henkel Corporation 0.0

```
[27]: # closeness centrality
closeness = nx.closeness centrality(us_graph)
for w in sorted(closeness, key=closeness.get, reverse=True):
    print(w, closeness[w])
```

Samsung Electronics Co., Ltd. 0.11556670253543498
 IMEC 0.10819312151476919
 International Business Machines Corporation 0.10100503325834695
 Panasonic Corporation 0.1005443489561424
 The Regents of the University of California 0.09775764305381031
 STMICROELECTRONICS S.R.L. 0.09732604198072504
 Taiwan Semiconductor Manufacturing Company, Ltd. 0.0968982352027878
 Sony Corporation 0.09615855401803369
 GLOBALFOUNDRIES Inc. 0.09574092729048522
 Seoul National University Industry Foundation 0.09491646290047027
 Toyota Jidosha Kabushiki Kaisha 0.09175587308484588
 Samsung Display Co., Ltd. 0.09053120537426786
 Industry-Academic Cooperation Foundation, Yonsei University 0.09016093459564099
 Korea Advanced Institute of Science & Technology 0.08961117279932611
 SNU R&DB FOUNDATION 0.08906807478236049
 Georgia Tech Research Corp. 0.0886204965171225
 Osaka University 0.0886204965171225
 Sumitomo Electric Industries, Ltd. 0.08853152011499688
 University of Seoul Industry Cooperation Foundation 0.08826565969423113
 GENITECH, INC. 0.08826565969423113
 Korea Electric Power Corporation 0.08826565969423113
 Sungkyunkwan University Foundation for Corporate Collaboration
 0.08826565969423113
 Dongguk University Industry-Academic Cooperation Foundation 0.08826565969423113
 Korea University of Technology and Education Industry-University Cooperation
 Foundation 0.08826565969423113
 Postech Academy-Industry Foundation Postech Univ. of Science and Technology
 0.08826565969423113
 Industry-University Cooperation Foundation Hanyang University

0.08826565969423113
 INDUSTRY FOUNDATION OF CHONNAM NATIONAL UNIVERSITY 0.08826565969423113
 Cheil Industries Inc. 0.08826565969423113
 Industry-Academic Cooperation Foundation 0.08826565969423113
 INDUSTRY-ACADEMY COOPERATION CORPS OF SUNCHON NATIONAL UNIVERSITY
 0.08826565969423113
 ASML Netherlands B.V. 0.08800139125203282
 The Board of Trustees of the Leland Stanford Junior University
 0.08730435052924444
 KATHOLIEKE UNIVERSITEIT LEUVEN 0.08405852624836692
 Universiteit Gent 0.08405852624836692
 Katholieke Universiteit Leuven, K.U. Leuven R&D 0.0838985671118334
 Honda Motor Co., Ltd. 0.083659766636183
 FREESCALE SEMICONDUCTOR, INC. 0.08225503174863516
 Kabushiki Kaisha Toshiba 0.0819492509614655
 COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES
 0.08187316066345116
 Japan Science and Technology Agency 0.08157020724749019
 Rohm Co., Ltd. 0.0814195697456481
 Kyungpook National University Industry Academic Cooperation Foundation
 0.08111995771346539
 STMICROELECTRONICS (CROLLES 2) SAS 0.08097097707487318
 Centre National de la Recherche Scientifique (CNRS) 0.08067465144971353
 King Abdulaziz City for Science and Technology 0.08052730048816155
 Renesas Electronics Corporation 0.08023420749275423
 Advanced Micro Devices, Inc. 0.07979854663758994
 Sumitomo Bakelite Co. Ltd. 0.07958248559073726
 Dacom Corporation 0.07958248559073726
 GLOBAL FOUNDRIES INC. 0.07951072500859954
 Applied Materials, Inc. 0.07951072500859954
 Toshiba America Electronic Components, Inc. 0.07951072500859954
 Cambridge Enterprise Limited 0.07951072500859954
 Cornell University 0.07951072500859954
 BAY ZU PRECISION CO., LTD. 0.07951072500859954
 MACRONIX INTERNATIONAL CO., LTD. 0.07951072500859954
 Matheson Tri-Gas 0.07951072500859954
 Infineon Technologies AG 0.07951072500859954
 Panasonic Liquid Crystal Display Co., Ltd. 0.07951072500859954
 WASEDA UNIVERSITY 0.07936759139022223
 Lintec Corporation 0.07929621765695764
 Kyushu University, National University Corporation 0.07929621765695764
 Nihon Colmo Co., Ltd. 0.07922497217837995
 Denso Corporation 0.0789412659216982
 Tohoku University 0.07880017339994361
 Kyoto University 0.07851949602363036
 Intermolecular, Inc. 0.07837990580847724
 STMicroelectronics Limited 0.07810220906513454
 STMICROELECTRONICS ASIA PACIFIC PTE. LTD. 0.0776209454529374

University of Massachusetts 0.07748452902859129
 Q1 Nanosystems, Inc 0.07748452902859129
 Teledyne Scientific & Imaging, LLC 0.07748452902859129
 STMicroelectronics (Grenoble 2) SAS 0.0773485912583657
 STMicroelectronics (Mala) Ltd 0.07721312962744036
 STMicroelectronics (Grenoble 2) SAS 0.07721312962744036
 STMicroelectronics (Shenzhen) Manufacturing Co., Ltd. 0.07721312962744036
 STMicroelectronics International N.V. 0.07721312962744036
 Global Unichip Corp. 0.07694362481198681
 AISIN SEIKI KABUSHIKI KAISHA 0.07660937796223882
 National University Corporation Nagoya University 0.07654287676609105
 Sôny Electronics Inc. 0.0764764909232757
 Sony Computer Entertainment Inc. 0.0764764909232757
 Tel Solar AG 0.0764764909232757
 Sony Mobile Communications Inc. 0.0764764909232757
 SONY PICTURES TECHNOLOGIES INC. 0.0764764909232757
 Sharp Kabushiki Kaisha 0.07641022013391412
 Sumitomo Metal Mining Co., Ltd. 0.07614628154968643
 Fuji Electric Co., Ltd. 0.0760805815656056
 Samsung Techwin Co., Ltd. 0.07568875024423767
 Autonetworks Technologies, Ltd. 0.07498077724025246
 Sumitomo Wiring Systems, Ltd. 0.07498077724025246
 Aisin AW Co., Ltd. 0.07478998645847064
 Kabushiki Kaisha Toyota Jidoshokki 0.07466333110460363
 National Institute of Advanced Industrial Science and Technology
 0.07428592589261744
 Hino Motors, Ltd. 0.07385041376426875
 Koito Manufacturing Co., Ltd. 0.0737886142548426
 KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO 0.07366532500796732
 Shinshu University 0.07366532500796732
 Hyundai Motor Company 0.07354244706800407
 Kia Motors Corporation 0.0732370382346652
 Kobe Steel, Limited 0.07299453148554379
 Electronics and Telecommunications Research Institute 0.07287387936738586
 Hynix Semiconductor Inc. 0.07204035460337982
 SK Telecom Co., Ltd. 0.07192283363339062
 Phillips Screw Company 0.07163070189645564
 Sila Nanotechnologies Inc. 0.07163070189645564
 Dainippon Screen Mfg. Co., Ltd. 0.07163070189645564
 Hamamatsu Photonics K.K. 0.07163070189645564
 Sumitomo Electric Toyama Co., Ltd. 0.07157256009296825
 Sumitomo Electric Device Innovations, Inc. 0.07157256009296825
 National University Corporation Toyohashi University of Technology
 0.07157256009296825
 Sumitomo Electric Sintered Alloy, Ltd. 0.07157256009296825
 NATIONAL UNIVERSITY CORPORATION NARA INSTITUTE OF SCIENCE AND TECHNOLOGY
 0.07157256009296825
 Stichting National Lucht-En Ruimtevaart Laboratorium 0.07122568177264692

The Hong Kong University of Science and Technology 0.07088214954544766
 Showa Denko K.K. 0.0694310189248322
 SCK.-CEN 0.06862054010469798
 IMEC VZW 0.06862054010469798
 The University of Tokyo 0.06851390367873884
 TS Tech Co., Ltd. 0.06835456901902084
 Tokyo Institute of Technology 0.06835456901902084
 Keihin Corporation 0.06835456901902084
 Sumitomo Rubber Industries, Ltd. 0.06835456901902084
 Yutaka Giken Co., Ltd. 0.06835456901902084
 Stanley Electric Co., Ltd. 0.06835456901902084
 SanDisk 3D LLC 0.06751714704022732
 Conti Temic microelectronic GmbH 0.06741390981233707
 Tokyo Electric Power Company, Incorporated 0.06725964457249191
 Ishikawajima-Harima Heavy Industries Co., Ltd. 0.06725964457249191
 Toshiba Industrial Products Manufacturing Corporation 0.06720837959949458
 Toshiba Medical Systems Corporation 0.06720837959949458
 Toshiba Lightning & Technology Corporation 0.06720837959949458
 TOSHIBA TEC KABUSHIKI KAISHA 0.06720837959949458
 TOSHIBA MATERIALS CO., LTD. 0.06720837959949458
 Toshiba Electron Tubes & Devices Co., Ltd. 0.06720837959949458
 Toshiba Lighting & Technology Corporation 0.06720837959949458
 Universite Joseph Fourier 0.06720837959949458
 CNRS-Centre National de la Recherche Scientifique 0.06720837959949458
 Institut Ploytechnique de Grenoble 0.06715719271480342
 ISORG 0.06715719271480342
 Centre Nationale de la Recherche Scientifique (CNRS) 0.06715719271480342
 Murata Manufacturing Co., Ltd. 0.06710608374013462
 SAE Magnetics (H.K.) Ltd. 0.06705505249774668
 TDK Corporation 0.06705505249774668
 KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS 0.06685170131503934
 Tadahiro Ohmi 0.06685170131503934
 Kansai University 0.06685170131503934
 MITSUBISHI HEAVY INDUSTRIES, LTD. 0.06685170131503934
 Finewell Co., Ltd. 0.06685170131503934
 STMicroelectronics, Inc. 0.06654897662983916
 OLYMPUS CORPORATION 0.06649878886465829
 France/Ecole Normale Seperieure de Cachan 0.06639864008624766
 France and Universitat de les Illes Balears 0.06639864008624766
 Societe Francaise de Detecteurs Infrarouges - SOFRADIR 0.06634867873178096
 Universite Montpellier 2 Sciences et Techniques 0.06634867873178096
 UNIVERSITE CLAUDE BERNARD LYON I 0.06634867873178096
 Hitachi Tohbu Semiconductor Ltd. 0.06605048242287408
 ITT Corporation 0.06605048242287408
 Hitachi Device Engineering Co., Ltd. 0.06605048242287408
 Hitachi ULSI Systems Co., Ltd. 0.06605048242287408
 Hitachi Yonezawa Electronics Co., Ltd. 0.06605048242287408
 Spansion LLC 0.06575495453731312

ATI Technologies, Inc. 0.06575495453731312
 Plastic Logic Limited 0.06565703204358667
 Sanken Electric Co., Ltd. 0.0656081800852209
 Nissan Motor Co., Ltd. 0.0656081800852209
 Hitachi Displays, Ltd. 0.06555940076917241
 JAPAN DISPLAY INC. 0.06555940076917241
 UD Trucks Corporation 0.06546205941687966
 The Furukawa Electric Co., Ltd. 0.06541349705826179
 FURUKAWA MAGNET WIRE CO., LTD. 0.06531658817373102
 Asmo Co., Ltd. 0.06526824132830265
 NEC Tokin Corporation 0.06517176203587353
 Tris Inc. 0.06517176203587353
 DENSO International America, Inc. 0.06517176203587353
 Advics Co., Ltd. 0.06517176203587353
 Nippon Soken, Inc. 0.06517176203587353
 SK hynix Inc. 0.06507556755316375
 Fujikin Incorporated 0.06507556755316375
 Elpida Memory, Inc. 0.06497965662088201
 Elpidia Memory, Inc. 0.06478868040744812
 Seiko Epson Corporation 0.06474111162594486
 Central Research Institute of Electric Power Industry 0.06459882346852519
 Nanyang Technological University 0.06445715938197141
 STMicroelectronics (Research & Development) Limited 0.06408240845533204
 Sumitomo Chemical Company, Limited 0.0638041924996649
 TECHNOVA INC. 0.06352838186926289
 Semiconductor Technology Academic Research Center 0.06352838186926289
 Foundation for Advancement of International Science 0.06352838186926289
 SEMICONDUCTOR ENERGY LABORATORY CO., LTD. 0.0634369741255661
 Kyocera Corporation 0.06334582904779949
 Fuji Electric FA Components & Systems Co., Ltd. 0.0633003546550875
 Oncotech, Inc. 0.0633003546550875
 Funai Electric Advanced Applied Technology Research Institute Inc.
 0.06320960145844938
 Yoshitaka Sugawara 0.06320960145844938
 Tanaka Kikinzoku Kogyo K.K. 0.06174887537432555
 Henkel Corporation 0.061662513310864954
 Hyundai Motor Japan R&D Center 0.06149051187903548
 Myunghwa Ind. Co. Ltd. 0.06149051187903548
 LG Hausys, Ltd. 0.06144766134810933
 Korea Institute of Science & Technology 0.06144766134810933
 HYUNDAI MOBIS CO., LTD. 0.06144766134810933
 SL Lighting Corporation 0.06144766134810933
 Il Heung Co., Ltd. 0.06144766134810933
 Kobelco Construction Machinery Co., Ltd. 0.06106467730923607
 SOONGSIL UNIVERSITY-INDUSTRY COOPERATION FOUNDATION 0.060980217174645156
 Konkuk University Industrial Cooperation Corp. 0.060980217174645156
 Korean Broadcasting System 0.060980217174645156
 Dongwon Systems Corporation 0.060980217174645156

Soongsil University Foundation of University-Industry Cooperation
 0.060980217174645156
 Grandis, Inc. 0.06039547536612116
 University of Macau 0.059579320293606006
 Schlumberger Technology Corporation 0.05789717270816605
 Massachusetts Institute of Technology 0.056998961883992824
 Asahi Kasei Microdevices Corporation 0.05688864131260444
 KONICA MINOLTA, INC. 0.05688864131260444
 Headway Technologies, Inc. 0.056851962627038614
 TDK Korea Corporation 0.056851962627038614
 King Abdulaziz City Science and Technology 0.05670571963635813
 Olympus Imaging Corp. 0.056451596693045385
 Olympus Medical Systems Corp. 0.056451596693045385
 Leibniz-Institut für Polymerforschung Dresden e.V. 0.05584382142782577
 FURUKAWA AUTOMOTIVE SYSTEMS INC. 0.05573792290425846
 Yamato Electronic Co., Ltd. 0.05556231508162375
 Tokyo Electron Limited 0.05542262352893582
 Universal Display Corporation 0.0552489937559755
 Seiko NPC Corporation 0.05517984607918454
 GLOBALFOUNDRIES Singapore Pte. Ltd. 0.0550420686857284
 MEDTRONIC, INC. 0.05416301844873273
 Chichibu Fuji Co., Ltd. 0.05412976920474947
 Beth Israel Deaconess Medical Center, Inc. 0.04945451151684626
 The Charles Stark Draper Laboratory, Inc. 0.04945451151684626
 The President and Fellows of Harvard College 0.04945451151684626
 Raytheon Company 0.04945451151684626
 The Furukawa Electric Company, Ltd. 0.04850241696069136
 Tocalo Co., Ltd. 0.04826348879832342
 Princeton University Office of Technology and Trademark Licensing
 0.048131765302694814
 National University of Singapore 0.047974643109106034
 Tyco Electronics Corporation 0.009133723419437707
 Hon Hai Precision Industry Co., Ltd. 0.008547008547008548
 BOE TECHNOLOGY GROUP CO., LTD. 0.007849293563579277
 Tyco Electronics Japan G.K. 0.00717649697241534
 University of Tennessee Research Foundation 0.006541077969649398
 Siemens Aktiengesellschaft 0.006541077969649398
 Sanyo Electric Co., Ltd. 0.006279434850863423
 Tyco Electronics Raychem GmbH 0.006279434850863423
 Tsinghua University 0.005917159763313609
 Hong Fu Jin Precision Industry (ShenZhen) Co., Ltd. 0.005917159763313609
 YALE UNIVERSITY 0.005606638259699484
 TE Connectivity India Private Limited 0.005581719867434153
 Tyco Electronics Holdings (Bermuda) No. 7 Ltd. 0.005581719867434153
 Tyco Electronics Amp Korea Ltd. 0.005581719867434153
 Fu Tai Industry (Shenzhen) Co., Ltd. 0.005128205128205129
 Hong Fu Precision Industry (ShenZhen) Co., Ltd. 0.005128205128205129
 Fu Tai Hua Industry (Shenzhen) Co., Ltd. 0.005128205128205129

UT-Battelle, LLC 0.004905808477237048
 Siemens Medical Solutions USA, Inc. 0.004905808477237048
 Tyco Electronics Singapore PTE Ltd. 0.00478433131494356
 Tyco Electronics Svenska Holdings AB 0.00478433131494356
 Canon Kabushiki Kaisha 0.004709576138147566
 Hitachi, Ltd. 0.004709576138147566
 Kokichi Terajima 0.004709576138147566
 Xinhongzhou Precision Technology Co., Ltd 0.004709576138147566
 Micro Win Tech Inc. 0.004709576138147566
 LARGAN PRECISION CO., LTD. 0.004709576138147566
 National Chiao Tung University 0.004709576138147566
 Tyco Electronics AMP Espana SA 0.004368302504948468
 HEFEI BOE OPTOELECTRONICS TECHNOLOGY CO., LTD. 0.004360718646432932
 BEIJING BOE DISPLAY TECHNOLOGY CO., LTD. 0.004360718646432932
 The Regents of the University of Colorado 0.004360718646432932
 National Institute of Standards and Technology 0.004360718646432932
 Siemens Industry, Inc. 0.004360718646432932
 Caterpillar Global Mining LLC 0.004360718646432932
 CHENGDU BOE OPTOELECTRONICS TECHNOLOGY CO., LTD. 0.004360718646432932
 Beijing Asahi Glass Electronics Co., Ltd. 0.004360718646432932
 Suzhou Boe Chatani Electronics Co., Ltd. 0.004360718646432932
 Nuctech Company Limited 0.004048582995951417
 Hon Hai Precision Industry Co., Ltd. 0.004048582995951417
 Massachusetts General Hospital 0.003924646781789639
 Ulvac, Inc. 0.00358824848620767
 Sanyo Technology Center (Shenzhen) Co., Ltd. 0.00358824848620767
 Saga Sanyo Industries Co., Ltd. 0.00358824848620767
 Mitsubishi Metal Corporation 0.00358824848620767
 University of Utah Research Foundation 0.003567860710717853
 Nihon Ceratec Co., Ltd. 0.0035321821036106748
 Taiheiyo Cement Corporation 0.0035321821036106748
 Max-Planck-Gesellschaft zur Foerderung der Wissenschaften E.V.
 0.0035321821036106748
 Carl Zeiss Microscopy GmbH 0.0035321821036106748
 NEC Access Technica, Ltd. 0.0035321821036106748
 NEC Corporation 0.0035321821036106748
 Duke University 0.003270538984824699
 Intel Corporation 0.0031397174254317113
 University of California 0.0031397174254317113
 GSI 0.0031397174254317113
 Lawrence Livermore National Security, LLC. 0.0031397174254317113
 Shenzhen Futaihong Precision Industry Co., Ltd. 0.0031397174254317113
 Northeastern University 0.0031397174254317113
 Cal-Comp Electronics & Communications Company Limited 0.0031397174254317113
 Philips Lumileds Lighting Company, LLC 0.0031397174254317113
 Volkswagen AG 0.0031397174254317113
 iHi CHARGING SYSTEMS INTERNATIONAL GMBH 0.0031397174254317113
 Mahle International GmbH 0.0031397174254317113

AAC Acoustic Technologies (Shenzhen) Co., Ltd. 0.0031397174254317113
Japan Aviation Electronics Industry, Ltd. 0.0031397174254317113
Robert Bosch GmbH 0.0031397174254317113
California Institute of Technology 0.0031397174254317113
Adesto Technologies Corporation 0.0031397174254317113
Fujitsu Limited 0.0031397174254317113
Foxconn Technology Co., Ltd. 0.0031397174254317113
Tohoku Pioneer Corporation 0.0031397174254317113
NthDegree Technologies Worldwide Inc. 0.0031397174254317113
Bruker BioSpin GmbH 0.0031397174254317113
The Trustees of Princeton University 0.0031397174254317113
Ford Global Technologies, LLC 0.0031397174254317113
Ledlink Optics (Dong Guan) Co. Ltd. 0.0031397174254317113
Yang Zhou LedLink Optics Co., Ltd. 0.0031397174254317113
LedLink Optics, Inc. 0.0031397174254317113
Inventec Appliances Corp. 0.0031397174254317113
Innocom Technology (Shenzhen) Co., Ltd. 0.0031397174254317113
Shin-Etsu Chemical Co., Ltd. 0.0031397174254317113
Lite-On Technology Corp. 0.0031397174254317113
CANON PRECISION, INC. 0.0028257456828885397
Hitachi Mito Engineering Co., Ltd. 0.0028257456828885397
Hitachi High-Technologies Corporation 0.0028257456828885397
Shin-Kobe Electric Machinery Co., Ltd. 0.0028257456828885397
Industrial Technology Research Institute 0.0028257456828885397
Torchlight Technology Co., Ltd. 0.0028257456828885397
Richtek Technology Corporation 0.0028257456828885397
Deutsches Krebsforschungszentrum 0.002354788069073783
NEC Engineering, Ltd. 0.002354788069073783
NEC Energy Devices, Ltd. 0.002354788069073783
Fraunhofer-Gesellschaft zur Foerderung der angewandten Forschung e.V.
0.002354788069073783
Chandler Systems, Inc. 0.0020931449502878076
FIH (Hong Kong) Limited 0.0020931449502878076
Chi Mei Communication Systems, Inc. 0.0020931449502878076
Mersen USA Newburyport-MA, LLC 0.0020931449502878076
Cal-Comp Precision (Singapore) Limited 0.0020931449502878076
Koninklijke Philips Electronics N.V. 0.0020931449502878076
KONINKLIJKE PHILIPS N.V. 0.0020931449502878076
American Audio Components Inc. 0.0020931449502878076
Jae Taiwan, Ltd. 0.0020931449502878076
J & S Electronics, Inc. 0.0020931449502878076
Samsung SDI Co., Ltd. 0.0020931449502878076
Telaris Inc. 0.0020931449502878076
Adesto Technologies France SARL 0.0020931449502878076
Altis Semiconductor 0.0020931449502878076
Fujitsu Component Limited 0.0020931449502878076
Fujitsu Semiconductor Limited 0.0020931449502878076
FURUI PRECISE COMPONENT (KUNSHAN) CO., LTD. 0.0020931449502878076

Mitsubishi Electric Corporation 0.0020931449502878076
 Pioneer Corporation 0.0020931449502878076
 CHAMP TECH OPTICAL (FOSHAN) CORPORATION 0.0020931449502878076
 NASA, an agency of the United States 0.0020931449502878076
 NASA 0.0020931449502878076
 Ecole Polytechnique Federale de Lausanne (EPFL) 0.0020931449502878076
 Battelle Memorial Institute 0.0020931449502878076
 KINPO ELECTRONICS, INC. 0.0020931449502878076
 Colonial Plastics, Inc. 0.0020931449502878076
 Dow Global Technologies Inc. 0.0020931449502878076
 Inventec Appliances (Shanghai) Co., Ltd. 0.0020931449502878076
 INNOLUX CORPORATION 0.0020931449502878076
 Qiuye Sun 0.0020931449502878076
 AAC Technologies Holdings Inc. 0.0020931449502878076
 Afton Chemical Corporation 0.0020931449502878076
 VORBECK MATERIALS CORPORATION 0.0020931449502878076
 Inventec Appliances (Pudong) Corporation 0.0020931449502878076
 Samsund SDI Co., Ltd. 0.0020931449502878076
 Matsugaki Chemical Industries Co., Ltd. 0.0020931449502878076
 Silitek Electronic (Guangzhou) Co., Ltd. 0.0020931449502878076
 LITE-ON ELECTRONICS (GUANGZHOU) LIMITED 0.0020931449502878076
 Ecole Polytechnique Fédérale de Lausanne 0.0020931449502878076
 Shin-Etsu Handotai Co., Ltd. 0.0020931449502878076
 Chimei Innolux Corporation 0.0020931449502878076
 INVENTEC (PUDONG) TECHNOLOGY CORPORATION 0.0020931449502878076
 HITACHI KOKUSAI ELECTRIC INC. 0.0015698587127158557
 L'Air Liquid, Societe Anonyme pour l'Etude et l'Exploitation des Procédes
 Georges Claude 0.0015698587127158557
 ACER INCORPORATED 0.0015698587127158557
 LIANHONG TECHNOLOGY CO., LTD 0.0015698587127158557
 MATERIALS ANALYSIS TECHNOLOGY INC. 0.0015698587127158557
 National Health Research Institutes 0.0015698587127158557
 Dynalloy, Inc 0.0015698587127158557
 GM Global Technology Operations, Inc. 0.0015698587127158557
 Cummins PowerGen IP, Inc. 0.0015698587127158557
 CUMMINS CAL PACIFIC, LLC 0.0015698587127158557
 XJ Group Corporation 0.0015698587127158557
 State Grid Corporation of China 0.0015698587127158557
 Volex PLC 0.0015698587127158557
 Applied Micro Circuits Corporation 0.0015698587127158557
 Advins, Inc. 0.0015698587127158557
 Scientific Analysis Instruments, Ltd. 0.0015698587127158557
 Toshiba Global Commerce 0.0015698587127158557
 Solutions Holdings Corporation 0.0015698587127158557
 Varian Medical Systems, Inc. 0.0015698587127158557
 Sloan-Kettering Institute for Cancer Research 0.0015698587127158557
 NANOHOLDINGS LLC 0.0015698587127158557
 University of Florida Research Foundation, Inc. 0.0015698587127158557

Suzhou Golden Crown New Energy Co., Ltd 0.0015698587127158557
 Golden Crown New Energy (HK) Limited 0.0015698587127158557
 Postech Foundation 0.0015698587127158557
 Seoul Opto Device Co., Ltd. 0.0015698587127158557
 Xiangtan Electric Manufacturing Co., Ltd. 0.0015698587127158557
 Xiangtan Liyuan Electric Tooling Co., Ltd. 0.0015698587127158557
 Vanderbilt University 0.0015698587127158557
 Molecular Sensing, Inc. 0.0015698587127158557
 Neomax Materials Co., Ltd. 0.0015698587127158557
 Hitachi Metals, Ltd. 0.0015698587127158557
 CITIZEN HOLDINGS CO., LTD. 0.0015698587127158557
 Citizen Electronics Co., Ltd. 0.0015698587127158557
 Curators of the University of Missouri 0.0015698587127158557
 Integral Laser Solutions, Inc. 0.0015698587127158557
 Silergy Semiconductor Technology (Hangzhou) LTD 0.0015698587127158557
 Silergy Technology 0.0015698587127158557
 KBC RESEARCH FOUNDATION PVT. LTD. 0.0015698587127158557
 SunEdison Semiconductor Limited (UEN201334164H) 0.0015698587127158557
 Lextar Electronics Corp. 0.0015698587127158557
 Lextar Electronics Corporation 0.0015698587127158557
 H-Tech, LLC 0.0015698587127158557
 SRI Hermatics Inc. 0.0015698587127158557
 American Power Conversion Corporation 0.0015698587127158557
 Hydrogenics Corporation 0.0015698587127158557
 Alpine Electronics, Inc. 0.0015698587127158557
 Blueprint Acoustics Pty Ltd. 0.0015698587127158557
 JC Protek Co., Ltd. 0.0015698587127158557
 Andong National University Industry Academic Cooperation Foundation
 0.0015698587127158557
 Shimadzu Corporation 0.0015698587127158557
 Shimadzu Research Laboratory (Shanghai) Co. Ltd. 0.0015698587127158557
 FCI Americas Technology, Inc. 0.0015698587127158557
 FCI 0.0015698587127158557
 Askey Computer Corp. 0.0015698587127158557
 Askey Technology (Jiangsu) Ltd. 0.0015698587127158557
 Toppan Printing Co., Ltd. 0.0015698587127158557
 Advantest Corp. 0.0015698587127158557
 FSP-Powerland Technology Inc. 0.0015698587127158557
 FSP TECHNOLOGY INC. 0.0015698587127158557
 Kirk Key Interlock Company LLC 0.0015698587127158557
 Utility Relay Company 0.0015698587127158557
 Eastfield Corporation 0.0015698587127158557
 Peak Power & Mfg., Inc. 0.0015698587127158557
 Fuji Jukogyo Kabushiki Kaisha 0.0015698587127158557
 Nippon Chemical Industrial Co., Ltd. 0.0015698587127158557
 X-FAB SEMICONDUCTOR FOUNDRIES AG 0.0015698587127158557
 MELEXIS TECHNOLOGIES NV 0.0015698587127158557
 Spicer Technology, Inc. 0.0015698587127158557

Bubble Technologies Industries Inc. 0.0015698587127158557
 Tatung University 0.0015698587127158557
 Tatung Company 0.0015698587127158557
 Board of Regents, University of Texas System 0.0015698587127158557
 Texas Micro, Inc. 0.0015698587127158557
 Korea University Research and Business Foundation 0.0015698587127158557
 SK Hynix Inc. 0.0015698587127158557
 IHI AEROSPACE CO., LTD. 0.0015698587127158557
 SINFONIA TECHNOLOGY CO., LTD. 0.0015698587127158557
 Suzuki Motor Corporation 0.0015698587127158557
 Lithium Energy Japan 0.0015698587127158557
 Power Digital Delight Co., Ltd. 0.0015698587127158557
 Easthill Industrial Co., Ltd. 0.0015698587127158557
 LAAS-CNRE 0.0015698587127158557
 Atmel Rousset S.A.S. 0.0015698587127158557
 Kowa Company Ltd. 0.0015698587127158557
 Techsign Light Panel Co., Ltd. 0.0015698587127158557
 ECOLE NATIONALE SUPERIEURE DE TECHNIQUES AVANCEES 0.0015698587127158557
 ECOLE POLYTECHNIQUE 0.0015698587127158557
 Maytag Corporation 0.0015698587127158557
 Satori S-Tech Co., Ltd. 0.0015698587127158557
 Priestman Goode 0.0015698587127158557
 Cambridge Design Partnership LLP 0.0015698587127158557
 BYD Company Limited 0.0015698587127158557
 SHENZHEN BYD AUTO R&D COMPANY LIMITED 0.0015698587127158557
 Hayterzlab 0.0015698587127158557
 Heiwa 0.0015698587127158557
 Champion Elite Company Limited 0.0015698587127158557
 Midas Wei Trading Co., Ltd. 0.0015698587127158557
 Korea Research Institute of Standards and Science 0.0015698587127158557
 Micro Motion Technology Co., Ltd. 0.0015698587127158557
 S.T. Corporation 0.0015698587127158557
 Montana State University 0.0015698587127158557
 Plextronics, Inc. 0.0015698587127158557
 Nano-C, Inc. 0.0015698587127158557
 SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC 0.0015698587127158557
 Futaba Corporation 0.0015698587127158557
 OFFICE NATIONAL D'ETUDES ET DE RECHERCHES AEROSPATIALES (ONERA)
 0.0015698587127158557
 COMMISSARIAT ÁL'ÉNERGIE ATOMIQUE ET AUX ÉNERGIES ALTERNATIVES
 0.0015698587127158557
 Nitto Kogaku KK 0.0015698587127158557
 Koike, Yashuhiro 0.0015698587127158557
 Hitachi Industrial Equipment System Co. 0.0015698587127158557
 Nippon Steel & Sumikin Stainless Steel Corporation 0.0015698587127158557
 Board of Regents of the University of Oklahoma 0.0015698587127158557
 Phononic Devices, Inc. 0.0015698587127158557
 Daimler-Benz AG 0.0015698587127158557

Ford Motor Company 0.0015698587127158557
 IMRA America, Inc. 0.0015698587127158557
 The Regents of the University of Colorado, a body corporate
 0.0015698587127158557
 EchoStar Technologies, L.L.C. 0.0015698587127158557
 DISH Network L.L.C. 0.0015698587127158557
 KWANSEI GAKUIN EDUCATIONAL FOUNDATION 0.0015698587127158557
 TOYO TANSO CO., LTD. 0.0015698587127158557
 Furukawa Co., Ltd. 0.0015698587127158557
 Tohoku Techno Arch Co., Ltd. 0.0015698587127158557
 Baxter International Inc. 0.0015698587127158557
 Baxter Healthcare S.A. 0.0015698587127158557
 Nujira Limited 0.0015698587127158557
 Skyworks Solutions, Inc. 0.0015698587127158557
 Nantong Ya Tai Candle Arts & Crafts Co., Ltd. 0.0015698587127158557
 Shanghai Q Mall & Co. Ltd. 0.0015698587127158557
 Giant Electric Vehicle Kunshan Co., Ltd. 0.0015698587127158557
 National Yunlin University of Science and Technology 0.0015698587127158557
 CSP-Innovazione Nelle ICT Scarl 0.0015698587127158557
 S.I.SV.EL. Societa', Italiana Per Lo Sviluppo Dell'elettronica S.P.A.
 0.0015698587127158557
 Legrand France 0.0015698587127158557
 Legrand SNC 0.0015698587127158557
 Dolby Laboratories Licensing Corporation 0.0015698587127158557
 Dolby International AB 0.0015698587127158557
 National Taipei University of Technology 0.0015698587127158557
 Phansco Corp. 0.0015698587127158557
 AT&T MOBILITY II LLC 0.0015698587127158557
 AT&T INTELLECTUAL PROPERTY I, L.P. 0.0015698587127158557
 Oxford Instruments, Ltd. 0.0015698587127158557
 Oxford Instruments AFM, Inc 0.0015698587127158557
 Fundació Institut de Ciències Fotòniques 0.0015698587127158557
 Consejo Superior de Investigaciones Cientificas 0.0015698587127158557
 X-Body Inc. 0.0015698587127158557
 The Board of Trustees of the University of Illinois 0.0015698587127158557
 Toyota Gosei Co., Ltd. 0.0015698587127158557
 Sumita Optical Glass, Inc. 0.0015698587127158557
 Los Alamos National Security, LLC 0.0015698587127158557
 Sharp Corporation 0.0015698587127158557
 NCKU Research & Development Foundation 0.0015698587127158557
 Himax Technologies Limited 0.0015698587127158557
 Shinko Electric Industries Co., Ltd. 0.0015698587127158557
 Taiyo Yuden Co., Ltd. 0.0015698587127158557
 The George Washington University 0.0015698587127158557
 The United States of America as represented by the Secretary of the Navy
 0.0015698587127158557
 Airbus Operations SAS 0.0015698587127158557
 02Micro 0.0015698587127158557

Ricoh Company, Ltd. 0.0015698587127158557
Sijtechnology, Inc. 0.0015698587127158557
Moxtek, Inc. 0.0015698587127158557
Brigham Young University 0.0015698587127158557
Shenzhen Jiawei Photovoltaic Lighting Co., Ltd. 0.0015698587127158557
Light-Core Limited 0.0015698587127158557
Corning Incorporated 0.0015698587127158557
S.O.I. Tec Silicon On Insulator Technologies 0.0015698587127158557
SIEMENS ENERGY, INC. 0.0015698587127158557
Arkansas Power Electronics International, Inc. 0.0015698587127158557
The Chinese University of Hong Kong 0.0015698587127158557
CITY UNIVERSITY OF HONG KONG 0.0015698587127158557
Regents of the University of Minnesota 0.0015698587127158557
Life Services, LLC 0.0015698587127158557
FIAT POWERTRAIN TECHNOLOGIES S.P.A. 0.0015698587127158557
FPT INDUSTRIAL S.P.A. 0.0015698587127158557
Murata Machinery, Ltd. 0.0015698587127158557
The Doshisha 0.0015698587127158557
JNC Petrochemical Corporation 0.0015698587127158557
JNC Corporation 0.0015698587127158557
People & Give Co., Ltd. 0.0015698587127158557
Global and Creative Partnership 0.0015698587127158557
Universal Scientific Industrial Co., Ltd. 0.0015698587127158557
Universal Global Scientific Industrial Co., Ltd. 0.0015698587127158557
Gaslow International Limited 0.0015698587127158557
Dong Guan Apsun Lighting Technology Co., Ltd 0.0015698587127158557
LG INNOTEK CO., LTD. 0.0015698587127158557
LG Electronics Inc. 0.0015698587127158557
National Applied Research Laboratories 0.0015698587127158557
MFC Sealing Technology Co., Ltd. 0.0015698587127158557
Molex Japan Co., Ltd. 0.0015698587127158557
Advantest Corporation 0.0015698587127158557
VisEra Technologies Company Limited 0.0015698587127158557
OmniVision Technologies, Inc. 0.0015698587127158557
Dow Corning Corporation 0.0015698587127158557
Dow Corning Toray Co., Ltd. 0.0015698587127158557
Nippon Telegraph and Telephone Corporation 0.0015698587127158557
NTT Electronics Corporation 0.0015698587127158557
Gigaphoton Inc. 0.0015698587127158557
Komatsu Ltd. 0.0015698587127158557
Savannah River Nuclear Solutions, LLC 0.0015698587127158557
Fisk University 0.0015698587127158557
Rockwell Automation Technologies, Inc. 0.0015698587127158557
Rockwell Automation Safely AG 0.0015698587127158557
Public Interest Incorporated Foundations Association for the Development of
Earthquake Prediction 0.0015698587127158557
Techno Sugaya Co., Ltd. 0.0015698587127158557
UNIVERSITE DE LIEGE 0.0015698587127158557

Cockerill Maintenance & Ingénierie S.A. 0.0015698587127158557
 The University of Maryland 0.0015698587127158557
 Calabatas Creek Research, Inc. 0.0015698587127158557
 United Microelectronic Corp. 0.0015698587127158557
 Lam Research Corporation 0.0015698587127158557
 Jang Soon Park 0.0015698587127158557
 Baiksan OPC Co., Ltd. 0.0015698587127158557
 Casio Computer Co., Ltd. 0.0015698587127158557
 CASIO ELECTRONICS MANUFACTURING CO., LTD. 0.0015698587127158557
 Regal Beloit America, Inc. 0.0015698587127158557
 Regal Beloit Australia Pty Ltd 0.0015698587127158557
 E-NETPIC.COM, Inc. 0.0015698587127158557
 Epic Communications, Inc. 0.0015698587127158557
 Battlefield Telecommunications Systems, LLC 0.0015698587127158557
 Purdue Research Foundation 0.0015698587127158557
 North American Lighting, Inc. 0.0015698587127158557
 Toyota Motor Engineering & Manufacturing North America, Inc.
 0.0015698587127158557
 University of Central Florida Research Foundation, Inc. 0.0015698587127158557
 sdPhotonics, LLC 0.0015698587127158557
 Airbus Operations GmbH 0.0015698587127158557
 GOODRICH LIGHTING SYSTEMS GMBH 0.0015698587127158557
 Hilti Aktiengesellschaft 0.0015698587127158557
 ESW GmbH 0.0015698587127158557
 Bruker HTS GmbH 0.0015698587127158557
 Oswald Elektromotoren GmbH 0.0015698587127158557
 Chung-Hsin Electric & Machinery Mfg. Corp. 0.0015698587127158557
 Wuhan Haixinneng Electric Limited Company 0.0015698587127158557
 Albert-Ludwigs Universität Freiburg 0.0015698587127158557
 Micronas GmbH 0.0015698587127158557
 Centre Luxembourgeois de Recherches pour le Verre et la Ceramique S.A.
 (C.R.V.C.) 0.0015698587127158557
 Guardian Industries Corp. 0.0015698587127158557
 Tyco Electronics Belgium EC BVBA 0.0015698587127158557
 TE Connectivity Nederland B.V. 0.0015698587127158557
 U-Shin Ltd. 0.0015698587127158557
 Mazda Motor Corporation 0.0015698587127158557
 West Corporation 0.0015698587127158557
 Dongguan Masstop Liquid Crystal Display Co., Ltd. 0.0015698587127158557
 Synopsys, Inc. 0.0015698587127158557
 Synopsys Taiwan Co., Ltd. 0.0015698587127158557
 CDT OXFORD LIMITED 0.0015698587127158557
 CAMBRIDGE DISPLAY TECHNOLOGY LIMITED 0.0015698587127158557
 Mitsubishi Jidosha Kogyo Kabushiki Kaisha 0.0015698587127158557
 Mitsubishi Jidosha Engineering Kabushiki Kaisha 0.0015698587127158557
 Toyota Boshoku Kabushiki Kaisha 0.0015698587127158557
 Toyota Shatai Kabushiki Kaisha 0.0015698587127158557
 Peking University Founder Group Co., Ltd. 0.0015698587127158557

Founder Microelectronics International Co., Ltd. 0.0015698587127158557
Texas Instruments Deutschland GmbH 0.0015698587127158557
Texas Instruments Incorporated 0.0015698587127158557
American Air Liquide, Inc. 0.0015698587127158557
L'Air Liquide Société Anonyme Pour L'Étude Et L'Exploitation Des Procédés
Georges Clause 0.0015698587127158557
Fu An Industrial Co., Ltd. 0.0015698587127158557
Get Auto Accessories Co., Ltd. 0.0015698587127158557
UNIVERSITY OF NEBRASKA BOARD OF REGENTS 0.0015698587127158557
J.A. Woollam Co. Inc. 0.0015698587127158557
Topmore Technology Inc. 0.0015698587127158557
Aptos Technology Inc. 0.0015698587127158557