附表1坪田侵入岩锆石LA-ICP-MS U-Pb定年结果

Table1 ZirconLA-ICP-MS U-Pb data of Pingtian intrusive rocks

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测点 | Th | U | Th/U | 同位素比值 | | | | | | 年龄（Ma） | | | | | | 谐和度(%) |
| (×10-6) | | 207Pb /206Pb | 1σ | 207Pb /235U | 1σ | 206Pb /238U | 1σ | 207Pb/206Pb | 1σ | 206Pb/235U | 1σ | 208Pb/238U | 1σ |
| 粗粒似斑状黑云母花岗岩（SK1-1） | | | | | | | | | | | | | | | |  |
| 1 | 60.4 | 596 | 0.10 | 0.0513 | 0.0009 | 0.2627 | 0.0051 | 0.0371 | 0.0003 | 254 | 40.7 | 237 | 4.1 | 235 | 1.8 | 99 |
| 2 | 64.9 | 554 | 0.12 | 0.0511 | 0.0008 | 0.2650 | 0.0047 | 0.0375 | 0.0003 | 256 | 37.0 | 239 | 3.7 | 237 | 1.7 | 99 |
| 5 | 90.7 | 1146 | 0.08 | 0.0507 | 0.0008 | 0.2617 | 0.0041 | 0.0374 | 0.0002 | 233 | 35.2 | 236 | 3.3 | 237 | 1.5 | 99 |
| 7 | 73.6 | 746 | 0.10 | 0.0506 | 0.0009 | 0.2660 | 0.0045 | 0.0381 | 0.0002 | 220 | 36.1 | 240 | 3.6 | 241 | 1.4 | 99 |
| 9 | 75.0 | 671 | 0.11 | 0.0499 | 0.0007 | 0.2591 | 0.0039 | 0.0376 | 0.0002 | 191 | 33.3 | 234 | 3.2 | 238 | 1.3 | 98 |
| 11 | 133 | 1062 | 0.13 | 0.0513 | 0.0007 | 0.2584 | 0.0036 | 0.0365 | 0.0002 | 254 | 31.5 | 233 | 2.9 | 231 | 1.3 | 99 |
| 12 | 262 | 1853 | 0.14 | 0.0505 | 0.0006 | 0.2666 | 0.0033 | 0.0382 | 0.0002 | 217 | 25.9 | 240 | 2.7 | 242 | 1.2 | 99 |
| 13 | 67.1 | 732 | 0.09 | 0.0508 | 0.0009 | 0.2581 | 0.0046 | 0.0368 | 0.0002 | 232 | 71.3 | 233 | 3.7 | 233 | 1.4 | 99 |
| 15 | 209 | 686 | 0.30 | 0.0515 | 0.0007 | 0.2683 | 0.0042 | 0.0377 | 0.0003 | 265 | 31.5 | 241 | 3.4 | 239 | 1.9 | 98 |
| 16 | 117 | 876 | 0.13 | 0.0515 | 0.0008 | 0.2633 | 0.0044 | 0.0370 | 0.0002 | 265 | 37.0 | 237 | 3.5 | 234 | 1.6 | 98 |
| 18 | 89.6 | 655 | 0.14 | 0.0504 | 0.0008 | 0.2602 | 0.0041 | 0.0374 | 0.0003 | 217 | 38.9 | 235 | 3.3 | 237 | 1.7 | 99 |
| 20 | 117 | 860 | 0.14 | 0.0504 | 0.0007 | 0.2652 | 0.0040 | 0.0381 | 0.0002 | 213 | 33.3 | 239 | 3.2 | 241 | 1.5 | 99 |
| 粗粒似斑状钾长花岗岩（SK2-1） | | | | | | | | | | | | | | | |  |
| 3 | 1079 | 3036 | 0.36 | 0.0514 | 0.0005 | 0.2628 | 0.0029 | 0.0370 | 0.0002 | 261 | 24.1 | 237 | 2.3 | 234 | 1.4 | 98 |
| 5 | 203 | 2221 | 0.09 | 0.0506 | 0.0006 | 0.2643 | 0.0031 | 0.0379 | 0.0002 | 220 | 30.5 | 238 | 2.5 | 240 | 1.3 | 99 |
| 6 | 113 | 537 | 0.21 | 0.0510 | 0.0008 | 0.2646 | 0.0041 | 0.0376 | 0.0003 | 243 | 37.0 | 238 | 3.3 | 238 | 1.6 | 99 |
| 9 | 132 | 1871 | 0.07 | 0.0514 | 0.0006 | 0.2784 | 0.0038 | 0.0392 | 0.0003 | 261 | 27.8 | 249 | 3.0 | 248 | 1.7 | 99 |
| 10 | 269 | 2639 | 0.10 | 0.0508 | 0.0006 | 0.2669 | 0.0033 | 0.0381 | 0.0002 | 232 | 25.9 | 240 | 2.7 | 241 | 1.4 | 99 |
| 12 | 495 | 1688 | 0.29 | 0.0521 | 0.0006 | 0.2722 | 0.0033 | 0.0379 | 0.0002 | 287 | 30.6 | 244 | 2.6 | 240 | 1.2 | 99 |
| 13 | 123 | 718 | 0.17 | 0.0513 | 0.0008 | 0.2670 | 0.0041 | 0.0377 | 0.0002 | 254 | 39.8 | 240 | 3.3 | 239 | 1.3 | 97 |
| 14 | 78.2 | 654 | 0.12 | 0.0516 | 0.0008 | 0.2653 | 0.0048 | 0.0372 | 0.0003 | 265 | 37.0 | 239 | 3.8 | 236 | 1.8 | 98 |
| 15 | 278 | 1808 | 0.15 | 0.0512 | 0.0007 | 0.2785 | 0.0035 | 0.0394 | 0.0002 | 250 | 29.6 | 249 | 2.8 | 249 | 1.4 | 99 |
| 16 | 280 | 2816 | 0.10 | 0.0515 | 0.0006 | 0.2776 | 0.0037 | 0.0390 | 0.0003 | 261 | 32.4 | 249 | 3.0 | 247 | 1.7 | 99 |
| 17 | 1223 | 2630 | 0.47 | 0.0518 | 0.0007 | 0.2637 | 0.0038 | 0.0369 | 0.0003 | 276 | 31.5 | 238 | 3.0 | 234 | 2.0 | 98 |
| 18 | 106 | 1943 | 0.05 | 0.0513 | 0.0006 | 0.2734 | 0.0034 | 0.0386 | 0.0003 | 254 | 23.1 | 245 | 2.7 | 244 | 1.6 | 99 |
| 20 | 246 | 796 | 0.31 | 0.0507 | 0.0008 | 0.2617 | 0.0043 | 0.0374 | 0.0002 | 228 | 37.0 | 236 | 3.5 | 236 | 1.5 | 99 |
| 中粒二长岩（SK3-1） | | | | | | | | | | | | | | | |  |
| 1 | 122 | 696 | 0.18 | 0.0500 | 0.0008 | 0.2577 | 0.0042 | 0.0373 | 0.0002 | 198 | 34.3 | 233 | 3.4 | 236 | 1.4 | 98 |
| 2 | 76.5 | 678 | 0.11 | 0.0503 | 0.0008 | 0.2625 | 0.0044 | 0.0378 | 0.0002 | 209 | 41.7 | 237 | 3.6 | 239 | 1.5 | 98 |
| 3 | 68.3 | 606 | 0.11 | 0.0521 | 0.0010 | 0.2763 | 0.0059 | 0.0383 | 0.0003 | 300 | 44.4 | 248 | 4.7 | 243 | 1.7 | 97 |
| 4 | 52.4 | 625 | 0.08 | 0.0493 | 0.0008 | 0.2559 | 0.0042 | 0.0376 | 0.0002 | 161 | 37.0 | 231 | 3.4 | 238 | 1.5 | 97 |
| 5 | 152 | 878 | 0.17 | 0.0506 | 0.0008 | 0.2627 | 0.0042 | 0.0377 | 0.0002 | 220 | 34.3 | 237 | 3.4 | 238 | 1.5 | 99 |
| 7 | 153 | 740 | 0.21 | 0.0506 | 0.0009 | 0.2618 | 0.0046 | 0.0375 | 0.0003 | 233 | 40.7 | 236 | 3.7 | 237 | 1.6 | 98 |
| 8 | 72.6 | 832 | 0.09 | 0.0500 | 0.0008 | 0.2606 | 0.0042 | 0.0378 | 0.0003 | 195 | 38.9 | 235 | 3.4 | 239 | 1.8 | 99 |
| 9 | 120 | 1027 | 0.12 | 0.0507 | 0.0007 | 0.2644 | 0.0033 | 0.0378 | 0.0002 | 228 | 29.6 | 238 | 2.6 | 239 | 1.2 | 99 |
| 10 | 99.7 | 953 | 0.10 | 0.0505 | 0.0007 | 0.2590 | 0.0036 | 0.0371 | 0.0002 | 217 | 34.3 | 234 | 2.9 | 235 | 1.3 | 99 |
| 12 | 113 | 899 | 0.13 | 0.0505 | 0.0007 | 0.2593 | 0.0035 | 0.0372 | 0.0003 | 220 | 31.5 | 234 | 2.8 | 235 | 1.6 | 98 |
| 13 | 75.3 | 788 | 0.10 | 0.0514 | 0.0007 | 0.2638 | 0.0037 | 0.0372 | 0.0002 | 261 | 36.1 | 238 | 2.9 | 235 | 1.4 | 97 |
| 14 | 70.6 | 665 | 0.11 | 0.0497 | 0.0008 | 0.2562 | 0.0044 | 0.0374 | 0.0002 | 189 | 38.9 | 232 | 3.5 | 236 | 1.5 | 99 |
| 15 | 105 | 862 | 0.12 | 0.0511 | 0.0007 | 0.2688 | 0.0039 | 0.0381 | 0.0002 | 256 | 33.3 | 242 | 3.2 | 241 | 1.5 | 98 |
| 16 | 87.6 | 836 | 0.10 | 0.0520 | 0.0008 | 0.2723 | 0.0040 | 0.0379 | 0.0002 | 287 | 33.3 | 245 | 3.2 | 240 | 1.4 | 99 |
| 17 | 100 | 729 | 0.14 | 0.0511 | 0.0008 | 0.2666 | 0.0044 | 0.0378 | 0.0003 | 256 | 35.2 | 240 | 3.5 | 239 | 1.9 | 99 |
| 18 | 427 | 925 | 0.46 | 0.0506 | 0.0007 | 0.2633 | 0.0038 | 0.0377 | 0.0002 | 220 | 33.3 | 237 | 3.0 | 239 | 1.6 | 99 |
| 19 | 121 | 1116 | 0.11 | 0.0506 | 0.0007 | 0.2640 | 0.0040 | 0.0377 | 0.0003 | 233 | 29.6 | 238 | 3.2 | 239 | 1.7 | 99 |

附表2坪田侵入岩主量元素(%)、微量和稀土元素(10-6)分析结果

Table2 Major elements(%), trace and REE elements(10-6) data of the Pingtian intrusive rocks

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 样品 | SK1-1 | SK1-2 | SK1-3 | SK1-4 | SK1-5 | SK2-1 | SK2-2 | SK2-3 | SK2-4 | SK2-5 | SK3-1 | SK3-2 | SK3-3 | SK3-4 | SK3-5 |
| 岩性 | 粗粒似斑状黑云母花岗岩 | | | | | 粗粒似斑状钾长花岗岩 | | | | | 中粒二长岩 | | | | |
| SiO2 | 70.06 | 69.59 | 68.23 | 67.56 | 69.49 | 61.45 | 62.38 | 63.81 | 60.45 | 62.85 | 58.76 | 57.89 | 56.71 | 57.81 | 59.94 |
| Fe2O3 | 4.45 | 4.02 | 3.52 | 2.67 | 4.48 | 3.15 | 3.27 | 3.84 | 3.89 | 3.86 | 4.36 | 5.48 | 5.99 | 5.56 | 4.87 |
| Al2O3 | 13.53 | 14.15 | 14.54 | 14.86 | 14.06 | 18.11 | 17.81 | 17.38 | 18.67 | 17.89 | 18.16 | 18.27 | 18.96 | 17.62 | 18.39 |
| CaO | 2.27 | 2.15 | 1.43 | 1.53 | 2.26 | 1.27 | 1.37 | 0.66 | 1.48 | 0.68 | 3.71 | 3.45 | 3.19 | 5.25 | 2.36 |
| MgO | 1.25 | 1.11 | 0.95 | 0.70 | 1.24 | 0.81 | 0.82 | 0.94 | 1.00 | 0.87 | 1.26 | 1.58 | 1.68 | 1.57 | 1.40 |
| K2O | 3.45 | 4.04 | 5.24 | 6.55 | 3.09 | 8.18 | 6.59 | 5.80 | 5.73 | 4.93 | 4.80 | 3.66 | 3.72 | 4.06 | 3.42 |
| Na2O | 2.77 | 2.89 | 2.91 | 3.25 | 3.06 | 4.11 | 4.80 | 4.83 | 5.60 | 5.58 | 5.45 | 5.86 | 6.25 | 5.33 | 6.63 |
| MnO | 0.06 | 0.06 | 0.04 | 0.03 | 0.06 | 0.04 | 0.04 | 0.06 | 0.05 | 0.05 | 0.07 | 0.07 | 0.06 | 0.06 | 0.05 |
| TiO2 | 0.70 | 0.65 | 0.54 | 0.42 | 0.71 | 0.56 | 0.52 | 0.63 | 0.64 | 0.70 | 0.75 | 0.70 | 1.03 | 0.85 | 0.65 |
| P2O5 | 0.35 | 0.33 | 0.28 | 0.24 | 0.34 | 0.29 | 0.28 | 0.36 | 0.37 | 0.39 | 0.29 | 0.37 | 0.45 | 0.37 | 0.37 |
| LOI | 0.76 | 0.69 | 1.94 | 1.76 | 0.99 | 1.64 | 1.78 | 1.31 | 1.78 | 1.75 | 1.91 | 1.84 | 1.61 | 1.09 | 1.49 |
| Total | 99.66 | 99.66 | 99.63 | 99.58 | 99.78 | 99.61 | 99.65 | 99.61 | 99.66 | 99.55 | 99.51 | 99.17 | 99.65 | 99.56 | 99.56 |
| Na2O+K2O | 6.22 | 6.93 | 8.16 | 9.80 | 6.15 | 12.30 | 11.39 | 10.62 | 11.34 | 10.51 | 10.25 | 9.53 | 9.97 | 9.39 | 10.06 |
| A/CNK | 1.09 | 1.08 | 1.11 | 0.97 | 1.12 | 1.01 | 1.02 | 1.13 | 1.03 | 1.13 | 0.87 | 0.92 | 0.94 | 0.78 | 0.97 |
| Mg# | 36 | 35 | 35 | 34 | 35 | 34 | 33 | 33 | 34 | 31 | 36 | 36 | 36 | 36 | 36 |
| La | 99.4 | 90.5 | 76.2 | 57.8 | 99.2 | 71.5 | 71.8 | 89.9 | 88.2 | 74 | 119 | 108 | 131 | 113 | 108 |
| Ce | 188 | 167 | 144 | 117 | 200 | 143 | 149 | 190 | 176 | 216 | 223 | 211 | 256 | 215 | 216 |
| Pr | 20.7 | 19 | 16 | 13.1 | 21.8 | 15.6 | 16.3 | 19.5 | 19.5 | 17.6 | 24.2 | 23.1 | 27.4 | 23.5 | 22.5 |
| Nd | 73.2 | 65.3 | 54.9 | 44.1 | 73 | 52.2 | 55.3 | 67.2 | 68.1 | 59.1 | 83.1 | 80.9 | 95.5 | 80.5 | 77.3 |
| Sm | 12.6 | 11.5 | 9.9 | 7.94 | 13.4 | 9.78 | 10.4 | 12.5 | 11.7 | 11.1 | 13.3 | 13.4 | 15.7 | 13.2 | 12.6 |
| Eu | 1.06 | 1.09 | 1.18 | 1.46 | 1.13 | 1.32 | 1.33 | 1.28 | 1.35 | 1.17 | 2.12 | 1.98 | 2.23 | 1.99 | 1.58 |
| Gd | 9.5 | 8.43 | 7.2 | 6.05 | 9.99 | 7.33 | 7.78 | 9.67 | 9.02 | 8.68 | 9.64 | 9.79 | 11.8 | 9.78 | 9.63 |
| Tb | 1.26 | 1.15 | 0.985 | 0.934 | 1.37 | 1.03 | 1.14 | 1.33 | 1.25 | 1.26 | 1.34 | 1.35 | 1.57 | 1.34 | 1.33 |
| Dy | 6.14 | 5.37 | 4.66 | 3.97 | 6.34 | 4.63 | 5.47 | 6.23 | 5.93 | 6.13 | 5.6 | 5.99 | 7.01 | 5.87 | 6.24 |
| Ho | 0.993 | 0.896 | 0.762 | 0.747 | 1.06 | 0.794 | 0.91 | 1.04 | 0.993 | 1.05 | 1.04 | 1.04 | 1.21 | 1 | 1.1 |
| Er | 2.91 | 2.6 | 2.29 | 2.01 | 3.1 | 2.34 | 2.62 | 3.07 | 2.94 | 3.13 | 2.83 | 2.96 | 3.52 | 2.96 | 3.19 |
| Tm | 0.347 | 0.329 | 0.266 | 0.332 | 0.386 | 0.285 | 0.319 | 0.37 | 0.356 | 0.377 | 0.409 | 0.355 | 0.415 | 0.361 | 0.405 |
| Yb | 2.32 | 2.28 | 1.81 | 1.65 | 2.58 | 1.99 | 2.21 | 2.58 | 2.47 | 2.68 | 2.38 | 2.54 | 2.96 | 2.5 | 2.9 |
| Lu | 0.327 | 0.313 | 0.252 | 0.335 | 0.38 | 0.272 | 0.308 | 0.367 | 0.341 | 0.368 | 0.402 | 0.378 | 0.423 | 0.371 | 0.413 |
| Y | 33.6 | 30.5 | 26 | 19.9 | 31.4 | 24.2 | 28.8 | 31.9 | 29.9 | 31.4 | 29 | 30.6 | 36.4 | 30.3 | 32.8 |
| Li | 86.3 | 69.2 | 69.5 | 28.3 | 88.4 | 42.4 | 46.4 | 57.7 | 51.9 | 46.7 | 49.4 | 57.9 | 63 | 60.8 | 48.2 |
| Be | 5.82 | 5.59 | 4.42 | 3.14 | 6.47 | 4.89 | 8.77 | 7.94 | 7.75 | 9.47 | 4 | 4.29 | 4.83 | 6.34 | 3.98 |
| Sc | 9.65 | 9.71 | 9.07 | 8.85 | 10.3 | 10.2 | 11.1 | 13 | 12.3 | 13.2 | 12.5 | 14.9 | 15.1 | 13.2 | 14.3 |
| Ti | 4217 | 3873 | 3261 | 2504 | 4255 | 3384 | 3109 | 3807 | 3862 | 4206 | 4401 | 4105 | 5854 | 4898 | 3847 |
| V | 58.2 | 52.1 | 46.3 | 32.6 | 52.4 | 30.8 | 33.9 | 40 | 38.6 | 41.6 | 56.9 | 68.1 | 89.6 | 78.6 | 62.2 |
| Ni | 6.9 | 6.11 | 5.06 | 7.03 | 6.79 | 3.51 | 3.77 | 5.2 | 4.52 | 4.59 | 12 | 11.4 | 12.4 | 11.5 | 11.3 |
| Cu | 19.5 | 10.1 | 8.24 | 13.6 | 13.7 | 4.64 | 5.09 | 4.91 | 4.59 | 6.87 | 6.83 | 4.04 | 5.62 | 4.99 | 3.97 |
| Zn | 95.8 | 86.7 | 77 | 64.8 | 88 | 64.1 | 66.7 | 64.3 | 84.6 | 95.6 | 77 | 77.8 | 85.3 | 78.8 | 78.4 |
| Co | 7.91 | 7.36 | 6.24 | 5.18 | 7.65 | 5.73 | 5.84 | 6.39 | 6.91 | 6.93 | 8.67 | 9.88 | 10.6 | 9.78 | 10.4 |
| Ga | 23.9 | 23.6 | 21.7 | 18.3 | 23.8 | 22.4 | 22.6 | 24.2 | 25.1 | 25 | 20.3 | 22.7 | 24.8 | 23.1 | 22 |
| Rb | 278 | 281 | 280 | 266 | 247 | 409 | 316 | 311 | 277 | 263 | 170 | 144 | 167 | 170 | 120 |
| Sr | 185 | 194 | 215 | 182 | 232 | 167 | 168 | 138 | 159 | 145 | 335 | 345 | 310 | 350 | 346 |
| Zr | 326 | 313 | 266 | 193 | 335 | 255 | 253 | 328 | 319 | 367 | 308 | 372 | 430 | 376 | 400 |
| Nb | 28.3 | 26.1 | 21.2 | 15.1 | 26.7 | 21.7 | 24 | 29.1 | 25.9 | 30.8 | 20.8 | 21.2 | 26.8 | 23.8 | 18.1 |
| Mo | 1.9 | 1.82 | 0.936 | 0.261 | 1.78 | 1.1 | 0.395 | 0.255 | 1.61 | 0.313 | 0.85 | 0.157 | 0.437 | 0.282 | 0.203 |
| Cd | 0.143 | 0.14 | 0.128 | 0.297 | 0.145 | 0.0696 | 0.12 | 0.304 | 0.165 | 0.132 | 0.234 | 0.0639 | 0.0644 | 0.0691 | 0.153 |
| In | 0.129 | 0.14 | 0.0972 | 0.244 | 0.132 | 0.0775 | 0.0973 | 0.1 | 0.124 | 0.115 | 0.167 | 0.0995 | 0.111 | 0.102 | 0.098 |
| Cs | 18.5 | 18.8 | 7.92 | 6.69 | 23.1 | 10.9 | 7.49 | 7.89 | 8.49 | 6.85 | 10.8 | 10.7 | 10.8 | 10.5 | 9.17 |
| Ba | 422 | 504 | 934 | 1330 | 328 | 1250 | 974 | 814 | 803 | 719 | 1590 | 1260 | 1160 | 1410 | 1260 |
| Hf | 7.93 | 7.23 | 6.17 | 5.22 | 8.51 | 6.44 | 6.58 | 8.5 | 8.21 | 9.47 | 7.79 | 9.25 | 10.3 | 9.46 | 9.78 |
| Ta | 2.33 | 2.11 | 1.65 | 1.49 | 2.33 | 2.11 | 2.01 | 3.59 | 2.47 | 2.81 | 1.63 | 1.97 | 2.35 | 1.94 | 1.79 |
| W | 3.32 | 1.84 | 1.34 | 1.14 | 1.69 | 3.15 | 3.75 | 3.94 | 3.42 | 5.09 | 3.75 | 2.67 | 3.45 | 3.62 | 12.6 |
| Tl | 1.64 | 1.65 | 1.53 | 2.09 | 1.74 | 3.31 | 2.48 | 2.4 | 2.24 | 2.03 | 1.24 | 1 | 1.15 | 1.16 | 0.832 |
| Bi | 1.26 | 0.618 | 0.403 | 0.6 | 0.612 | 0.865 | 0.883 | 0.634 | 0.467 | 1.17 | 0.493 | 0.295 | 0.486 | 0.292 | 0.273 |
| Pb | 39.3 | 38 | 48.4 | 61.4 | 36.2 | 86.4 | 63.5 | 64.8 | 43.5 | 79.4 | 63.6 | 48.1 | 51.6 | 55.4 | 53.8 |
| Th | 52.4 | 45.9 | 39.5 | 31.6 | 55.5 | 40.5 | 41.9 | 53.2 | 51.9 | 58.9 | 40.1 | 50.3 | 57.3 | 46.7 | 53.5 |
| U | 7.44 | 10.2 | 6.58 | 4.84 | 10.6 | 10.6 | 7.79 | 4.67 | 12 | 6.58 | 3.75 | 7.85 | 10.9 | 7.12 | 10.8 |
| R1 | 2745 | 2546 | 2181 | 1737 | 2690 | 626 | 814 | 1068 | 582 | 938 | 728 | 762 | 514 | 849 | 697 |
| R2 | 570 | 562 | 485 | 490 | 579 | 531 | 536 | 458 | 574 | 467 | 815 | 805 | 796 | 985 | 682 |
| ΣREE | 418.8 | 375.8 | 320.4 | 257.4 | 433.7 | 312.1 | 324.9 | 405.0 | 388.2 | 402.6 | 488.4 | 462.8 | 556.7 | 471.4 | 463.2 |
| LREE/HREE | 16.6 | 16.6 | 16.6 | 15.1 | 16.2 | 15.7 | 14.7 | 15.4 | 15.7 | 16.0 | 19.7 | 18.0 | 18.3 | 18.5 | 17.4 |
| (La/Yb)N | 30.73 | 28.47 | 30.20 | 25.13 | 27.58 | 25.77 | 23.30 | 24.99 | 25.61 | 19.81 | 35.86 | 30.50 | 31.75 | 32.42 | 26.71 |
| δEu | 0.28 | 0.32 | 0.41 | 0.62 | 0.29 | 0.46 | 0.43 | 0.34 | 0.39 | 0.35 | 0.55 | 0.50 | 0.48 | 0.51 | 0.42 |
| δCe | 0.96 | 0.94 | 0.96 | 1.00 | 1.01 | 1.00 | 1.03 | 1.06 | 1.00 | 1.42 | 0.96 | 0.99 | 0.99 | 0.97 | 1.02 |

注：R1=4Si-11(Na+K)-2(Fe+Ti)，R为阳离子数；R2=6Ca+2Mg+Al，R为阳离子数。

附表3坪田侵入岩锆石Hf同位素分析结果

Table 3 Zircon Hf isotopic compositions of Pingtian intrusive rocks

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测点 | Age(Ma) | 176Yb/177Hf | 2σ | 176Lu/177Hf | 2σ | 176Hf/177Hf | 2σ | εHf(t) | tDM2(Ma) | *f*Lu/Hf |
| 1 | 237 | 0.030786 | 0.000045 | 0.001079 | 0.000002 | 0.282377 | 0.000007 | -9.0 | 1826 | -0.97 |
| 7 | 237 | 0.041472 | 0.000201 | 0.001464 | 0.000007 | 0.282299 | 0.000009 | -11.7 | 2001 | -0.96 |
| 9 | 237 | 0.038261 | 0.000168 | 0.001306 | 0.000003 | 0.282300 | 0.000009 | -11.7 | 1998 | -0.96 |
| 11 | 237 | 0.027309 | 0.000338 | 0.000949 | 0.000012 | 0.282252 | 0.000009 | -13.4 | 2100 | -0.97 |
| 12 | 237 | 0.041167 | 0.000692 | 0.001460 | 0.000022 | 0.282364 | 0.000009 | -9.4 | 1857 | -0.96 |
| 13 | 237 | 0.025518 | 0.000156 | 0.000870 | 0.000004 | 0.282323 | 0.000009 | -10.8 | 1942 | -0.97 |
| 15 | 237 | 0.019190 | 0.000093 | 0.000640 | 0.000003 | 0.282326 | 0.000008 | -10.7 | 1933 | -0.98 |
| 16 | 237 | 0.021043 | 0.000040 | 0.000750 | 0.000001 | 0.281561 | 0.000009 | -37.7 | 3597 | -0.98 |
| 18 | 237 | 0.037153 | 0.000130 | 0.001315 | 0.000003 | 0.282353 | 0.000009 | -9.8 | 1880 | -0.96 |
| 20 | 237 | 0.032789 | 0.000186 | 0.001114 | 0.000005 | 0.282327 | 0.000009 | -10.7 | 1937 | -0.97 |
| 3 | 240.2 | 0.058742 | 0.000135 | 0.002058 | 0.000004 | 0.282353 | 0.000008 | -9.9 | 1886 | -0.94 |
| 5 | 240.2 | 0.036612 | 0.000151 | 0.001306 | 0.000003 | 0.282353 | 0.000009 | -9.8 | 1879 | -0.96 |
| 6 | 240.2 | 0.042182 | 0.000301 | 0.001464 | 0.000014 | 0.282468 | 0.000009 | -5.7 | 1626 | -0.96 |
| 10 | 240.2 | 0.042360 | 0.000510 | 0.001499 | 0.000015 | 0.282251 | 0.000008 | -13.4 | 2107 | -0.95 |
| 13 | 240.2 | 0.048016 | 0.000372 | 0.001651 | 0.000010 | 0.282362 | 0.000010 | -9.5 | 1862 | -0.95 |
| 14 | 240.2 | 0.030648 | 0.000197 | 0.001071 | 0.000006 | 0.282290 | 0.000008 | -12.0 | 2016 | -0.97 |
| 15 | 240.2 | 0.042168 | 0.000134 | 0.001493 | 0.000002 | 0.282369 | 0.000009 | -9.2 | 1846 | -0.96 |
| 18 | 240.2 | 0.039701 | 0.000090 | 0.001484 | 0.000002 | 0.282246 | 0.000009 | -13.6 | 2117 | -0.96 |
| 19 | 240.2 | 0.039316 | 0.000256 | 0.001424 | 0.000007 | 0.282284 | 0.000009 | -12.2 | 2033 | -0.96 |
| 20 | 240.2 | 0.034139 | 0.000327 | 0.001167 | 0.000012 | 0.282488 | 0.000009 | -5.0 | 1578 | -0.96 |
| 2 | 238.1 | 0.023408 | 0.000236 | 0.000816 | 0.000008 | 0.282369 | 0.000009 | -9.2 | 1839 | -0.98 |
| 4 | 238.1 | 0.026917 | 0.000304 | 0.000934 | 0.000009 | 0.282349 | 0.000009 | -9.9 | 1885 | -0.97 |
| 5 | 238.1 | 0.025544 | 0.000251 | 0.000895 | 0.000007 | 0.282212 | 0.000008 | -14.7 | 2186 | -0.97 |
| 10 | 238.1 | 0.030627 | 0.000226 | 0.001029 | 0.000006 | 0.282331 | 0.000009 | -10.5 | 1927 | -0.97 |
| 12 | 238.1 | 0.026354 | 0.000346 | 0.000893 | 0.000011 | 0.281897 | 0.000007 | -25.9 | 2874 | -0.97 |
| 15 | 238.1 | 0.038783 | 0.000061 | 0.001411 | 0.000001 | 0.282425 | 0.000011 | -7.3 | 1722 | -0.96 |
| 16 | 238.1 | 0.032371 | 0.000173 | 0.001146 | 0.000004 | 0.282356 | 0.000010 | -9.7 | 1871 | -0.97 |
| 17 | 238.1 | 0.038505 | 0.000093 | 0.001373 | 0.000004 | 0.282311 | 0.000009 | -11.3 | 1974 | -0.96 |
| 18 | 238.1 | 0.049295 | 0.000050 | 0.001730 | 0.000005 | 0.282364 | 0.000009 | -9.5 | 1860 | -0.95 |
| 19 | 238.1 | 0.022251 | 0.000364 | 0.000829 | 0.000011 | 0.281797 | 0.000014 | -29.4 | 3091 | -0.98 |