Shenzhen–Hong Kong–Guangzhou

Shenzhen–Hong Kong–Guangzhou is a multi-cluster spanning an area around China and Hong-Kong, China. It filed 2,291 PCT applications and published 3,092 scientific articles, both per 1 million inhabitants over the last five years, making it the:

2\textsuperscript{nd} largest science and technology cluster in 2023 (unchanged from 2022)

32\textsuperscript{nd} S&T cluster by intensity (relative to population density) in 2023 (up five spots from 2022)

### Top PCT applicants

<table>
<thead>
<tr>
<th>Rank</th>
<th>Applicant</th>
<th>Patents</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Huawei</td>
<td>25,673</td>
<td>23%</td>
</tr>
<tr>
<td>2</td>
<td>Oppo</td>
<td>8,341</td>
<td>7%</td>
</tr>
<tr>
<td>3</td>
<td>Zte</td>
<td>6,451</td>
<td>6%</td>
</tr>
</tbody>
</table>

### Top publishing organizations

<table>
<thead>
<tr>
<th>Rank</th>
<th>Organization</th>
<th>Articles</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sun Yat Sen University</td>
<td>20,466</td>
<td>13%</td>
</tr>
<tr>
<td>2</td>
<td>South China University of Technology</td>
<td>14,775</td>
<td>10%</td>
</tr>
<tr>
<td>3</td>
<td>Shenzhen University</td>
<td>8,047</td>
<td>5%</td>
</tr>
</tbody>
</table>

### Top technology fields in Shenzhen–Hong Kong–Guangzhou

- Digital coms. (26%)
- Computer tech. (20%)
- Audio-visual tech. (7%)
- Telecoms (6%)
- Electrical machinery (6%)
- Measurement (4%)
- Optics (4%)

- Chemistry (18%)
- Engineering (12%)
- Technology (11%)
- Physics & math (9%)
- Biochem. & biotech. (9%)
- Clinical medicine (6%)
- Clinical medicine (6%)
- Earth sciences (5%)

3% of Shenzhen–Hong Kong–Guangzhou’s PCT patent applications are filed in collaboration with other inventors, with Beijing, Shanghai–Suzhou and Melbourne emerging as the top collaborative locations.

63% of Shenzhen–Hong Kong–Guangzhou’s scientific articles are published in collaboration with other organizations, with the top three collaborating locations being Beijing, Shanghai–Suzhou and Wuhan.