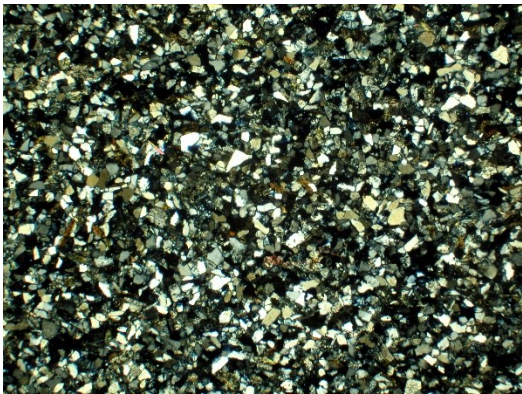




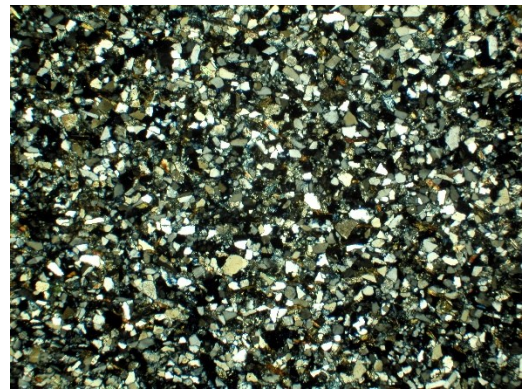
## **ALLEGATO IV**

### **RISULTATI ANALISI MICROSTRUTTURALE**

## Campione 5 - 2 foto



(a)



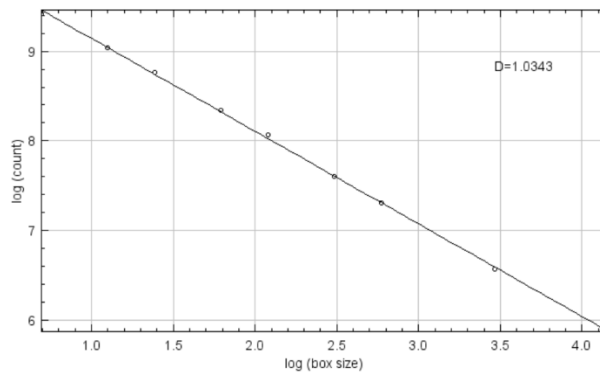
(b)

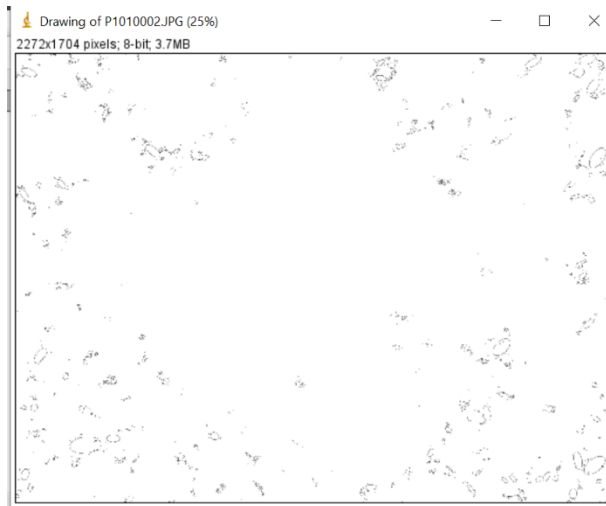
## Immagine (a)

### Valori di saturazione del colore (0-2)

| File  | Edit   | Font     | Results |     |         |       |          |          |            |          |  |
|-------|--------|----------|---------|-----|---------|-------|----------|----------|------------|----------|--|
| Label | Area   | Mean     | Min     | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |
| 2121  | 2.000  | 255      | 255     | 255 | 2.236   | 100   | 1322.000 | 1700.000 | 153.435    | 1.000    |  |
| 2122  | 14.000 | 255      | 255     | 255 | 9.849   | 100   | 1466.000 | 1700.000 | 156.038    | 4.000    |  |
| 2123  | 1.000  | 255      | 255     | 255 | 1.414   | 100   | 413.000  | 1701.000 | 135.000    | 1.000    |  |
| 2124  | 10.000 | 255      | 255     | 255 | 6.325   | 100   | 2218.000 | 1704.000 | 18.435     | 2.846    |  |
| 2125  | 3.000  | 255      | 255     | 255 | 3.162   | 100   | 2245.000 | 1701.000 | 161.565    | 1.000    |  |
| 2126  | 6.000  | 255      | 255     | 255 | 3.606   | 100   | 416.000  | 1702.000 | 146.310    | 2.000    |  |
| 2127  | 3.000  | 255      | 255     | 255 | 2.828   | 100   | 581.000  | 1704.000 | 45.000     | 2.000    |  |
| 2128  | 4.000  | 255      | 255     | 255 | 2.828   | 100   | 584.000  | 1702.000 | 135.000    | 2.000    |  |
| 2129  | 1.000  | 255      | 255     | 255 | 1.414   | 100   | 1927.000 | 1702.000 | 135.000    | 1.000    |  |
| 2130  | 2.000  | 255      | 255     | 255 | 2.236   | 100   | 155.000  | 1703.000 | 153.435    | 1.000    |  |
| 2131  | 1.000  | 255      | 255     | 255 | 1.414   | 100   | 433.000  | 1703.000 | 135.000    | 1.000    |  |
| 2132  | 1.000  | 255      | 255     | 255 | 1.414   | 100   | 435.000  | 1703.000 | 135.000    | 1.000    |  |
| 2133  | 1.000  | 255      | 255     | 255 | 1.414   | 100   | 1320.000 | 1703.000 | 135.000    | 1.000    |  |
| 2134  | 1.000  | 255      | 255     | 255 | 1.414   | 100   | 2213.000 | 1703.000 | 135.000    | 1.000    |  |
| 2135  | Mean   | 30.805   | 255     | 255 | 5.037   | 100   | 1110.684 | 870.381  | 121.280    | 2.798    |  |
| 2136  | SD     | 213.098  | 0       | 0   | 10.029  | 0     | 760.813  | 572.541  | 41.334     | 5.593    |  |
| 2137  | Min    | 1.000    | 255     | 255 | 1.414   | 100   | 0.000    | 0.000    | 1.975      | 1.000    |  |
| 2138  | Max    | 5863.000 | 255     | 255 | 142.042 | 100   | 2271.000 | 1704.000 | 176.055    | 91.082   |  |

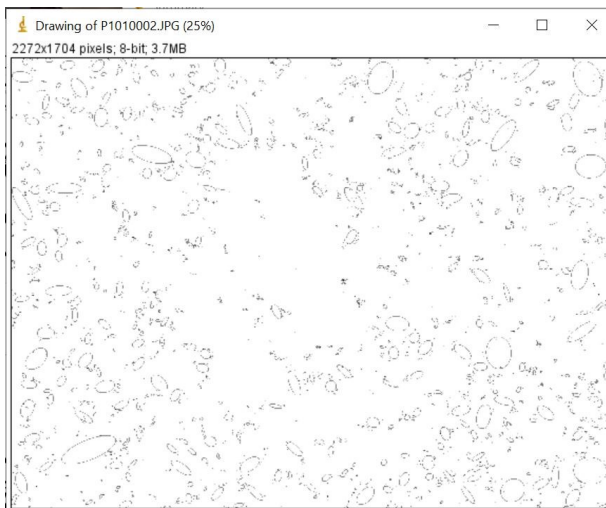
| File         | Edit  | Font       | Summary      |       |      |       |       |       |       |          |         |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|----------|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFeret |
| P1010002.JPG | 2134  | 65737      | 30.805       | 1.698 | 255  | NaN   | NaN   | NaN   | 5.037 | 1110.684 | 870.381 | 121.280    | 2.798    |





In cui osserviamo una percentuale di porosità pari a 1,698% e un D0 pari a 1,0343.

### Valori di saturazione del colore (0-10)

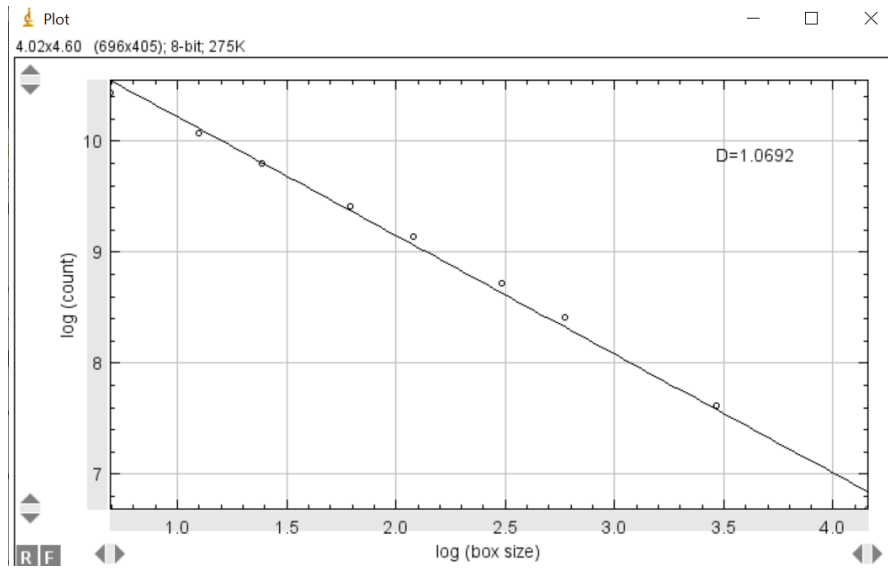


Results

| File  | Edit   | Font      | Results |     |        |         |          |          |            |          |         |
|-------|--------|-----------|---------|-----|--------|---------|----------|----------|------------|----------|---------|
| Label | Area   | Mean      | Min     | Max | Feret  | %Area   | FeretX   | FeretY   | FeretAngle | MinFeret |         |
| 3339  | 20.000 | 255       | 255     | 255 | 8.485  | 100     | 1423.000 | 1698.000 | 135.000    | 5.657    |         |
| 3340  | 2.000  | 255       | 255     | 255 | 2.236  | 100     | 1483.000 | 1698.000 | 116.565    | 1.000    |         |
| 3341  | 32.000 | 255       | 255     | 255 | 11.180 | 100     | 815.000  | 1699.000 | 153.435    | 4.932    |         |
| 3342  | 48.000 | 255       | 255     | 255 | 18.111 | 100     | 1258.000 | 1702.000 | 173.660    | 5.000    |         |
| 3343  | 10.000 | 255       | 255     | 255 | 6.403  | 100     | 2268.000 | 1699.000 | 128.660    | 2.828    |         |
| 3344  | 1.000  | 255       | 255     | 255 | 1.414  | 100     | 564.000  | 1702.000 | 135.000    | 1.000    |         |
| 3345  | 4.000  | 255       | 255     | 255 | 3.162  | 100     | 790.000  | 1703.000 | 161.565    | 2.000    |         |
| 3346  | 1.000  | 255       | 255     | 255 | 1.414  | 100     | 32.000   | 1703.000 | 135.000    | 1.000    |         |
| 3347  | 1.000  | 255       | 255     | 255 | 1.414  | 100     | 144.000  | 1703.000 | 135.000    | 1.000    |         |
| 3348  | 3.000  | 255       | 255     | 255 | 3.162  | 100     | 560.000  | 1703.000 | 161.565    | 1.000    |         |
| 3349  | 1.000  | 255       | 255     | 255 | 1.414  | 100     | 1021.000 | 1703.000 | 135.000    | 1.000    |         |
| 3350  | 2.000  | 255       | 255     | 255 | 2.236  | 100     | 1255.000 | 1703.000 | 153.435    | 1.000    |         |
| 3351  | 2.000  | 255       | 255     | 255 | 2.236  | 100     | 1434.000 | 1703.000 | 153.435    | 1.000    |         |
| 3352  | 1.000  | 255       | 255     | 255 | 1.414  | 100     | 1446.000 | 1703.000 | 135.000    | 1.000    |         |
| 3353  | 1.000  | 255       | 255     | 255 | 1.414  | 100     | 1987.000 | 1703.000 | 135.000    | 1.000    |         |
| 3354  | 1.000  | 255       | 255     | 255 | 1.414  | 100     | 1989.000 | 1703.000 | 135.000    | 1.000    |         |
| 3355  | Mean   | 115.216   | 255     | 255 | 255    | 9.982   | 100      | 1142.333 | 836.486    | 116.334  | 5.256   |
| 3356  | SD     | 598.626   | 0       | 0   | 0      | 19.885  | 0        | 648.507  | 507.965    | 42.882   | 11.595  |
| 3357  | Min    | 1.000     | 255     | 255 | 255    | 1.414   | 100      | 0.000    | 0.000      | 3.900    | 1.000   |
| 3358  | Max    | 12921.000 | 255     | 255 | 255    | 307.709 | 100      | 2271.000 | 1704.000   | 179.145  | 165.000 |

Summary

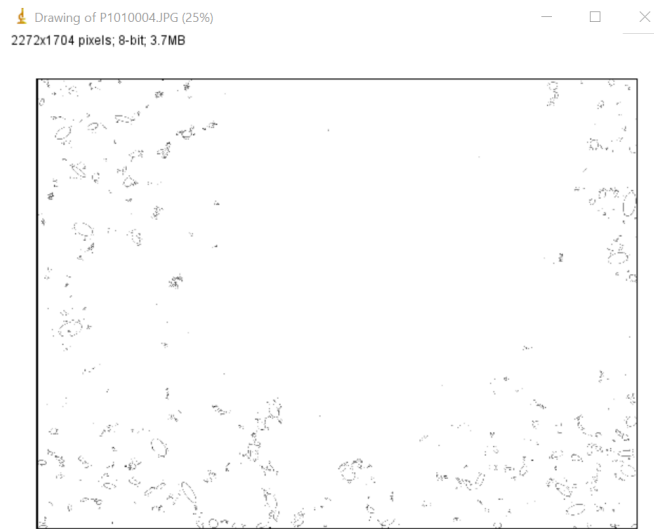
| File         | Edit  | Font       | Results      |       |      |       |       |       |       |          |         |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|----------|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFeret |
| P1010002.JPG | 3354  | 386435     | 115.216      | 9.982 | 255  | NaN   | NaN   | NaN   | 9.180 | 1142.333 | 836.486 | 116.334    | 5.256    |



In cui osserviamo una percentuale di porosità pari a 9,982% e un  $D_0$  pari a 1,0692.

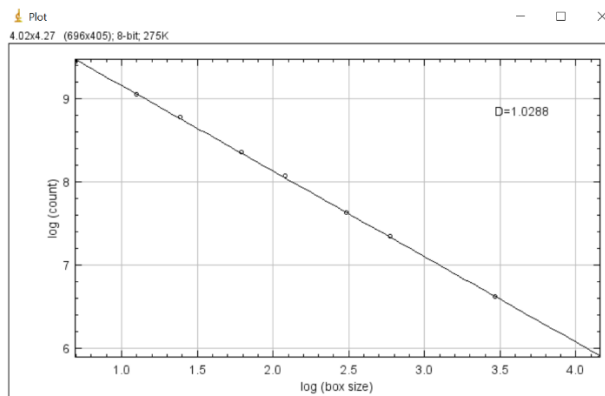
### Immagine (b)

#### Valori di saturazione del colore (0-2)



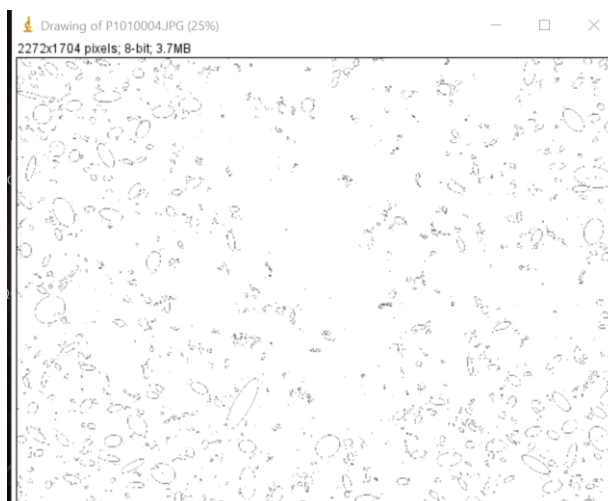
| Results   |          |      |         |     |         |       |          |          |            |          |  |  |
|-----------|----------|------|---------|-----|---------|-------|----------|----------|------------|----------|--|--|
| File      | Edit     | Font | Results |     |         |       |          |          |            |          |  |  |
| Label     | Area     | Mean | Min     | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |  |
| 1933      | 9.000    | 255  | 255     | 255 | 6.403   | 100   | 972.000  | 1701.000 | 51.340     | 3.800    |  |  |
| 1934      | 4.000    | 255  | 255     | 255 | 3.606   | 100   | 1083.000 | 1699.000 | 56.310     | 2.000    |  |  |
| 1935      | 1.000    | 255  | 255     | 255 | 1.414   | 100   | 2189.000 | 1696.000 | 135.000    | 1.000    |  |  |
| 1936      | 1.000    | 255  | 255     | 255 | 1.414   | 100   | 963.000  | 1697.000 | 135.000    | 1.000    |  |  |
| 1937      | 1.000    | 255  | 255     | 255 | 1.414   | 100   | 985.000  | 1697.000 | 135.000    | 1.000    |  |  |
| 1938      | 37.000   | 255  | 255     | 255 | 11.180  | 100   | 2033.000 | 1698.000 | 153.435    | 6.600    |  |  |
| 1939      | 2.000    | 255  | 255     | 255 | 2.236   | 100   | 2181.000 | 1698.000 | 153.435    | 1.000    |  |  |
| 1940      | 2.000    | 255  | 255     | 255 | 2.236   | 100   | 2184.000 | 1698.000 | 153.435    | 1.000    |  |  |
| 1941      | 1.000    | 255  | 255     | 255 | 1.414   | 100   | 2189.000 | 1698.000 | 135.000    | 1.000    |  |  |
| 1942      | 28.000   | 255  | 255     | 255 | 12.166  | 100   | 2187.000 | 1702.000 | 170.538    | 6.000    |  |  |
| 1943      | 1.000    | 255  | 255     | 255 | 1.414   | 100   | 755.000  | 1699.000 | 135.000    | 1.000    |  |  |
| 1944      | 11.000   | 255  | 255     | 255 | 7.280   | 100   | 877.000  | 1704.000 | 15.945     | 4.000    |  |  |
| 1945      | 8.000    | 255  | 255     | 255 | 4.472   | 100   | 1304.000 | 1700.000 | 116.565    | 3.000    |  |  |
| 1946      | 6.000    | 255  | 255     | 255 | 4.472   | 100   | 1328.000 | 1700.000 | 116.565    | 2.000    |  |  |
| 1947      | 2.000    | 255  | 255     | 255 | 2.236   | 100   | 731.000  | 1703.000 | 153.435    | 1.000    |  |  |
| 1948      | 1.000    | 255  | 255     | 255 | 1.414   | 100   | 775.000  | 1703.000 | 135.000    | 1.000    |  |  |
| 1949      | 1.000    | 255  | 255     | 255 | 1.414   | 100   | 2136.000 | 1703.000 | 135.000    | 1.000    |  |  |
| 1950 Mean | 39.177   | 255  | 255     | 255 | 5.678   | 100   | 999.797  | 977.518  | 120.725    | 3.259    |  |  |
| 1951 SD   | 209.014  | 0    | 0       | 0   | 11.037  | 0     | 772.413  | 566.617  | 41.236     | 6.503    |  |  |
| 1952 Min  | 1.000    | 255  | 255     | 255 | 1.414   | 100   | 0.000    | 0.000    | 1.848      | 1.000    |  |  |
| 1953 Max  | 3666.000 | 255  | 255     | 255 | 145.169 | 100   | 2271.000 | 1704.000 | 176.698    | 98.872   |  |  |

| Summary      |       |            |              |       |      |       |       |       |       |         |         |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|---------|---------|------------|----------|
| File         | Edit  | Font       |              |       |      |       |       |       |       |         |         |            |          |
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX  | FeretY  | FeretAngle | MinFeret |
| P1010004.JPG | 1949  | 76355      | 39.177       | 1.972 | 255  | NaN   | NaN   | NaN   | 5.678 | 999.797 | 977.518 | 120.725    | 3.259    |



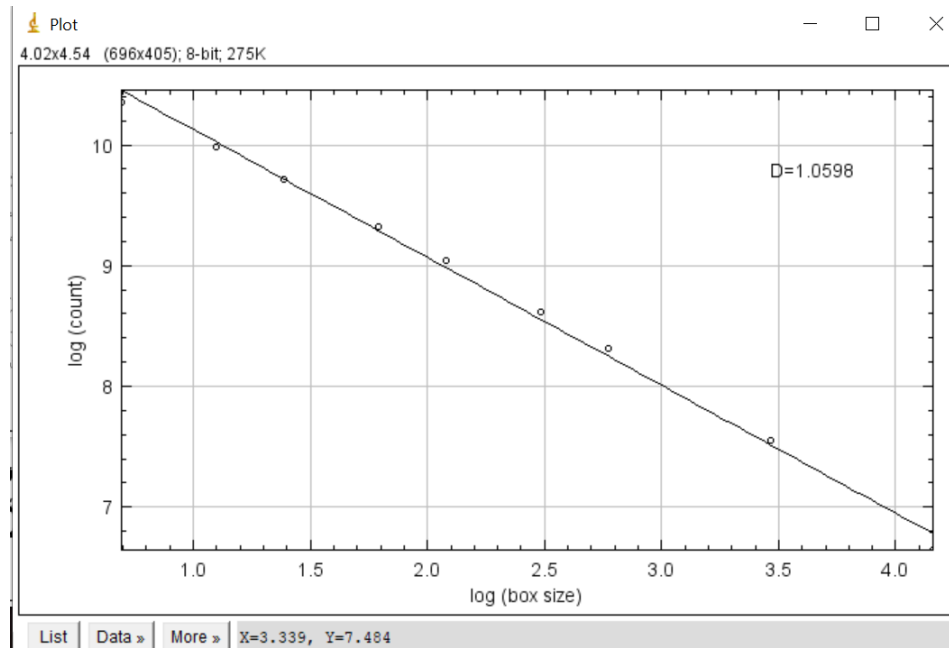
In cui osserviamo una percentuale di porosità pari a 1,972% e un D0 pari a 1,0288.

### Valori di saturazione del colore (0-10)



| Results |        |           |     |     |        |         |          |          |            |           |         |  |
|---------|--------|-----------|-----|-----|--------|---------|----------|----------|------------|-----------|---------|--|
| Label   | Area   | Mean      | Min | Max | Feret  | %Area   | FeretX   | FeretY   | FeretAngle | MinFerret |         |  |
| 3209    | 70.000 | 255       | 255 | 255 | 19.647 | 100     | 126.000  | 1700.000 | 14.744     | 8.895     |         |  |
| 3210    | 4.000  | 255       | 255 | 255 | 3.606  | 100     | 1151.000 | 1695.000 | 146.310    | 2.000     |         |  |
| 3211    | 60.000 | 255       | 255 | 255 | 13.416 | 100     | 916.000  | 1697.000 | 153.435    | 7.690     |         |  |
| 3212    | 1.000  | 255       | 255 | 255 | 1.414  | 100     | 1228.000 | 1696.000 | 135.000    | 1.000     |         |  |
| 3213    | 87.000 | 255       | 255 | 255 | 18.028 | 100     | 873.000  | 1704.000 | 19.440     | 7.000     |         |  |
| 3214    | 3.000  | 255       | 255 | 255 | 2.828  | 100     | 928.000  | 1699.000 | 45.000     | 2.000     |         |  |
| 3215    | 1.000  | 255       | 255 | 255 | 1.414  | 100     | 1585.000 | 1697.000 | 135.000    | 1.000     |         |  |
| 3216    | 2.000  | 255       | 255 | 255 | 2.236  | 100     | 1554.000 | 1698.000 | 116.565    | 1.000     |         |  |
| 3217    | 25.000 | 255       | 255 | 255 | 10.000 | 100     | 2136.000 | 1698.000 | 143.130    | 6.000     |         |  |
| 3218    | 21.000 | 255       | 255 | 255 | 8.602  | 100     | 119.000  | 1699.000 | 144.462    | 4.919     |         |  |
| 3219    | 14.000 | 255       | 255 | 255 | 5.657  | 100     | 583.000  | 1704.000 | 45.000     | 4.000     |         |  |
| 3220    | 1.000  | 255       | 255 | 255 | 1.414  | 100     | 1241.000 | 1700.000 | 135.000    | 1.000     |         |  |
| 3221    | 5.000  | 255       | 255 | 255 | 3.606  | 100     | 1840.000 | 1702.000 | 33.690     | 2.000     |         |  |
| 3222    | 5.000  | 255       | 255 | 255 | 3.606  | 100     | 1476.000 | 1704.000 | 56.310     | 2.000     |         |  |
| 3223    | 9.000  | 255       | 255 | 255 | 6.325  | 100     | 1835.000 | 1702.000 | 161.565    | 3.000     |         |  |
| 3224    | 1.000  | 255       | 255 | 255 | 1.414  | 100     | 1486.000 | 1703.000 | 135.000    | 1.000     |         |  |
| 3225    | 1.000  | 255       | 255 | 255 | 1.414  | 100     | 1833.000 | 1703.000 | 135.000    | 1.000     |         |  |
| 3226    | Mean   | 102.304   | 255 | 255 | 255    | 8.522   | 100      | 1111.853 | 863.160    | 117.299   | 5.082   |  |
| 3227    | SD     | 517.119   | 0   | 0   | 0      | 18.724  | 0        | 656.238  | 501.515    | 41.747    | 10.935  |  |
| 3228    | Min    | 1.000     | 255 | 255 | 255    | 1.414   | 100      | 0.000    | 0.000      | 2.353     | 1.000   |  |
| 3229    | Max    | 10934.000 | 255 | 255 | 255    | 296.427 | 100      | 2270.000 | 1704.000   | 177.274   | 152.735 |  |

| Summary      |       |            |              |       |      |       |       |       |       |          |         |            |           |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|-----------|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFerret |
| P1010004.JPG | 3225  | 329929     | 102.304      | 8.522 | 255  | NaN   | NaN   | NaN   | 8.822 | 1111.853 | 863.160 | 117.299    | 5.082     |



In cui osserviamo una percentuale di porosità pari a 8,522% e un D0 pari a 1,0598.

## Campione 6 - 2 foto



(a)



(b)

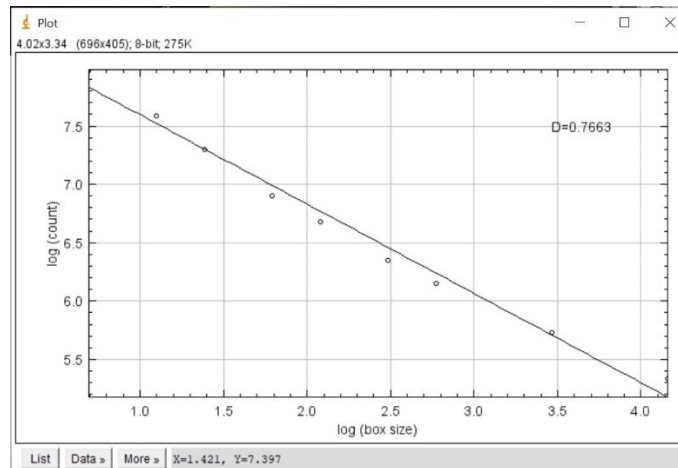
## Immagine (a)

### Valori di saturazione del colore (0-2)



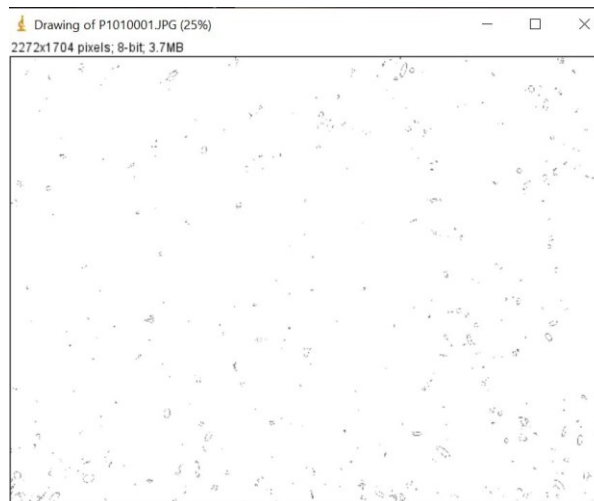
| Results |       |         |         |     |     |        |       |          |          |            |          |
|---------|-------|---------|---------|-----|-----|--------|-------|----------|----------|------------|----------|
| File    | Edit  | Font    | Results |     |     |        |       |          |          |            |          |
|         | Label | Area    | Mean    | Min | Max | Feret  | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |
| 599     |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 117.000  | 1689.000 | 135.000    | 1.000    |
| 600     |       | 4.000   | 255     | 255 | 255 | 3.606  | 100   | 167.000  | 1692.000 | 33.690     | 2.000    |
| 601     |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 626.000  | 1692.000 | 135.000    | 1.000    |
| 602     |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 159.000  | 1694.000 | 135.000    | 1.000    |
| 603     |       | 25.000  | 255     | 255 | 255 | 10.296 | 100   | 627.000  | 1703.000 | 60.945     | 6.000    |
| 604     |       | 8.000   | 255     | 255 | 255 | 5.831  | 100   | 1473.000 | 1699.000 | 120.964    | 2.530    |
| 605     |       | 3.000   | 255     | 255 | 255 | 3.162  | 100   | 1947.000 | 1699.000 | 161.565    | 1.000    |
| 606     |       | 26.000  | 255     | 255 | 255 | 10.440 | 100   | 1947.000 | 1701.000 | 163.301    | 4.000    |
| 607     |       | 4.000   | 255     | 255 | 255 | 4.243  | 100   | 1510.000 | 1701.000 | 135.000    | 2.121    |
| 608     |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 893.000  | 1702.000 | 135.000    | 1.000    |
| 609     |       | 7.000   | 255     | 255 | 255 | 6.093  | 100   | 2037.000 | 1703.000 | 170.538    | 2.000    |
| 610     |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 634.000  | 1703.000 | 135.000    | 1.000    |
| 611     |       | 2.000   | 255     | 255 | 255 | 2.236  | 100   | 901.000  | 1703.000 | 153.435    | 1.000    |
| 612     |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 1498.000 | 1703.000 | 135.000    | 1.000    |
| 613     | Mean  | 10.681  | 255     | 255 | 255 | 4.550  | 100   | 1264.211 | 1036.304 | 114.302    | 2.313    |
| 614     | SD    | 36.844  | 0       | 0   | 0   | 5.785  | 0     | 668.000  | 565.673  | 39.131     | 2.642    |
| 615     | Min   | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 0.000    | 2.000    | 11.310     | 1.000    |
| 616     | Max   | 560.000 | 255     | 255 | 255 | 50.804 | 100   | 2251.000 | 1703.000 | 171.870    | 24.488   |

| Summary      |       |            |              |       |      |       |       |       |       |          |          |            |          |  |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|----------|------------|----------|--|
| File         | Edit  | Font       |              |       |      |       |       |       |       |          |          |            |          |  |
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY   | FeretAngle | MinFeret |  |
| P1010001.JPG | 612   | 6537       | 10.681       | 0.169 | 255  | NaN   | NaN   | NaN   | 4.550 | 1264.211 | 1036.304 | 114.302    | 2.313    |  |



In cui osserviamo una percentuale di porosità pari a 0,169% e un D0 pari a 0,7663.

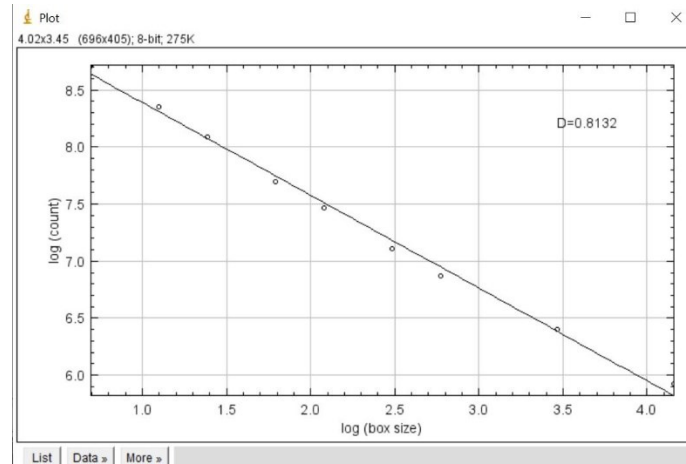
### Valori di saturazione del colore (0-10)



| Results |        |         |         |     |        |        |          |          |            |          |        |
|---------|--------|---------|---------|-----|--------|--------|----------|----------|------------|----------|--------|
| File    | Edit   | Font    | Results |     |        |        |          |          |            |          |        |
| Label   | Area   | Mean    | Min     | Max | Feret  | %Area  | FeretX   | FeretY   | FeretAngle | MinFeret |        |
| 750     | 8.000  | 255     | 255     | 255 | 5.385  | 100    | 620.000  | 1700.000 | 68.199     | 2.000    |        |
| 751     | 1.000  | 255     | 255     | 255 | 1.414  | 100    | 1018.000 | 1696.000 | 135.000    | 1.000    |        |
| 752     | 1.000  | 255     | 255     | 255 | 1.414  | 100    | 1355.000 | 1696.000 | 135.000    | 1.000    |        |
| 753     | 11.000 | 255     | 255     | 255 | 6.403  | 100    | 1500.000 | 1701.000 | 51.340     | 3.578    |        |
| 754     | 8.000  | 255     | 255     | 255 | 5.000  | 100    | 71.000   | 1701.000 | 53.130     | 3.000    |        |
| 755     | 25.000 | 255     | 255     | 255 | 9.220  | 100    | 31.000   | 1704.000 | 40.601     | 5.657    |        |
| 756     | 6.000  | 255     | 255     | 255 | 3.606  | 100    | 90.000   | 1698.000 | 123.690    | 2.000    |        |
| 757     | 49.000 | 255     | 255     | 255 | 13.000 | 100    | 1946.000 | 1699.000 | 157.380    | 5.000    |        |
| 758     | 2.000  | 255     | 255     | 255 | 2.236  | 100    | 1494.000 | 1700.000 | 116.565    | 1.000    |        |
| 759     | 5.000  | 255     | 255     | 255 | 4.472  | 100    | 1498.000 | 1700.000 | 116.565    | 2.000    |        |
| 760     | 2.000  | 255     | 255     | 255 | 2.236  | 100    | 1517.000 | 1700.000 | 116.565    | 1.000    |        |
| 761     | 3.000  | 255     | 255     | 255 | 3.162  | 100    | 893.000  | 1701.000 | 108.435    | 1.000    |        |
| 762     | 16.000 | 255     | 255     | 255 | 10.050 | 100    | 2035.000 | 1703.000 | 174.289    | 3.000    |        |
| 763     | 6.000  | 255     | 255     | 255 | 5.099  | 100    | 900.000  | 1703.000 | 168.690    | 2.000    |        |
| 764     | Mean   | 37.098  | 255     | 255 | 255    | 6.982  | 100      | 1202.062 | 970.516    | 108.544  | 3.753  |
| 765     | SD     | 109.212 | 0       | 0   | 0      | 9.528  | 0        | 678.798  | 566.523    | 40.058   | 4.938  |
| 766     | Min    | 1.000   | 255     | 255 | 255    | 1.414  | 100      | 0.000    | 0.000      | 6.843    | 1.000  |
| 767     | Max    | 990.000 | 255     | 255 | 255    | 66.068 | 100      | 2271.000 | 1704.000   | 174.289  | 31.349 |

| Summary      |       |            |              |       |      |       |       |       |       |          |         |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|----------|
| File         | Edit  | Font       | Results      |       |      |       |       |       |       |          |         |            |          |
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFeret |
| P1010001.JPG | 763   | 28306      | 37.098       | 0.731 | 255  | NaN   | NaN   | NaN   | 6.982 | 1202.062 | 970.516 | 108.544    | 3.753    |

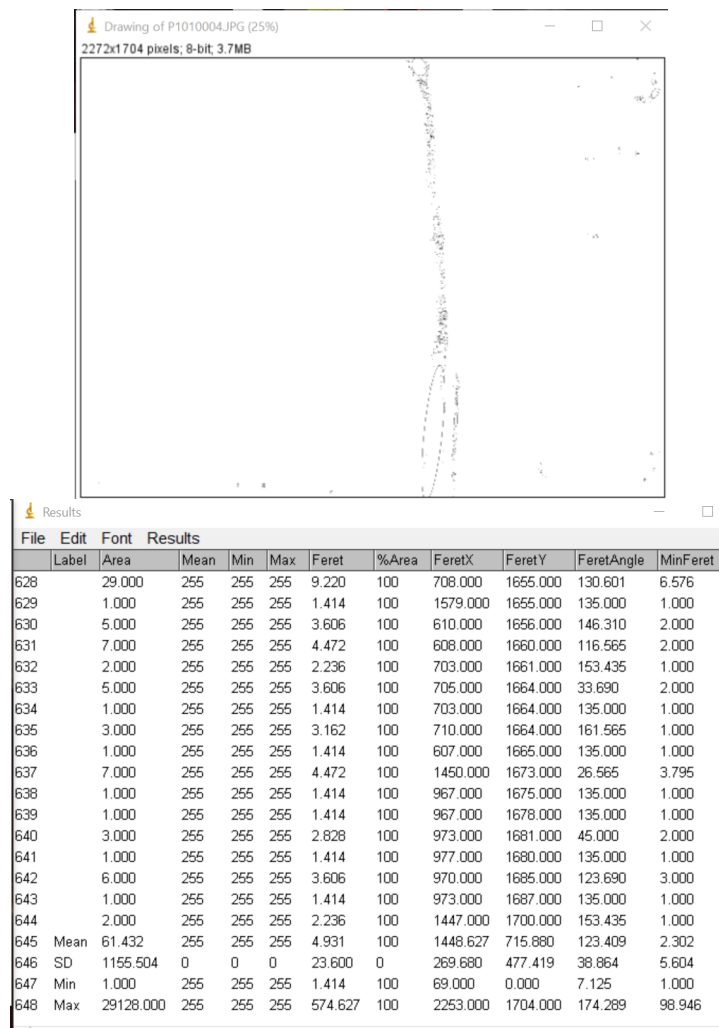




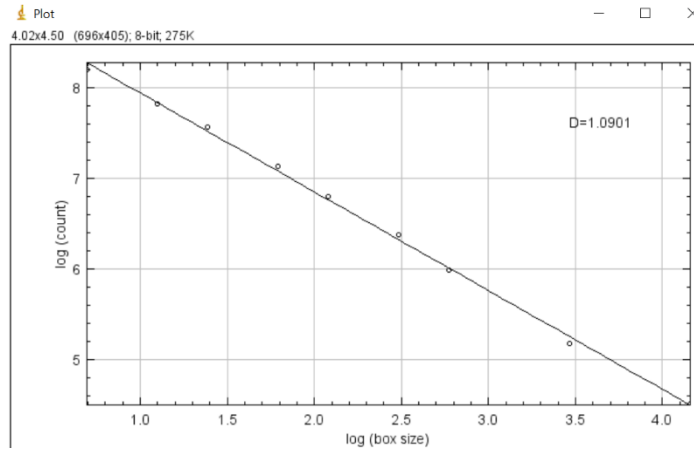
In cui osserviamo una percentuale di porosità pari a 0,731% e un D0 pari a 0,8132.

## Immagine (b)

### Valori di saturazione del colore (0-2)

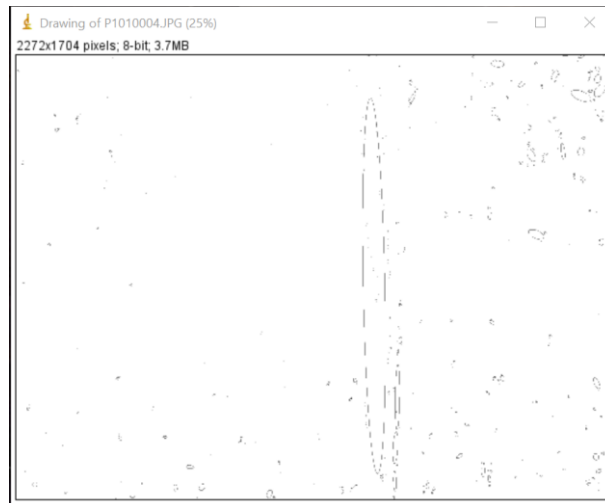


| File         | Edit  | Font       |              |       |      |       |       |       |       |          |         |            |          |  |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|----------|--|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFeret |  |
| P1010004.JPG | 644   | 39562      | 61.432       | 1.022 | 255  | NaN   | NaN   | NaN   | 4.931 | 1448.627 | 715.880 | 123.409    | 2.302    |  |



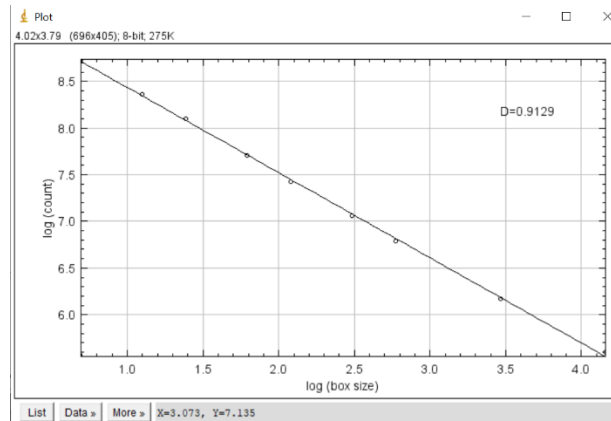
In cui osserviamo una percentuale di porosità pari a 1,022% e un D0 pari a 1,0901.

### Valori di saturazione del colore (0-10)



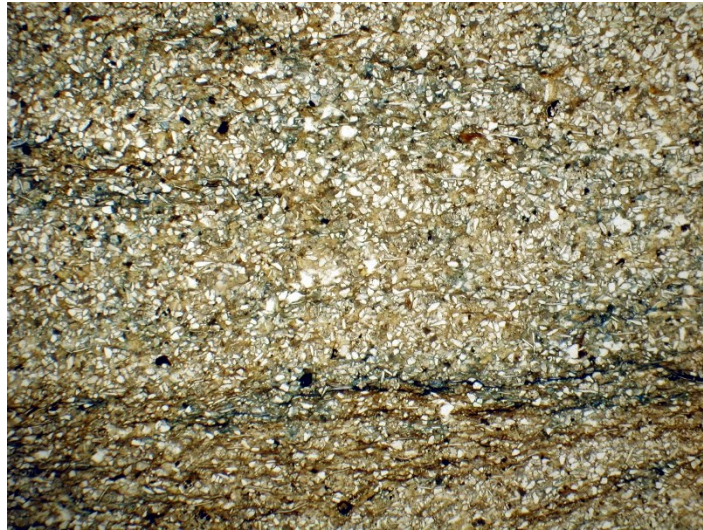
| File  | Edit    | Font      | Results |     |        |          |          |          |            |          |         |  |  |
|-------|---------|-----------|---------|-----|--------|----------|----------|----------|------------|----------|---------|--|--|
| Label | Area    | Mean      | Min     | Max | Feret  | %Area    | FeretX   | FeretY   | FeretAngle | MinFeret |         |  |  |
| 618   | 30.000  | 255       | 255     | 255 | 13.601 | 100      | 1251.000 | 1667.000 | 107.103    | 6.548    |         |  |  |
| 619   | 464.000 | 255       | 255     | 255 | 33.615 | 100      | 963.000  | 1698.000 | 59.621     | 21.548   |         |  |  |
| 620   | 8.000   | 255       | 255     | 255 | 5.000  | 100      | 2231.000 | 1669.000 | 126.870    | 3.000    |         |  |  |
| 621   | 1.000   | 255       | 255     | 255 | 1.414  | 100      | 1280.000 | 1671.000 | 135.000    | 1.000    |         |  |  |
| 622   | 40.000  | 255       | 255     | 255 | 13.342 | 100      | 1560.000 | 1671.000 | 102.995    | 6.000    |         |  |  |
| 623   | 2.000   | 255       | 255     | 255 | 2.236  | 100      | 2239.000 | 1674.000 | 116.565    | 1.000    |         |  |  |
| 624   | 29.000  | 255       | 255     | 255 | 10.296 | 100      | 1594.000 | 1675.000 | 119.055    | 5.821    |         |  |  |
| 625   | 32.000  | 255       | 255     | 255 | 9.849  | 100      | 184.000  | 1680.000 | 23.962     | 6.800    |         |  |  |
| 626   | 2.000   | 255       | 255     | 255 | 2.236  | 100      | 1251.000 | 1678.000 | 116.565    | 1.000    |         |  |  |
| 627   | 1.000   | 255       | 255     | 255 | 1.414  | 100      | 1249.000 | 1680.000 | 135.000    | 1.000    |         |  |  |
| 628   | 131.000 | 255       | 255     | 255 | 21.932 | 100      | 436.000  | 1696.000 | 24.228     | 11.872   |         |  |  |
| 629   | 57.000  | 255       | 255     | 255 | 15.232 | 100      | 1444.000 | 1704.000 | 66.801     | 6.000    |         |  |  |
| 630   | 1.000   | 255       | 255     | 255 | 1.414  | 100      | 437.000  | 1693.000 | 135.000    | 1.000    |         |  |  |
| 631   | 43.000  | 255       | 255     | 255 | 11.402 | 100      | 983.000  | 1693.000 | 164.745    | 6.000    |         |  |  |
| 632   | 82.000  | 255       | 255     | 255 | 13.000 | 100      | 683.000  | 1703.000 | 22.620     | 10.000   |         |  |  |
| 633   | 1.000   | 255       | 255     | 255 | 1.414  | 100      | 974.000  | 1696.000 | 135.000    | 1.000    |         |  |  |
| 634   | 23.000  | 255       | 255     | 255 | 7.211  | 100      | 382.000  | 1700.000 | 146.310    | 4.000    |         |  |  |
| 635   | Mean    | 192.533   | 255     | 255 | 255    | 9.134    | 100      | 1458.169 | 836.418    | 119.219  | 3.529   |  |  |
| 636   | SD      | 3743.795  | 0       | 0   | 0      | 69.442   | 0        | 606.914  | 574.244    | 36.112   | 8.330   |  |  |
| 637   | Min     | 1.000     | 255     | 255 | 255    | 1.414    | 100      | 5.000    | 0.000      | 14.036   | 1.000   |  |  |
| 638   | Max     | 94154.000 | 255     | 255 | 255    | 1706.536 | 100      | 2265.000 | 1704.000   | 177.797  | 164.214 |  |  |

| Summary        |       |            |              |       |      |       |       |       |       |          |         |            |          |
|----------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|----------|
| File Edit Font |       |            |              |       |      |       |       |       |       |          |         |            |          |
| Slice          | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFeret |
| P1010004.JPG   | 634   | 122066     | 192.533      | 3.153 | 255  | NaN   | NaN   | NaN   | 9.134 | 1458.169 | 836.418 | 119.219    | 3.529    |

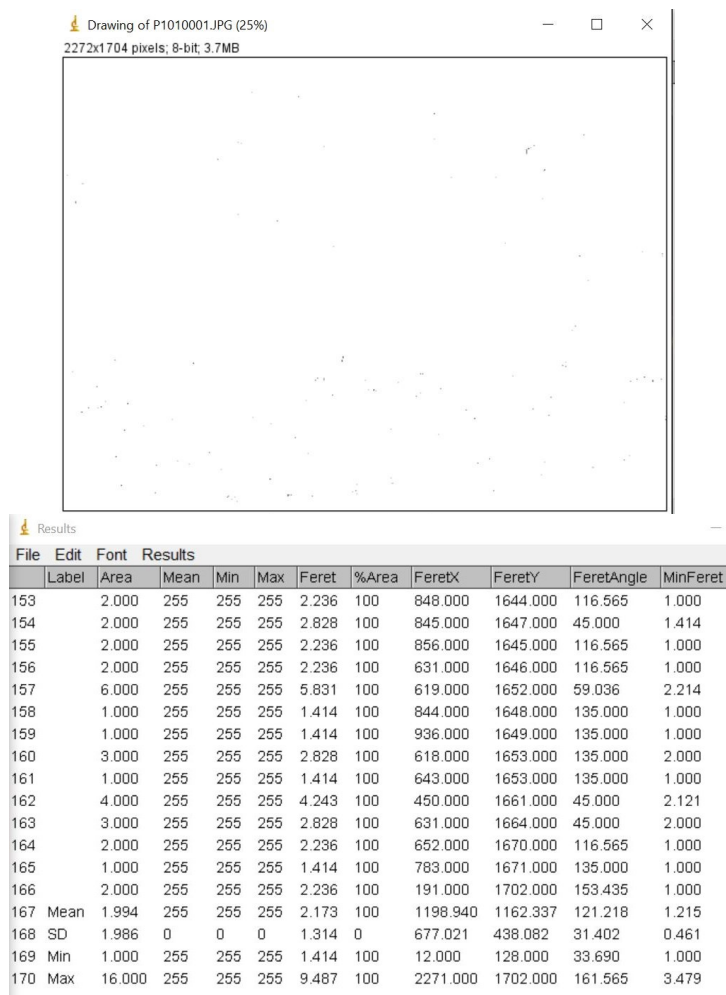


In cui osserviamo una percentuale di porosità pari a 3,153% e un D0 pari a 0,9129.

## Campione 7 - 1 foto

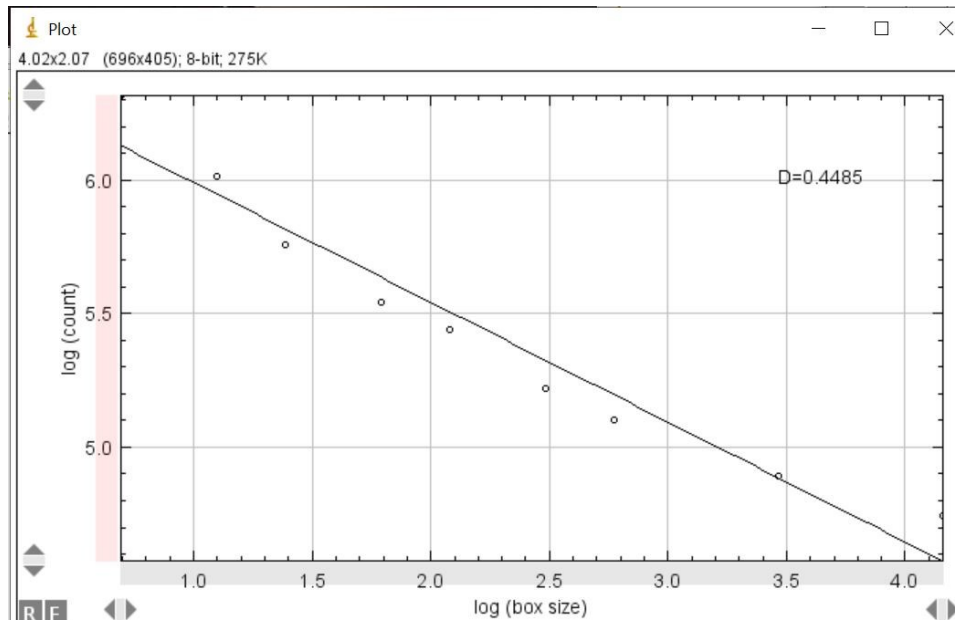


### Valori di saturazione del colore (0-2)



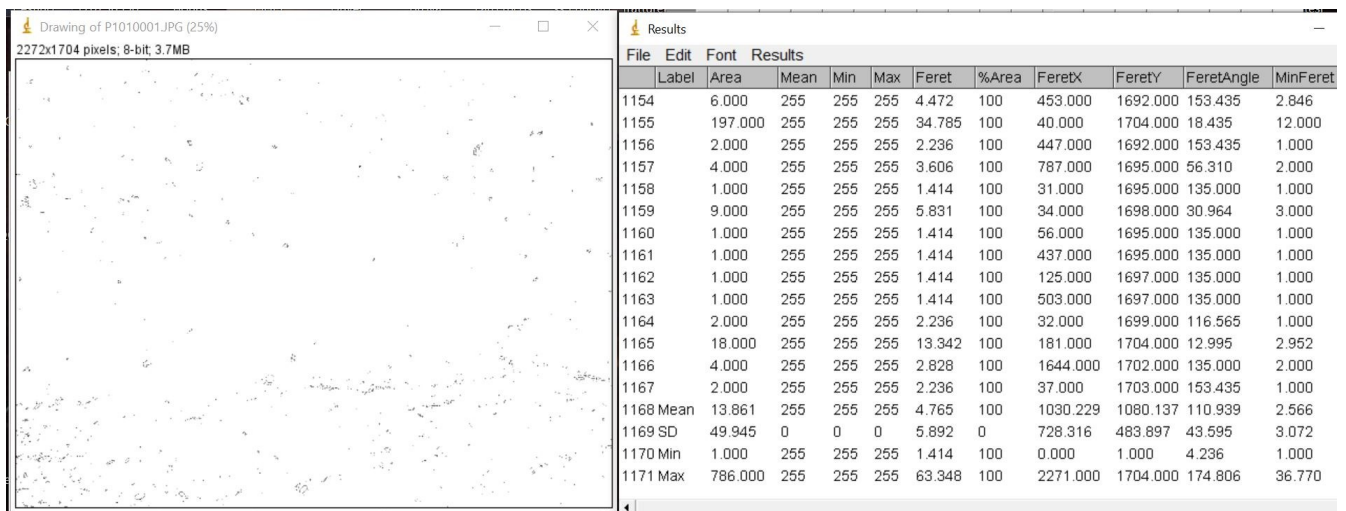
Summary

| File         | Edit  | Font       |              |       |      |       |       |       |       |          |          |            |           |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|----------|------------|-----------|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY   | FeretAngle | MinFerret |
| P1010001.JPG | 166   | 331        | 1.994        | 0.009 | 255  | NaN   | NaN   | NaN   | 2.173 | 1198.940 | 1162.337 | 121.218    | 1.215     |

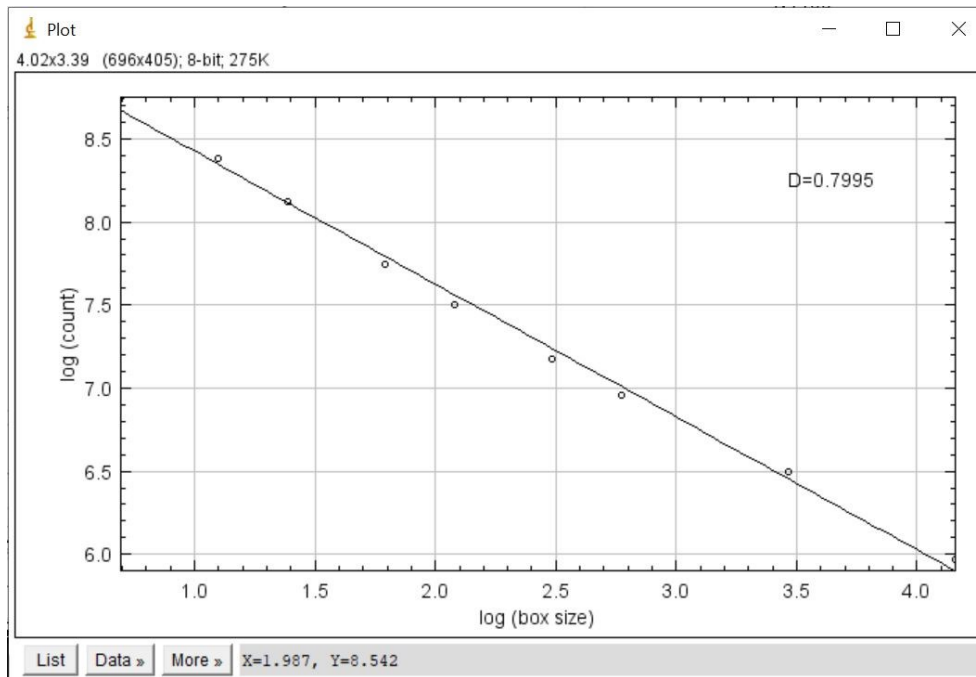


In cui osserviamo una percentuale di porosità pari a 0,009% e un  $D_0$  pari a 0,4485.

### Valori di saturazione del colore (0-10)

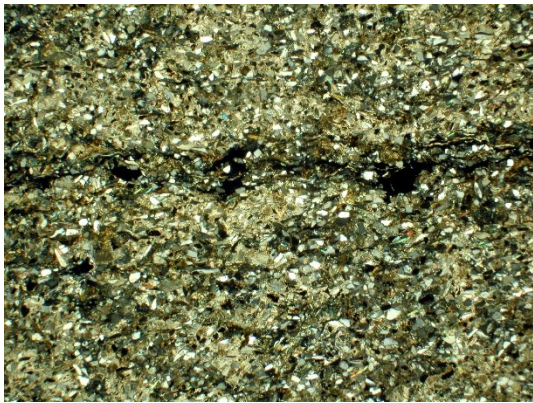


| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY   | FeretAngle | MinFeret |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|----------|------------|----------|
| P1010001.JPG | 1167  | 16176      | 13.861       | 0.418 | 255  | NaN   | NaN   | NaN   | 4.765 | 1030.229 | 1080.137 | 110.939    | 2.566    |



In cui osserviamo una percentuale di porosità pari a 0,418% e un D0 pari a 0,7995.

## Campione 8 - 2 foto



(a)



(b)

## Immagine (a)

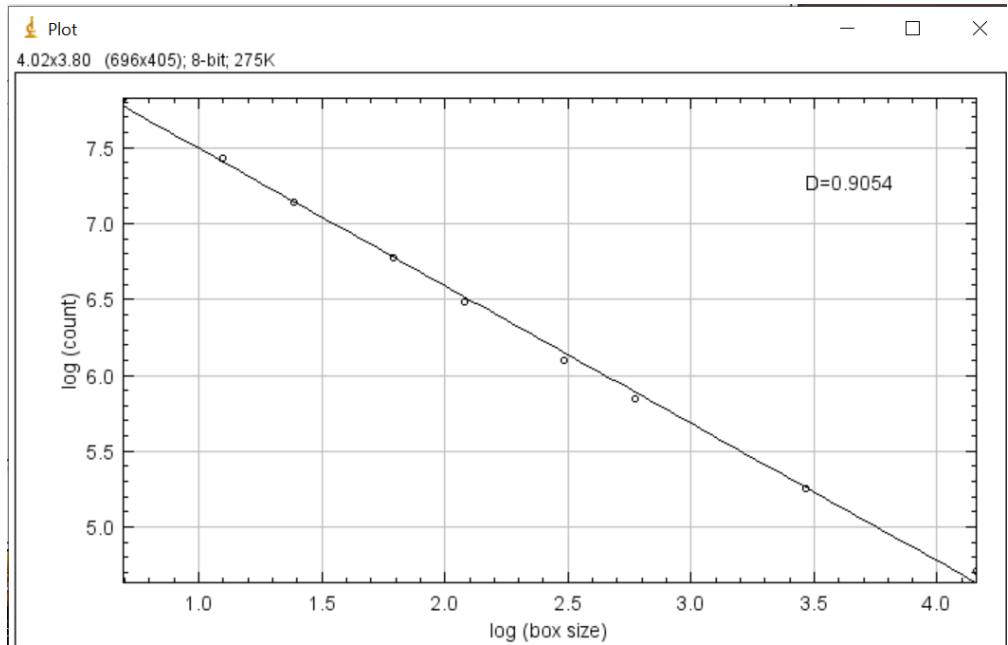
### Valori di saturazione del colore (0-2)



| Results |        |           |         |     |         |       |          |          |            |          |  |
|---------|--------|-----------|---------|-----|---------|-------|----------|----------|------------|----------|--|
| File    | Edit   | Font      | Results |     |         |       |          |          |            |          |  |
| Label   | Area   | Mean      | Min     | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |
| 368     | 2.000  | 255       | 255     | 255 | 2.236   | 100   | 471.000  | 1477.000 | 116.565    | 1.000    |  |
| 369     | 2.000  | 255       | 255     | 255 | 2.236   | 100   | 480.000  | 1480.000 | 116.565    | 1.000    |  |
| 370     | 1.000  | 255       | 255     | 255 | 1.414   | 100   | 510.000  | 1483.000 | 135.000    | 1.000    |  |
| 371     | 1.000  | 255       | 255     | 255 | 1.414   | 100   | 513.000  | 1483.000 | 135.000    | 1.000    |  |
| 372     | 2.000  | 255       | 255     | 255 | 2.236   | 100   | 506.000  | 1486.000 | 153.435    | 1.000    |  |
| 373     | 1.000  | 255       | 255     | 255 | 1.414   | 100   | 512.000  | 1487.000 | 135.000    | 1.000    |  |
| 374     | 1.000  | 255       | 255     | 255 | 1.414   | 100   | 520.000  | 1487.000 | 135.000    | 1.000    |  |
| 375     | 26.000 | 255       | 255     | 255 | 9.434   | 100   | 512.000  | 1494.000 | 32.005     | 5.000    |  |
| 376     | 1.000  | 255       | 255     | 255 | 1.414   | 100   | 511.000  | 1495.000 | 135.000    | 1.000    |  |
| 377     | 72.000 | 255       | 255     | 255 | 18.385  | 100   | 1880.000 | 1601.000 | 45.000     | 9.475    |  |
| 378     | 3.000  | 255       | 255     | 255 | 3.606   | 100   | 1895.000 | 1590.000 | 33.690     | 1.789    |  |
| 379     | 3.000  | 255       | 255     | 255 | 3.162   | 100   | 1901.000 | 1590.000 | 161.565    | 1.000    |  |
| 380     | 1.000  | 255       | 255     | 255 | 1.414   | 100   | 1903.000 | 1592.000 | 135.000    | 1.000    |  |
| 381     | 1.000  | 255       | 255     | 255 | 1.414   | 100   | 1906.000 | 1593.000 | 135.000    | 1.000    |  |
| 382     | 3.000  | 255       | 255     | 255 | 3.162   | 100   | 1884.000 | 1602.000 | 161.565    | 1.000    |  |
| 383     | 1.000  | 255       | 255     | 255 | 1.414   | 100   | 1888.000 | 1602.000 | 135.000    | 1.000    |  |
| 384     | 1.000  | 255       | 255     | 255 | 1.414   | 100   | 136.000  | 1685.000 | 135.000    | 1.000    |  |
| 385     | Mean   | 65.586    | 255     | 255 | 5.675   | 100   | 1102.859 | 829.568  | 120.133    | 2.949    |  |
| 386     | SD     | 709.338   | 0       | 0   | 16.676  | 0     | 795.825  | 289.473  | 42.579     | 7.629    |  |
| 387     | Min    | 1.000     | 255     | 255 | 1.414   | 100   | 0.000    | 2.000    | 10.376     | 1.000    |  |
| 388     | Max    | 13348.000 | 255     | 255 | 255.515 | 100   | 2270.000 | 1685.000 | 175.601    | 116.955  |  |

Summary

| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFeret |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|----------|
| P1010002.JPG | 384   | 25185      | 65.586       | 0.651 | 255  | NaN   | NaN   | NaN   | 5.675 | 1102.859 | 829.568 | 120.133    | 2.949    |

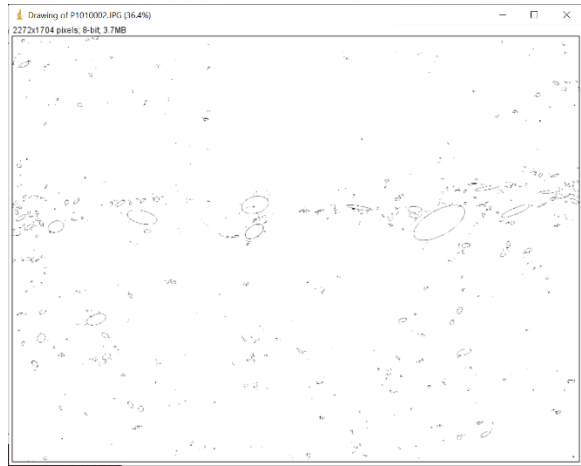


In cui osserviamo una percentuale di porosità pari a 0,651% e un D0 pari a 0,9054.

### Valori di saturazione del colore (0-10)

Results

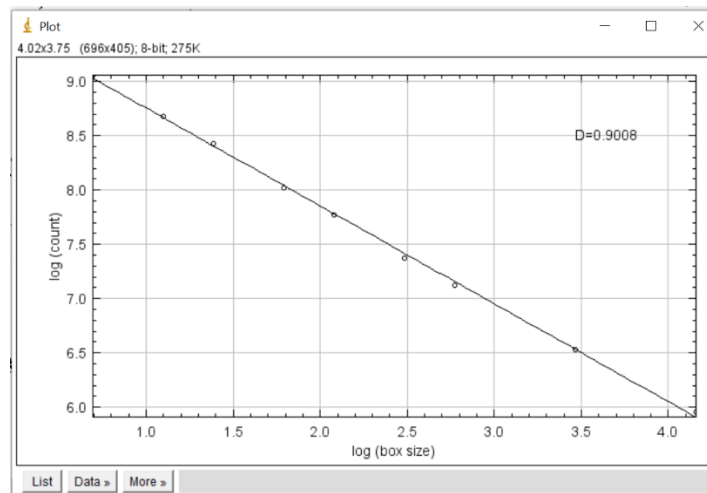
| Label | Area    | Mean      | Min | Max | Feret   |
|-------|---------|-----------|-----|-----|---------|
| 1061  | 1.000   | 255       | 255 | 255 | 1.414   |
| 1062  | 7.000   | 255       | 255 | 255 | 5.000   |
| 1063  | 5.000   | 255       | 255 | 255 | 3.606   |
| 1064  | 1.000   | 255       | 255 | 255 | 1.414   |
| 1065  | 124.000 | 255       | 255 | 255 | 17.888  |
| 1066  | 3.000   | 255       | 255 | 255 | 3.162   |
| 1067  | 2.000   | 255       | 255 | 255 | 2.236   |
| 1068  | 1.000   | 255       | 255 | 255 | 1.414   |
| 1069  | 8.000   | 255       | 255 | 255 | 5.099   |
| 1070  | 2.000   | 255       | 255 | 255 | 2.236   |
| 1071  | 1.000   | 255       | 255 | 255 | 1.414   |
| 1072  | 16.000  | 255       | 255 | 255 | 6.708   |
| 1073  | 3.000   | 255       | 255 | 255 | 3.606   |
| 1074  | Mean    | 66.434    | 255 | 255 | 7.094   |
| 1075  | SD      | 616.441   | 0   | 0   | 16.891  |
| 1076  | Min     | 1.000     | 255 | 255 | 1.414   |
| 1077  | Max     | 17777.000 | 255 | 255 | 308.317 |



Summary

| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFeret |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|----------|
| P1010002.JPG | 1073  | 71284      | 66.434       | 1.841 | 255  | NaN   | NaN   | NaN   | 7.094 | 1150.369 | 868.858 | 114.943    | 3.676    |

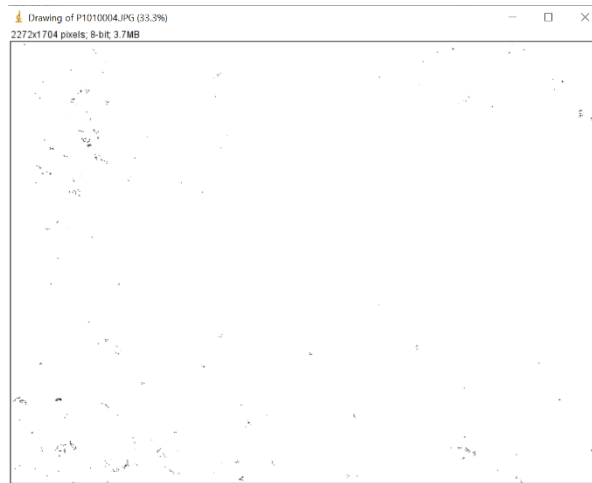




In cui osserviamo una percentuale di porosità pari a 1,841% e un  $D_0$  pari a 0,9008.

## Immagine (b)

### Valori di saturazione del colore (0-2)

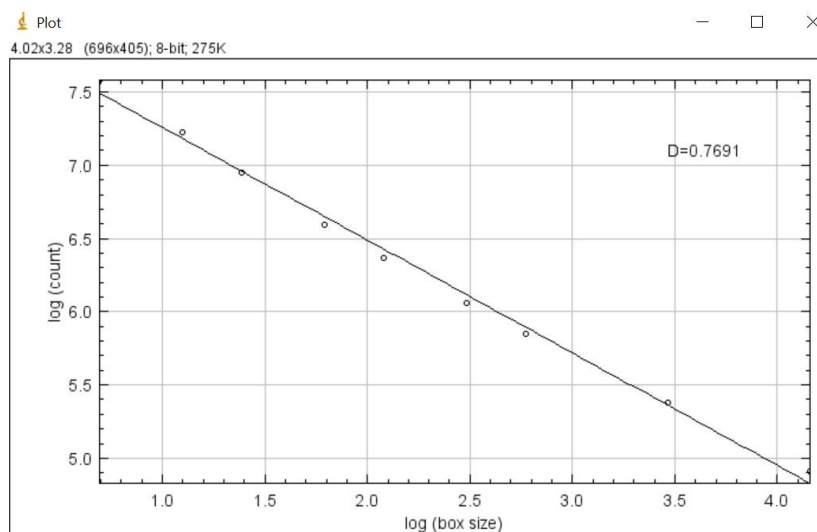


Results

| File | Edit  | Font    | Results |     |     |        |       |          |          |            |          |
|------|-------|---------|---------|-----|-----|--------|-------|----------|----------|------------|----------|
|      | Label | Area    | Mean    | Min | Max | Feret  | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |
| 448  |       | 92.000  | 255     | 255 | 255 | 19.235 | 100   | 891.000  | 1680.000 | 98.973     | 9.203    |
| 449  |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 1300.000 | 1680.000 | 135.000    | 1.000    |
| 450  |       | 5.000   | 255     | 255 | 255 | 3.606  | 100   | 1952.000 | 1682.000 | 123.690    | 2.000    |
| 451  |       | 2.000   | 255     | 255 | 255 | 2.236  | 100   | 885.000  | 1685.000 | 116.565    | 1.000    |
| 452  |       | 7.000   | 255     | 255 | 255 | 3.606  | 100   | 1963.000 | 1685.000 | 123.690    | 3.000    |
| 453  |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 883.000  | 1687.000 | 135.000    | 1.000    |
| 454  |       | 6.000   | 255     | 255 | 255 | 4.243  | 100   | 882.000  | 1693.000 | 45.000     | 2.828    |
| 455  |       | 3.000   | 255     | 255 | 255 | 3.162  | 100   | 371.000  | 1695.000 | 161.565    | 1.000    |
| 456  |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 1968.000 | 1695.000 | 135.000    | 1.000    |
| 457  |       | 6.000   | 255     | 255 | 255 | 4.472  | 100   | 373.000  | 1701.000 | 63.435     | 2.000    |
| 458  |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 239.000  | 1699.000 | 135.000    | 1.000    |
| 459  |       | 6.000   | 255     | 255 | 255 | 4.472  | 100   | 241.000  | 1702.000 | 153.435    | 2.000    |
| 460  |       | 4.000   | 255     | 255 | 255 | 3.606  | 100   | 1971.000 | 1702.000 | 146.310    | 2.000    |
| 461  | Mean  | 7.850   | 255     | 255 | 255 | 3.522  | 100   | 749.620  | 960.261  | 125.095    | 1.946    |
| 462  | SD    | 33.673  | 0       | 0   | 0   | 4.135  | 0     | 702.614  | 597.560  | 37.030     | 2.576    |
| 463  | Min   | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 8.000    | 8.000    | 7.431      | 1.000    |
| 464  | Max   | 587.000 | 255     | 255 | 255 | 43.267 | 100   | 2271.000 | 1702.000 | 173.660    | 33.466   |

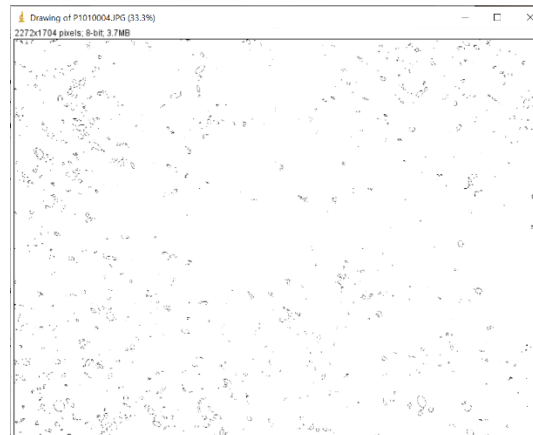
Summary

| File         | Edit  | Font       |              |       |      |       |       |       |       |         |         |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|---------|---------|------------|----------|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX  | FeretY  | FeretAngle | MinFeret |
| P1010004.JPG | 460   | 3611       | 7.850        | 0.093 | 255  | NaN   | NaN   | NaN   | 3.522 | 749.620 | 960.261 | 125.095    | 1.946    |



In cui osserviamo una percentuale di porosità pari a 0,093% e un D0 pari a 0,7691.

## Valori di saturazione del colore (0-10)

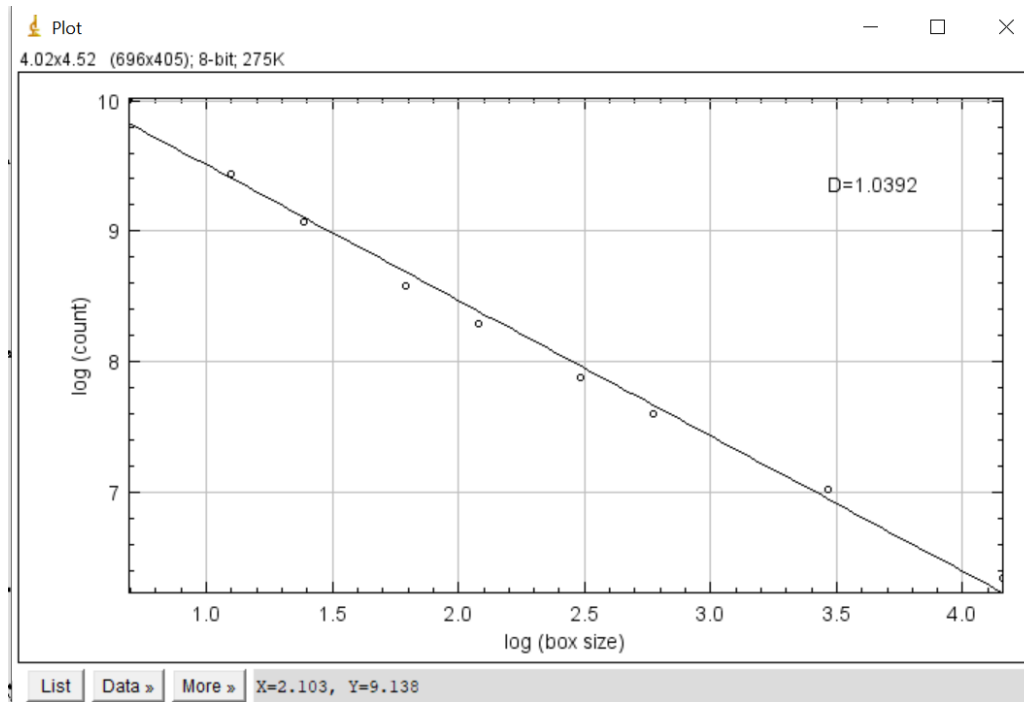


Results

| File      | Edit  | Font     | Results |     |     |        |       |          |          |            |          |  |  |
|-----------|-------|----------|---------|-----|-----|--------|-------|----------|----------|------------|----------|--|--|
|           | Label | Area     | Mean    | Min | Max | Feret  | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |  |
| 1819      |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 372.000  | 1691.000 | 135.000    | 1.000    |  |  |
| 1820      |       | 139.000  | 255     | 255 | 255 | 18.682 | 100   | 362.000  | 1697.000 | 15.524     | 12.162   |  |  |
| 1821      |       | 140.000  | 255     | 255 | 255 | 22.361 | 100   | 226.000  | 1704.000 | 10.305     | 11.000   |  |  |
| 1822      |       | 14.000   | 255     | 255 | 255 | 6.325  | 100   | 110.000  | 1701.000 | 71.565     | 4.000    |  |  |
| 1823      |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 1564.000 | 1696.000 | 135.000    | 1.000    |  |  |
| 1824      |       | 2.000    | 255     | 255 | 255 | 2.236  | 100   | 858.000  | 1697.000 | 116.565    | 1.000    |  |  |
| 1825      |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 408.000  | 1699.000 | 135.000    | 1.000    |  |  |
| 1826      |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 908.000  | 1699.000 | 135.000    | 1.000    |  |  |
| 1827      |       | 15.000   | 255     | 255 | 255 | 6.403  | 100   | 2024.000 | 1699.000 | 128.660    | 4.000    |  |  |
| 1828      |       | 3.000    | 255     | 255 | 255 | 2.828  | 100   | 2035.000 | 1699.000 | 135.000    | 2.000    |  |  |
| 1829      |       | 13.000   | 255     | 255 | 255 | 6.403  | 100   | 1550.000 | 1700.000 | 141.340    | 4.000    |  |  |
| 1830      |       | 7.000    | 255     | 255 | 255 | 5.000  | 100   | 103.000  | 1704.000 | 36.870     | 2.828    |  |  |
| 1831      |       | 17.000   | 255     | 255 | 255 | 7.616  | 100   | 403.000  | 1704.000 | 23.199     | 3.000    |  |  |
| 1832 Mean |       | 36.080   | 255     | 255 | 255 | 6.502  | 100   | 945.320  | 870.517  | 117.418    | 3.710    |  |  |
| 1833 SD   |       | 110.237  | 0       | 0   | 0   | 9.195  | 0     | 683.383  | 541.123  | 39.717     | 5.244    |  |  |
| 1834 Min  |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 0.000    | 0.000    | 3.270      | 1.000    |  |  |
| 1835 Max  |       | 1729.000 | 255     | 255 | 255 | 77.473 | 100   | 2271.000 | 1704.000 | 178.264    | 52.366   |  |  |

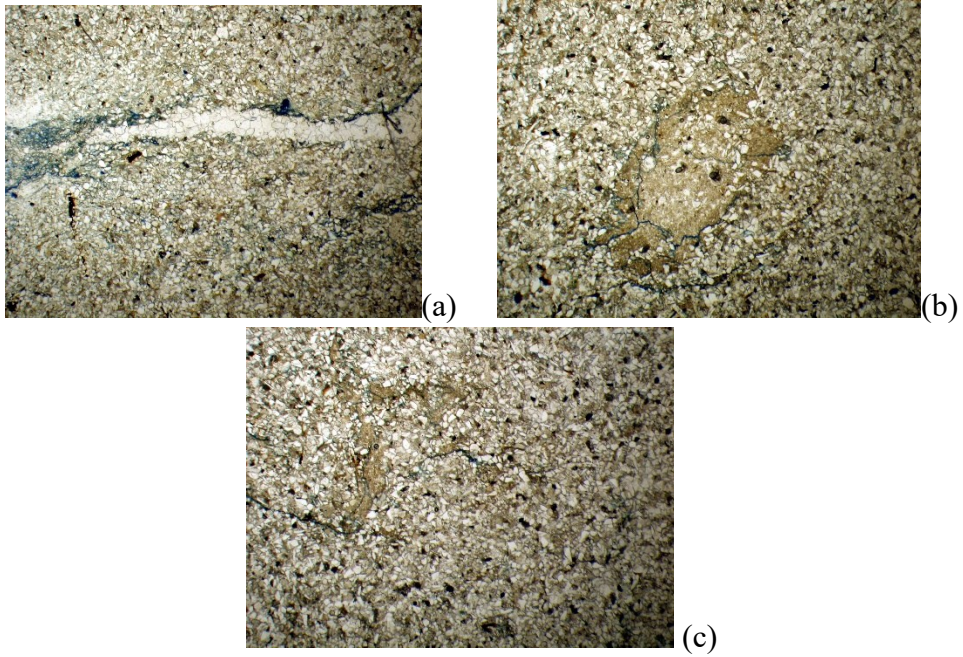
Summary

| File         | Edit  | Font       |              |       |      |       |       |       |       |         |         |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|---------|---------|------------|----------|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX  | FeretY  | FeretAngle | MinFeret |
| P1010004.JPG | 1831  | 66063      | 36.080       | 1.706 | 255  | NaN   | NaN   | NaN   | 6.502 | 945.320 | 870.517 | 117.418    | 3.710    |



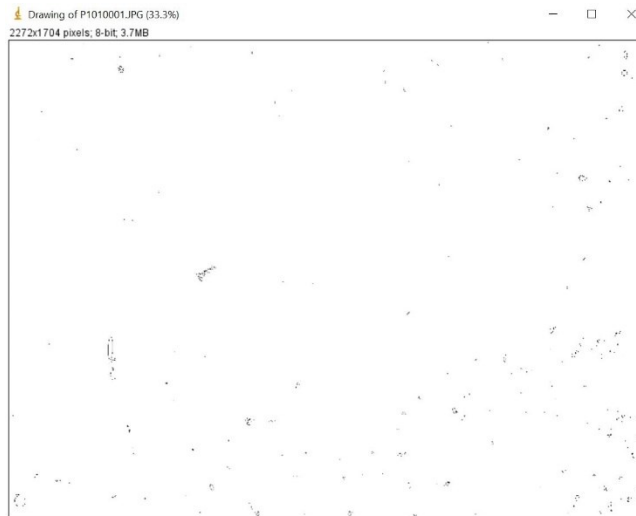
In cui osserviamo una percentuale di porosità pari a 1,706% e un  $D_0$  pari a 1,0392.

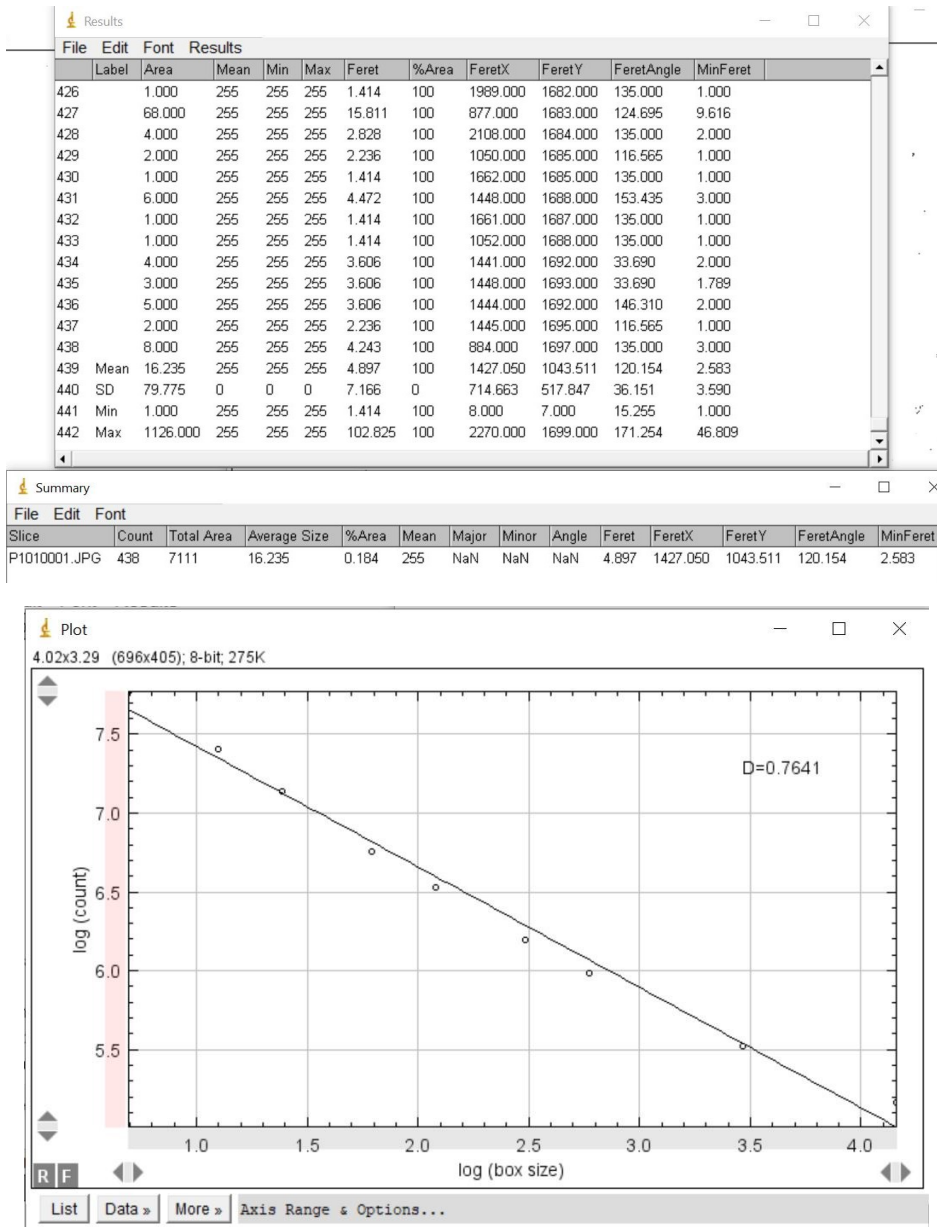
**Campione 9 - 3 foto**



**Immagine (a)**

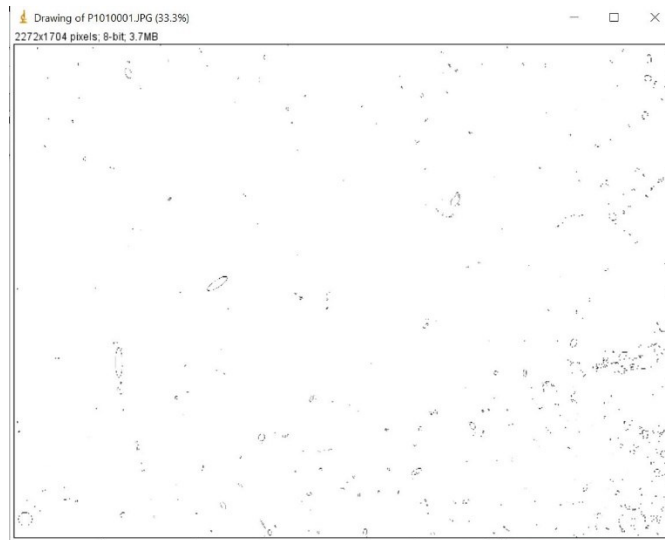
Valori di saturazione del colore (0-2)





In cui osserviamo una percentuale di porosità pari a 0,184% e un D0 pari 0,7641.

## Valori di saturazione del colore (0-10)



Summary

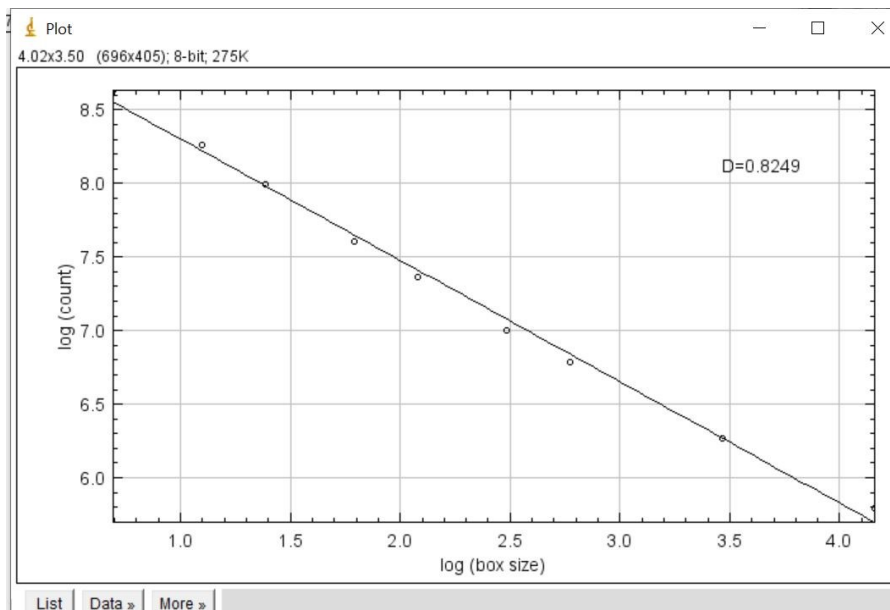
File Edit Font

| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY   | FeretAngle | MinFeret |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|----------|------------|----------|
| P1010001.JPG | 703   | 25859      | 36.784       | 0.668 | 255  | NaN   | NaN   | NaN   | 7.053 | 1644.795 | 1058.846 | 116.790    | 3.912    |

Results

File Edit Font Results

| Label    | Area     | Mean | Min | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |
|----------|----------|------|-----|-----|---------|-------|----------|----------|------------|----------|
| 692      | 34.000   | 255  | 255 | 255 | 9.434   | 100   | 1658.000 | 1692.000 | 57.995     | 6.261    |
| 693      | 122.000  | 255  | 255 | 255 | 17.889  | 100   | 1440.000 | 1685.000 | 116.565    | 12.403   |
| 694      | 4.000    | 255  | 255 | 255 | 4.243   | 100   | 2224.000 | 1689.000 | 135.000    | 2.121    |
| 695      | 3.000    | 255  | 255 | 255 | 3.162   | 100   | 1970.000 | 1691.000 | 108.435    | 1.000    |
| 696      | 4.000    | 255  | 255 | 255 | 3.606   | 100   | 2227.000 | 1695.000 | 56.310     | 2.000    |
| 697      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 1935.000 | 1695.000 | 135.000    | 1.000    |
| 698      | 2.000    | 255  | 255 | 255 | 2.236   | 100   | 2158.000 | 1696.000 | 116.565    | 1.000    |
| 699      | 2.000    | 255  | 255 | 255 | 2.236   | 100   | 864.000  | 1698.000 | 116.565    | 1.000    |
| 700      | 5.000    | 255  | 255 | 255 | 4.243   | 100   | 1944.000 | 1699.000 | 135.000    | 2.236    |
| 701      | 5.000    | 255  | 255 | 255 | 3.606   | 100   | 1219.000 | 1700.000 | 123.690    | 2.000    |
| 702      | 3.000    | 255  | 255 | 255 | 3.162   | 100   | 1720.000 | 1703.000 | 161.565    | 1.000    |
| 703      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 2236.000 | 1703.000 | 135.000    | 1.000    |
| 704 Mean | 36.784   | 255  | 255 | 255 | 7.053   | 100   | 1644.795 | 1058.846 | 116.790    | 3.912    |
| 705 SD   | 133.505  | 0    | 0   | 0   | 9.279   | 0     | 643.116  | 487.984  | 36.680     | 5.020    |
| 706 Min  | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 1.000    | 0.000    | 12.995     | 1.000    |
| 707 Max  | 1866.000 | 255  | 255 | 255 | 108.462 | 100   | 2271.000 | 1703.000 | 173.660    | 51.975   |



In cui osserviamo una percentuale di porosità pari a 0,668% e un D0 pari 0,8249.

### Immagine (b)

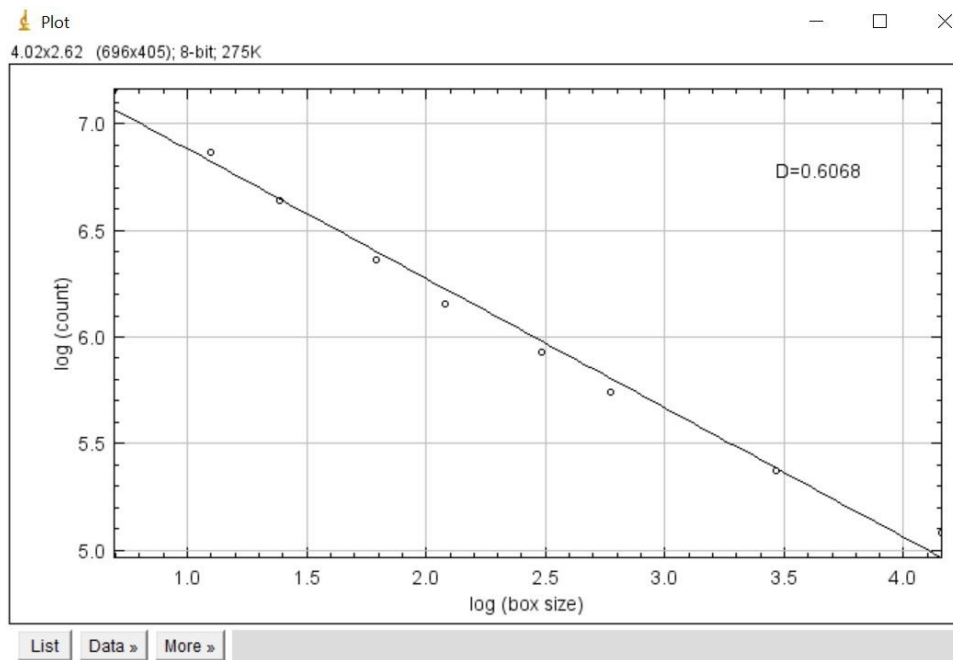
Valori di saturazione del colore (0-2)



| File Edit Font Results |      | Label   | Area | Mean | Min | Max    | Feret | %Area    | FeretX   | FeretY  | FeretAngle | MinFeret |
|------------------------|------|---------|------|------|-----|--------|-------|----------|----------|---------|------------|----------|
| 438                    |      | 4.000   | 255  | 255  | 255 | 3.606  | 100   | 1698.000 | 1690.000 | 146.310 | 2.000      |          |
| 439                    |      | 1.000   | 255  | 255  | 255 | 1.414  | 100   | 1248.000 | 1691.000 | 135.000 | 1.000      |          |
| 440                    |      | 1.000   | 255  | 255  | 255 | 1.414  | 100   | 1821.000 | 1692.000 | 135.000 | 1.000      |          |
| 441                    |      | 45.000  | 255  | 255  | 255 | 14.765 | 100   | 1240.000 | 1703.000 | 28.301  | 8.937      |          |
| 442                    |      | 2.000   | 255  | 255  | 255 | 2.236  | 100   | 1253.000 | 1693.000 | 153.435 | 1.000      |          |
| 443                    |      | 26.000  | 255  | 255  | 255 | 9.849  | 100   | 1702.000 | 1702.000 | 66.038  | 6.000      |          |
| 444                    |      | 1.000   | 255  | 255  | 255 | 1.414  | 100   | 843.000  | 1695.000 | 135.000 | 1.000      |          |
| 445                    |      | 2.000   | 255  | 255  | 255 | 2.236  | 100   | 838.000  | 1696.000 | 153.435 | 1.000      |          |
| 446                    |      | 2.000   | 255  | 255  | 255 | 2.236  | 100   | 1254.000 | 1696.000 | 153.435 | 1.000      |          |
| 447                    |      | 2.000   | 255  | 255  | 255 | 2.236  | 100   | 1250.000 | 1699.000 | 153.435 | 1.000      |          |
| 448                    |      | 1.000   | 255  | 255  | 255 | 1.414  | 100   | 1255.000 | 1700.000 | 135.000 | 1.000      |          |
| 449                    |      | 2.000   | 255  | 255  | 255 | 2.236  | 100   | 51.000   | 1701.000 | 153.435 | 1.000      |          |
| 450                    | Mean | 5.581   | 255  | 255  | 255 | 3.483  | 100   | 1422.316 | 1129.303 | 122.812 | 1.738      |          |
| 451                    | SD   | 23.116  | 0    | 0    | 0   | 3.838  | 0     | 655.605  | 525.887  | 33.045  | 1.413      |          |
| 452                    | Min  | 1.000   | 255  | 255  | 255 | 1.414  | 100   | 0.000    | 29.000   | 19.983  | 1.000      |          |
| 453                    | Max  | 472.000 | 255  | 255  | 255 | 51.662 | 100   | 2270.000 | 1703.000 | 174.289 | 16.532     |          |

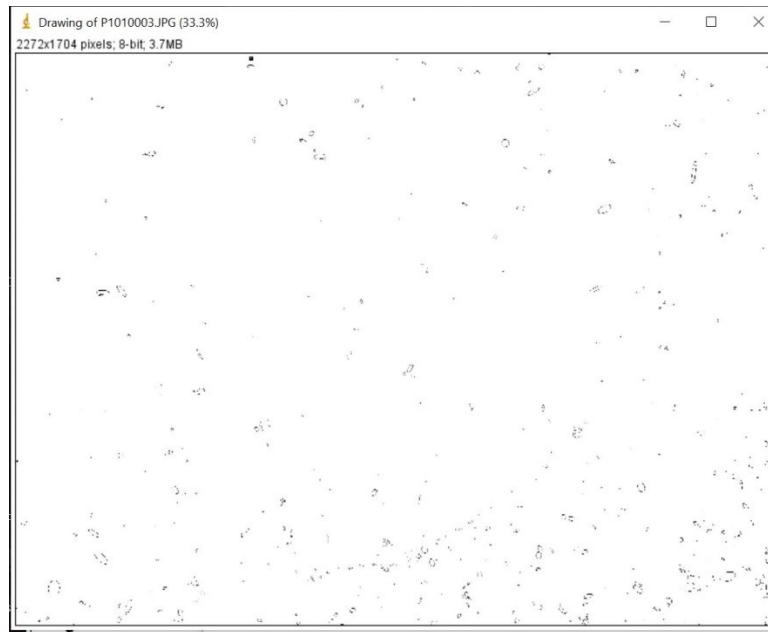
| File Edit Font |  | Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY   | FeretAngle | MinFeret |
|----------------|--|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|----------|------------|----------|
| Summary        |  | P1010003.JPG | 449   | 2506       | 5.581        | 0.065 | 255  | NaN   | NaN   | NaN   | 3.483 | 1422.316 | 1129.303 | 122.812    | 1.738    |





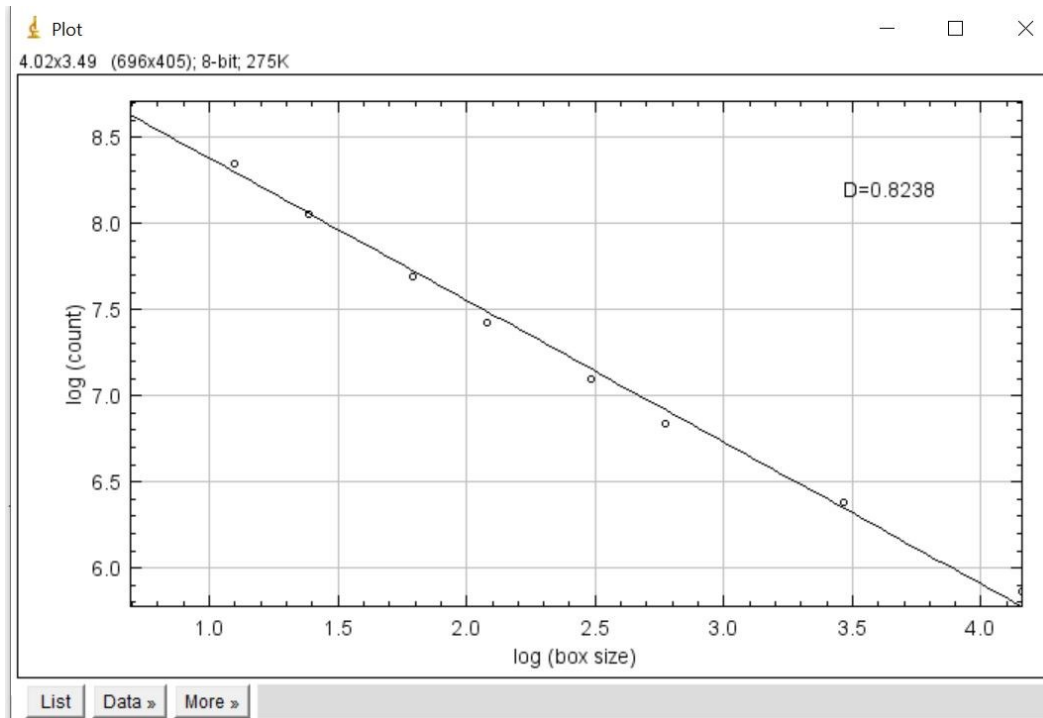
In cui osserviamo una percentuale di porosità pari a 0,065% e un D0 pari a 0,6068.

## Valori di saturazione del colore (0-10)



| Results |       |          |         |     |     |        |       |          |          |            |           |
|---------|-------|----------|---------|-----|-----|--------|-------|----------|----------|------------|-----------|
| File    | Edit  | Font     | Results |     |     |        |       |          |          |            |           |
|         | Label | Area     | Mean    | Min | Max | Feret  | %Area | FeretX   | FeretY   | FeretAngle | MinFerret |
| 745     |       | 3.000    | 255     | 255 | 255 | 2.828  | 100   | 1996.000 | 1697.000 | 45.000     | 2.000     |
| 746     |       | 20.000   | 255     | 255 | 255 | 9.849  | 100   | 2236.000 | 1695.000 | 113.962    | 4.000     |
| 747     |       | 2.000    | 255     | 255 | 255 | 2.236  | 100   | 933.000  | 1696.000 | 116.565    | 1.000     |
| 748     |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 1938.000 | 1696.000 | 135.000    | 1.000     |
| 749     |       | 6.000    | 255     | 255 | 255 | 4.243  | 100   | 1689.000 | 1698.000 | 135.000    | 2.683     |
| 750     |       | 67.000   | 255     | 255 | 255 | 19.235 | 100   | 46.000   | 1704.000 | 8.973      | 5.000     |
| 751     |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 101.000  | 1699.000 | 135.000    | 1.000     |
| 752     |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 848.000  | 1699.000 | 135.000    | 1.000     |
| 753     |       | 3.000    | 255     | 255 | 255 | 2.828  | 100   | 170.000  | 1703.000 | 45.000     | 2.000     |
| 754     |       | 20.000   | 255     | 255 | 255 | 8.246  | 100   | 970.000  | 1704.000 | 14.036     | 3.000     |
| 755     |       | 4.000    | 255     | 255 | 255 | 2.828  | 100   | 2039.000 | 1701.000 | 135.000    | 2.000     |
| 756     |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 1953.000 | 1703.000 | 135.000    | 1.000     |
| 757     |       | 4.000    | 255     | 255 | 255 | 4.123  | 100   | 2231.000 | 1703.000 | 165.964    | 1.000     |
| 758     | Mean  | 35.770   | 255     | 255 | 255 | 6.899  | 100   | 1383.193 | 1142.081 | 115.124    | 3.834     |
| 759     | SD    | 103.437  | 0       | 0   | 0   | 9.177  | 0     | 643.404  | 513.993  | 38.178     | 4.860     |
| 760     | Min   | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 0.000    | 0.000    | 6.116      | 1.000     |
| 761     | Max   | 1233.000 | 255     | 255 | 255 | 77.162 | 100   | 2270.000 | 1704.000 | 175.914    | 35.750    |

| Summary      |       |            |              |       |      |       |       |       |       |          |          |            |           |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|----------|------------|-----------|
| File         | Edit  | Font       |              |       |      |       |       |       |       |          |          |            |           |
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY   | FeretAngle | MinFerret |
| P1010003.JPG | 757   | 27078      | 35.770       | 0.699 | 255  | NaN   | NaN   | NaN   | 6.899 | 1383.193 | 1142.081 | 115.124    | 3.834     |



In cui osserviamo una percentuale di porosità pari a 0,699% e un D0 pari a 0,8238.

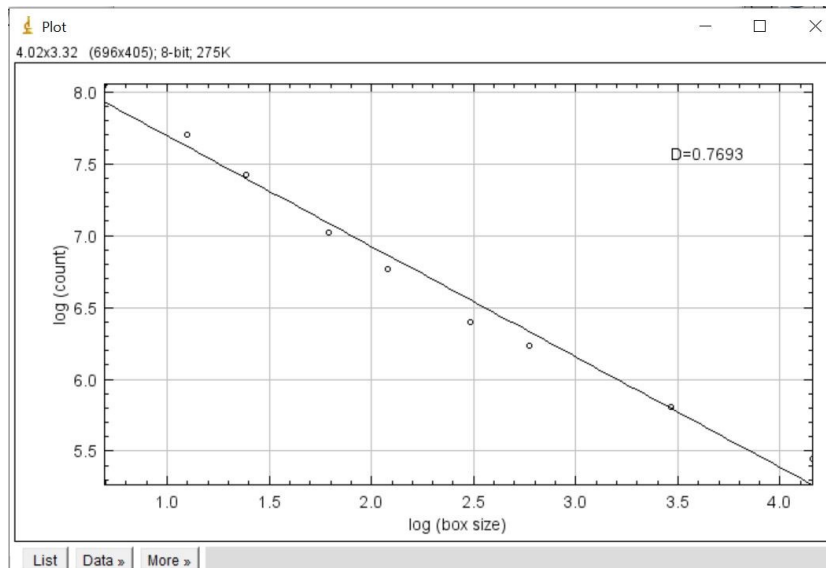
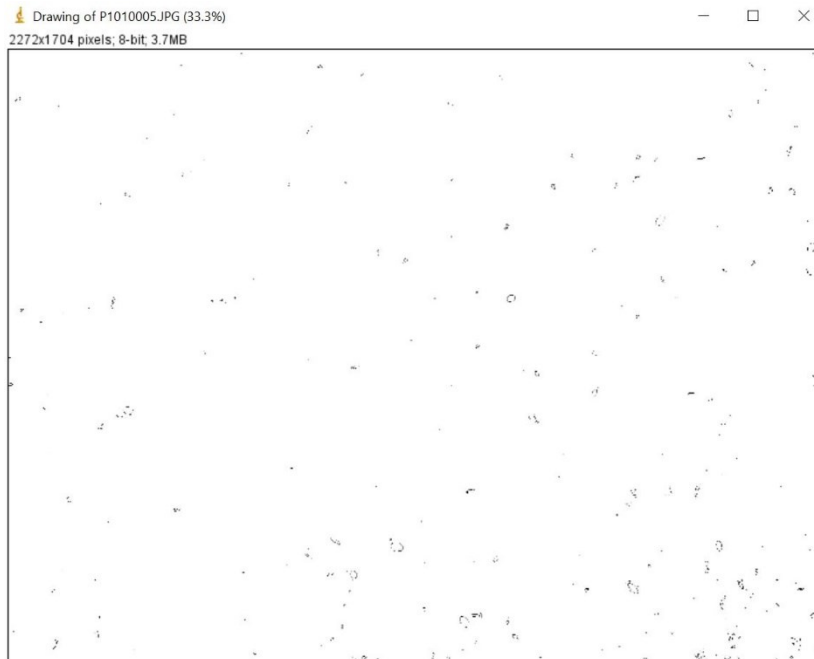
### Immagine (c)

#### Valori di saturazione del colore (0-2)

| Results |         |         |         |     |        |        |          |          |            |          |        |  |
|---------|---------|---------|---------|-----|--------|--------|----------|----------|------------|----------|--------|--|
| File    | Edit    | Font    | Results |     |        |        |          |          |            |          |        |  |
| Label   | Area    | Mean    | Min     | Max | Feret  | %Area  | FeretX   | FeretY   | FeretAngle | MinFeret |        |  |
| 460     | 103.000 | 255     | 255     | 255 | 16.125 | 100    | 956.000  | 1703.000 | 29.745     | 11.000   |        |  |
| 461     | 2.000   | 255     | 255     | 255 | 2.236  | 100    | 1932.000 | 1693.000 | 153.435    | 1.000    |        |  |
| 462     | 69.000  | 255     | 255     | 255 | 12.806 | 100    | 1221.000 | 1704.000 | 51.340     | 9.000    |        |  |
| 463     | 9.000   | 255     | 255     | 255 | 5.831  | 100    | 1916.000 | 1694.000 | 120.964    | 2.683    |        |  |
| 464     | 4.000   | 255     | 255     | 255 | 2.828  | 100    | 2012.000 | 1694.000 | 135.000    | 2.000    |        |  |
| 465     | 1.000   | 255     | 255     | 255 | 1.414  | 100    | 997.000  | 1695.000 | 135.000    | 1.000    |        |  |
| 466     | 8.000   | 255     | 255     | 255 | 5.657  | 100    | 1481.000 | 1695.000 | 135.000    | 3.479    |        |  |
| 467     | 39.000  | 255     | 255     | 255 | 11.402 | 100    | 1771.000 | 1697.000 | 142.125    | 6.499    |        |  |
| 468     | 1.000   | 255     | 255     | 255 | 1.414  | 100    | 2175.000 | 1697.000 | 135.000    | 1.000    |        |  |
| 469     | 1.000   | 255     | 255     | 255 | 1.414  | 100    | 1944.000 | 1699.000 | 135.000    | 1.000    |        |  |
| 470     | 43.000  | 255     | 255     | 255 | 12.083 | 100    | 2141.000 | 1699.000 | 155.556    | 5.000    |        |  |
| 471     | 10.000  | 255     | 255     | 255 | 5.385  | 100    | 1026.000 | 1702.000 | 158.199    | 3.000    |        |  |
| 472     | Mean    | 24.817  | 255     | 255 | 255    | 6.121  | 100      | 1438.301 | 1065.803   | 118.846  | 3.384  |  |
| 473     | SD      | 69.679  | 0       | 0   | 0      | 7.403  | 0        | 693.564  | 532.470    | 39.371   | 4.271  |  |
| 474     | Min     | 1.000   | 255     | 255 | 255    | 1.414  | 100      | 0.000    | 2.000      | 4.236    | 1.000  |  |
| 475     | Max     | 679.000 | 255     | 255 | 255    | 51.313 | 100      | 2271.000 | 1704.000   | 175.486  | 33.085 |  |

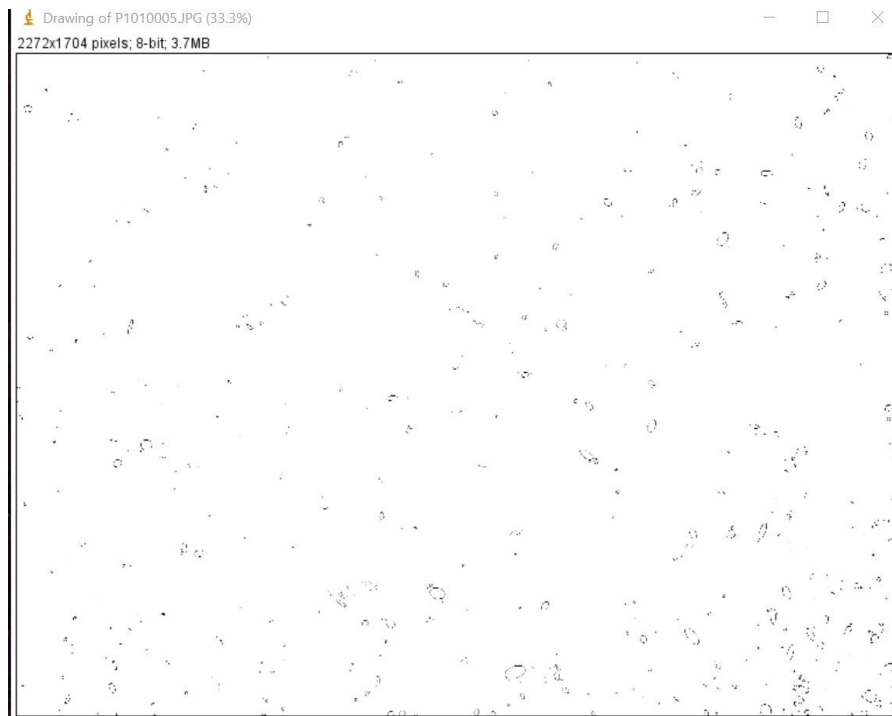
  

| Summary      |       |            |              |       |      |       |       |       |       |          |          |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|----------|------------|----------|
| File         | Edit  | Font       | Results      |       |      |       |       |       |       |          |          |            |          |
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY   | FeretAngle | MinFeret |
| P1010005.JPG | 471   | 11689      | 24.817       | 0.302 | 255  | NaN   | NaN   | NaN   | 6.121 | 1438.301 | 1065.803 | 118.846    | 3.384    |



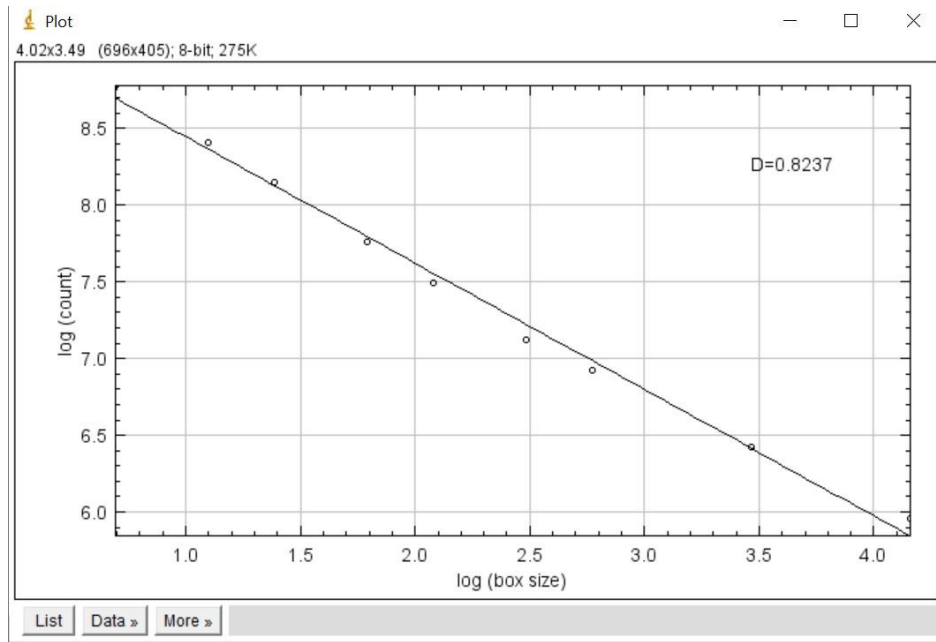
In cui osserviamo una percentuale di porosità pari a 0,302% e un  $D_0$  pari a 0,7693.

## Valori di saturazione del colore (0-10):



| Results |       |          |         |     |     |        |       |          |          |            |          |  |
|---------|-------|----------|---------|-----|-----|--------|-------|----------|----------|------------|----------|--|
| File    | Edit  | Font     | Results |     |     |        |       |          |          |            |          |  |
|         | Label | Area     | Mean    | Min | Max | Feret  | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |
| 683     |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 255.000  | 1697.000 | 135.000    | 1.000    |  |
| 684     |       | 3.000    | 255     | 255 | 255 | 3.162  | 100   | 1968.000 | 1698.000 | 108.435    | 1.000    |  |
| 685     |       | 73.000   | 255     | 255 | 255 | 15.232 | 100   | 2140.000 | 1698.000 | 156.801    | 6.000    |  |
| 686     |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 208.000  | 1699.000 | 135.000    | 1.000    |  |
| 687     |       | 2.000    | 255     | 255 | 255 | 2.236  | 100   | 255.000  | 1699.000 | 116.565    | 1.000    |  |
| 688     |       | 20.000   | 255     | 255 | 255 | 6.403  | 100   | 1025.000 | 1703.000 | 38.660     | 5.000    |  |
| 689     |       | 21.000   | 255     | 255 | 255 | 9.849  | 100   | 630.000  | 1700.000 | 156.038    | 4.000    |  |
| 690     |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 636.000  | 1700.000 | 135.000    | 1.000    |  |
| 691     |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 639.000  | 1700.000 | 135.000    | 1.000    |  |
| 692     |       | 8.000    | 255     | 255 | 255 | 6.403  | 100   | 1979.000 | 1700.000 | 141.340    | 2.774    |  |
| 693     |       | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 255.000  | 1702.000 | 135.000    | 1.000    |  |
| 694     |       | 8.000    | 255     | 255 | 255 | 6.325  | 100   | 352.000  | 1704.000 | 18.435     | 2.000    |  |
| 695     | Mean  | 48.841   | 255     | 255 | 255 | 8.125  | 100   | 1353.666 | 1068.491 | 116.001    | 4.636    |  |
| 696     | SD    | 119.431  | 0       | 0   | 0   | 9.703  | 0     | 705.673  | 491.569  | 38.001     | 5.716    |  |
| 697     | Min   | 1.000    | 255     | 255 | 255 | 1.414  | 100   | 0.000    | 1.000    | 6.582      | 1.000    |  |
| 698     | Max   | 1272.000 | 255     | 255 | 255 | 76.485 | 100   | 2271.000 | 1704.000 | 172.648    | 43.952   |  |

| Summary      |       |            |              |       |      |       |       |       |       |          |          |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|----------|------------|----------|
| File         | Edit  | Font       |              |       |      |       |       |       |       |          |          |            |          |
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY   | FeretAngle | MinFeret |
| P1010005.JPG | 694   | 33896      | 48.841       | 0.876 | 255  | NaN   | NaN   | NaN   | 8.125 | 1353.666 | 1068.491 | 116.001    | 4.636    |



In cui osserviamo una percentuale di porosità pari a 0,876% e un  $D_0$  pari a 0,8237.

## Campione 10 - 2 foto



(a)



(b)

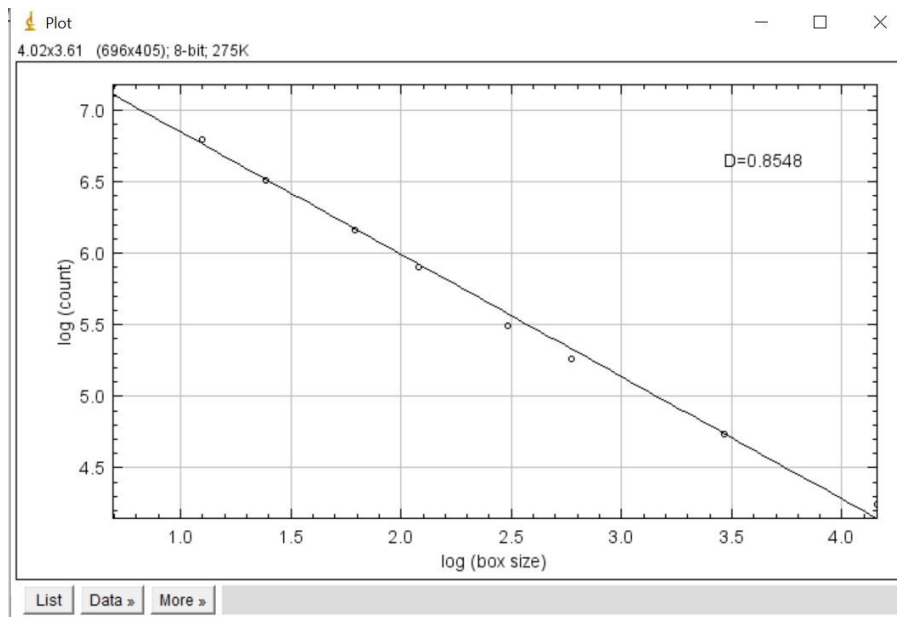
## Immagine (a)

### Valori di saturazione del colore (0-2)



| Label    | Area     | Mean | Min | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |
|----------|----------|------|-----|-----|---------|-------|----------|----------|------------|----------|
| 141      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 2096.000 | 1221.000 | 135.000    | 1.000    |
| 142      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 2211.000 | 1222.000 | 135.000    | 1.000    |
| 143      | 664.000  | 255  | 255 | 255 | 64.382  | 100   | 2208.000 | 1241.000 | 6.242      | 21.007   |
| 144      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 2248.000 | 1233.000 | 135.000    | 1.000    |
| 145      | 4.000    | 255  | 255 | 255 | 4.123   | 100   | 2212.000 | 1240.000 | 165.964    | 1.000    |
| 146      | 12.000   | 255  | 255 | 255 | 7.071   | 100   | 248.000  | 1250.000 | 135.000    | 3.536    |
| 147      | 7.000    | 255  | 255 | 255 | 4.243   | 100   | 1848.000 | 1286.000 | 45.000     | 2.828    |
| 148      | 3.000    | 255  | 255 | 255 | 2.828   | 100   | 1396.000 | 1511.000 | 135.000    | 2.000    |
| 149      | 3.000    | 255  | 255 | 255 | 2.828   | 100   | 2.000    | 1658.000 | 135.000    | 2.000    |
| 150      | 11.000   | 255  | 255 | 255 | 6.403   | 100   | 9.000    | 1663.000 | 128.660    | 3.479    |
| 151      | 3.000    | 255  | 255 | 255 | 3.162   | 100   | 210.000  | 1664.000 | 108.435    | 1.000    |
| 152      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 606.000  | 1672.000 | 135.000    | 1.000    |
| 153 Mean | 61.592   | 255  | 255 | 255 | 7.941   | 100   | 1348.138 | 995.783  | 120.070    | 3.359    |
| 154 SD   | 264.879  | 0    | 0   | 0   | 16.971  | 0     | 734.123  | 331.576  | 46.754     | 5.453    |
| 155 Min  | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 2.000    | 0.000    | 3.879      | 1.000    |
| 156 Max  | 2499.000 | 255  | 255 | 255 | 118.271 | 100   | 2248.000 | 1672.000 | 177.709    | 31.152   |

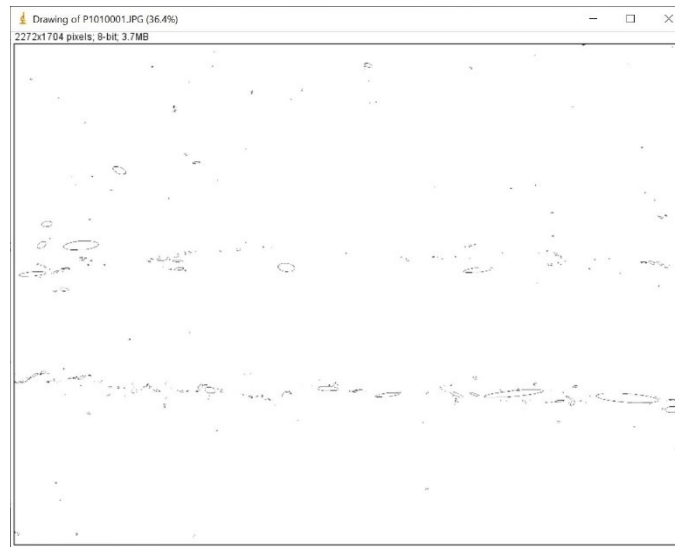
| File         | Edit  | Font       |              |       |      |       |       |       |       |          |         |            |          |  |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|----------|--|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFeret |  |
| P1010001.JPG | 152   | 9362       | 61.592       | 0.242 | 255  | NaN   | NaN   | NaN   | 7.941 | 1348.138 | 995.783 | 120.070    | 3.359    |  |



In cui osserviamo una percentuale di porosità pari a 0,242% e un D0 pari a 0,8548.

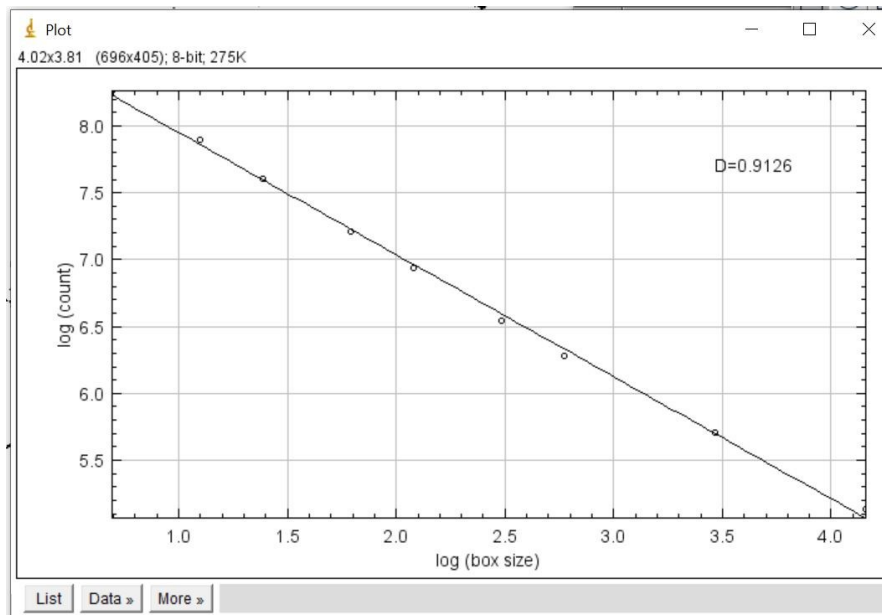


## Valori di saturazione del colore (0-10)



| Results |       |          |         |     |     |         |       |          |          |            |          |  |
|---------|-------|----------|---------|-----|-----|---------|-------|----------|----------|------------|----------|--|
| File    | Edit  | Font     | Results |     |     |         |       |          |          |            |          |  |
|         | Label | Area     | Mean    | Min | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |
| 355     |       | 2.000    | 255     | 255 | 255 | 2.236   | 100   | 1386.000 | 1285.000 | 116.565    | 1.000    |  |
| 356     |       | 1.000    | 255     | 255 | 255 | 1.414   | 100   | 2103.000 | 1300.000 | 135.000    | 1.000    |  |
| 357     |       | 5.000    | 255     | 255 | 255 | 3.606   | 100   | 688.000  | 1312.000 | 123.690    | 2.683    |  |
| 358     |       | 2.000    | 255     | 255 | 255 | 2.236   | 100   | 686.000  | 1314.000 | 116.565    | 1.000    |  |
| 359     |       | 10.000   | 255     | 255 | 255 | 5.831   | 100   | 2243.000 | 1377.000 | 30.964     | 2.846    |  |
| 360     |       | 23.000   | 255     | 255 | 255 | 7.071   | 100   | 136.000  | 1490.000 | 135.000    | 5.000    |  |
| 361     |       | 62.000   | 255     | 255 | 255 | 13.454  | 100   | 1395.000 | 1519.000 | 41.987     | 8.800    |  |
| 362     |       | 6.000    | 255     | 255 | 255 | 5.000   | 100   | 152.000  | 1553.000 | 36.870     | 2.683    |  |
| 363     |       | 17.000   | 255     | 255 | 255 | 6.403   | 100   | 1.000    | 1661.000 | 38.660     | 4.919    |  |
| 364     |       | 39.000   | 255     | 255 | 255 | 8.944   | 100   | 10.000   | 1661.000 | 116.565    | 7.000    |  |
| 365     |       | 21.000   | 255     | 255 | 255 | 7.810   | 100   | 208.000  | 1669.000 | 39.806     | 4.243    |  |
| 366     |       | 33.000   | 255     | 255 | 255 | 13.601  | 100   | 605.000  | 1674.000 | 36.027     | 5.406    |  |
| 367     | Mean  | 74.374   | 255     | 255 | 255 | 9.987   | 100   | 988.913  | 918.566  | 108.722    | 3.977    |  |
| 368     | SD    | 363.257  | 0       | 0   | 0   | 24.185  | 0     | 700.732  | 352.048  | 50.156     | 5.761    |  |
| 369     | Min   | 1.000    | 255     | 255 | 255 | 1.414   | 100   | 0.000    | 2.000    | 3.240      | 1.000    |  |
| 370     | Max   | 4846.000 | 255     | 255 | 255 | 274.729 | 100   | 2259.000 | 1674.000 | 177.138    | 43.043   |  |

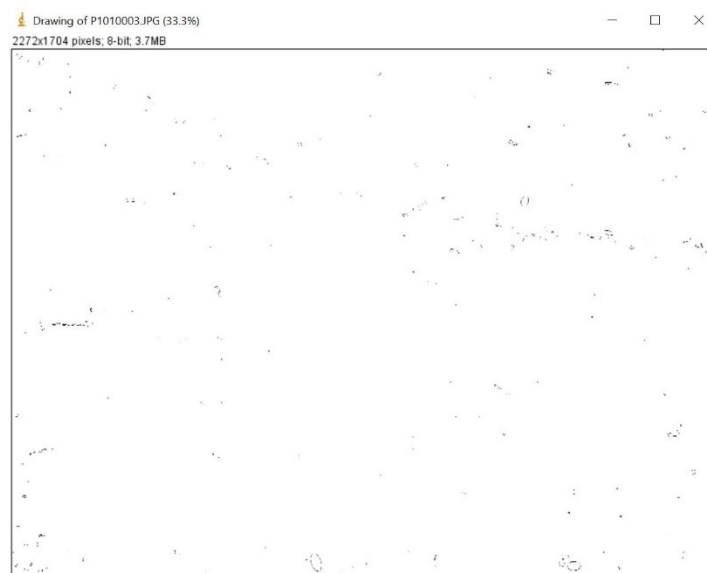
| Summary      |       |            |              |       |      |       |       |       |       |         |         |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|---------|---------|------------|----------|
| File         | Edit  | Font       |              |       |      |       |       |       |       |         |         |            |          |
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX  | FeretY  | FeretAngle | MinFeret |
| P1010001.JPG | 366   | 27221      | 74.374       | 0.703 | 255  | NaN   | NaN   | NaN   | 9.987 | 988.913 | 918.566 | 108.722    | 3.977    |

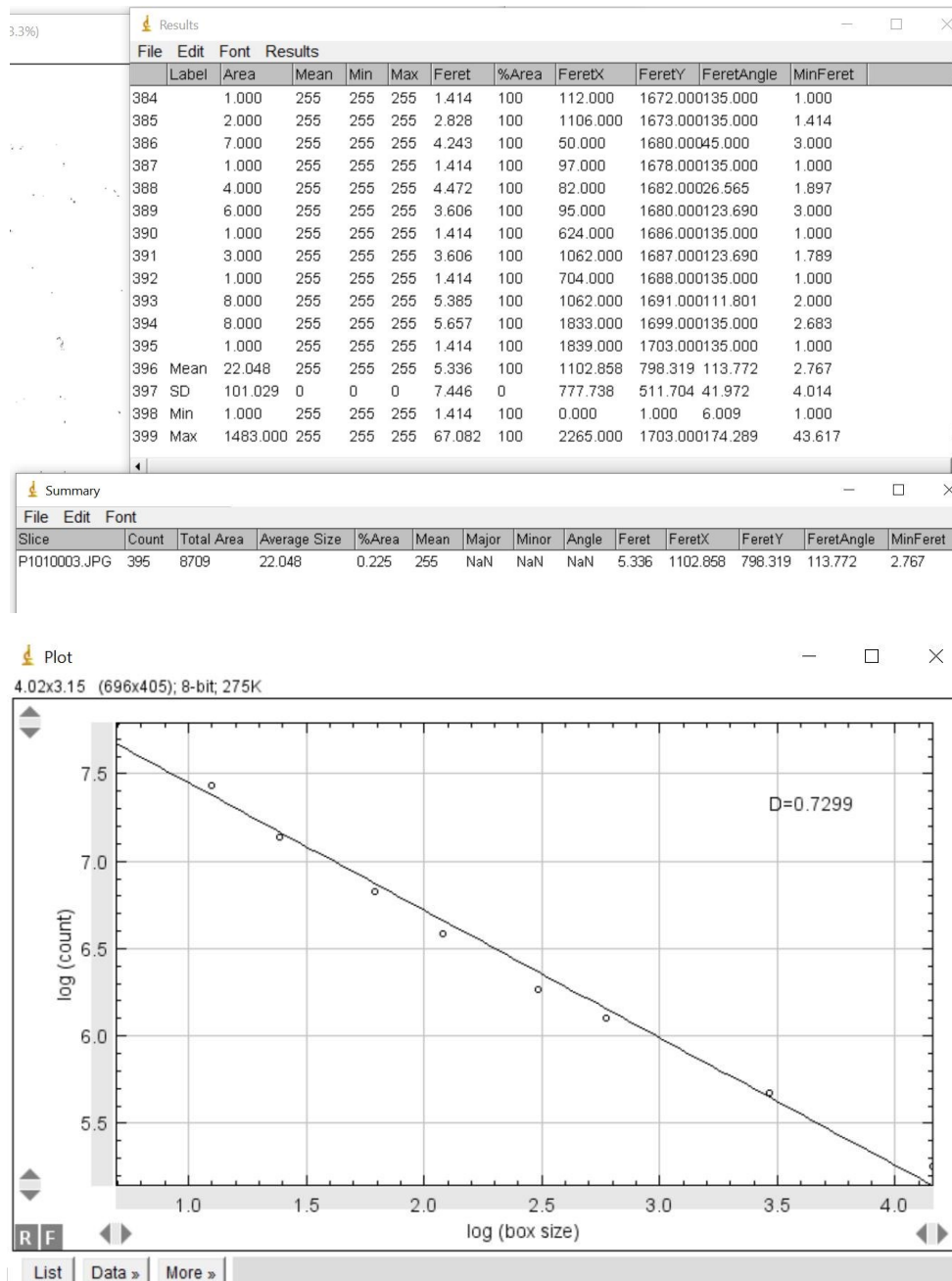


In cui osserviamo una percentuale di porosità pari a 0,703% e un D0 pari a 0,9126.

## Immagine (b)

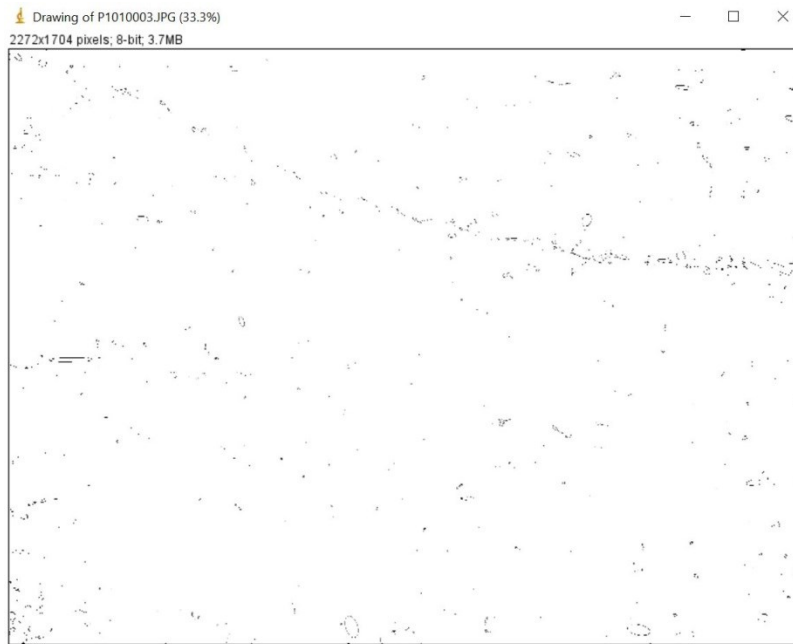
### Valori di saturazione del colore (0-2)





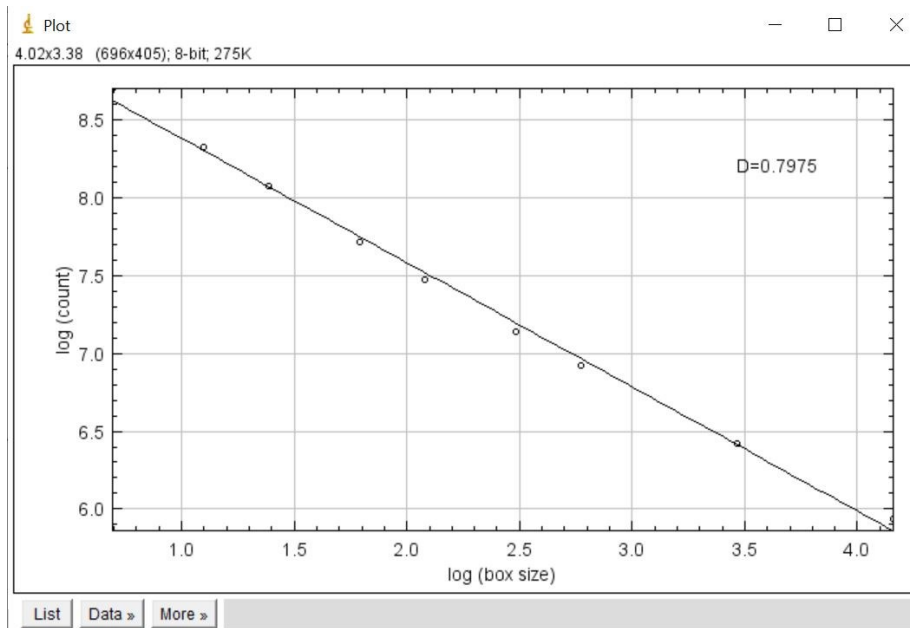
In cui osserviamo una percentuale di porosità pari a 0,225% e un D0 pari a 0,7299.

## Valori di saturazione del colore (0-10)



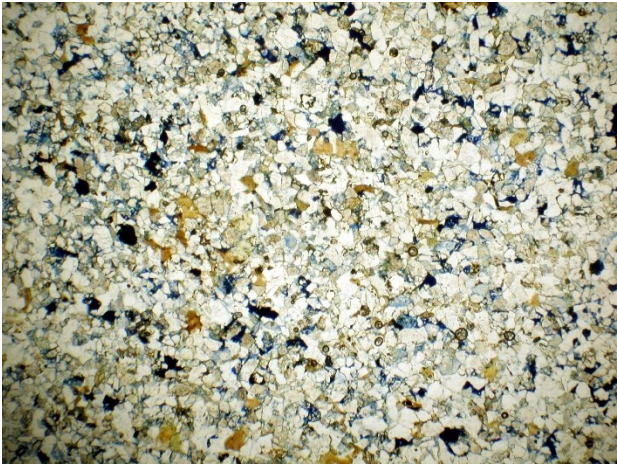
| Results |       |          |         |     |     |         |       |          |          |            |          |  |
|---------|-------|----------|---------|-----|-----|---------|-------|----------|----------|------------|----------|--|
| File    | Edit  | Font     | Results |     |     |         |       |          |          |            |          |  |
|         | Label | Area     | Mean    | Min | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |
| 872     |       | 24.000   | 255     | 255 | 255 | 7.616   | 100   | 701.000  | 1690.000 | 23.199     | 5.000    |  |
| 873     |       | 2.000    | 255     | 255 | 255 | 2.828   | 100   | 63.000   | 1689.000 | 45.000     | 1.414    |  |
| 874     |       | 15.000   | 255     | 255 | 255 | 8.485   | 100   | 47.000   | 1694.000 | 45.000     | 4.243    |  |
| 875     |       | 1.000    | 255     | 255 | 255 | 1.414   | 100   | 1910.000 | 1694.000 | 135.000    | 1.000    |  |
| 876     |       | 18.000   | 255     | 255 | 255 | 10.630  | 100   | 1832.000 | 1697.000 | 138.814    | 4.097    |  |
| 877     |       | 2.000    | 255     | 255 | 255 | 2.236   | 100   | 40.000   | 1698.000 | 116.565    | 1.000    |  |
| 878     |       | 1.000    | 255     | 255 | 255 | 1.414   | 100   | 622.000  | 1698.000 | 135.000    | 1.000    |  |
| 879     |       | 24.000   | 255     | 255 | 255 | 13.342  | 100   | 968.000  | 1702.000 | 12.995     | 3.818    |  |
| 880     |       | 28.000   | 255     | 255 | 255 | 10.770  | 100   | 34.000   | 1704.000 | 21.801     | 4.000    |  |
| 881     |       | 1.000    | 255     | 255 | 255 | 1.414   | 100   | 693.000  | 1700.000 | 135.000    | 1.000    |  |
| 882     |       | 1.000    | 255     | 255 | 255 | 1.414   | 100   | 1067.000 | 1701.000 | 135.000    | 1.000    |  |
| 883     |       | 2.000    | 255     | 255 | 255 | 2.236   | 100   | 1179.000 | 1701.000 | 116.565    | 1.000    |  |
| 884     |       | 6.000    | 255     | 255 | 255 | 4.472   | 100   | 448.000  | 1702.000 | 153.435    | 2.000    |  |
| 885     |       | 2.000    | 255     | 255 | 255 | 2.236   | 100   | 45.000   | 1703.000 | 153.435    | 1.000    |  |
| 886     | Mean  | 26.744   | 255     | 255 | 255 | 6.079   | 100   | 1184.531 | 797.652  | 113.931    | 3.142    |  |
| 887     | SD    | 115.382  | 0       | 0   | 0   | 10.357  | 0     | 746.360  | 506.290  | 43.072     | 4.335    |  |
| 888     | Min   | 1.000    | 255     | 255 | 255 | 1.414   | 100   | 0.000    | 0.000    | 3.270      | 1.000    |  |
| 889     | Max   | 1731.000 | 255     | 255 | 255 | 164.049 | 100   | 2269.000 | 1704.000 | 178.603    | 46.065   |  |

| Summary      |       |            |              |       |      |       |       |       |       |          |         |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|---------|------------|----------|
| File         | Edit  | Font       |              |       |      |       |       |       |       |          |         |            |          |
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY  | FeretAngle | MinFeret |
| P1010003.JPG | 885   | 23668      | 26.744       | 0.611 | 255  | NaN   | NaN   | NaN   | 6.079 | 1184.531 | 797.652 | 113.931    | 3.142    |

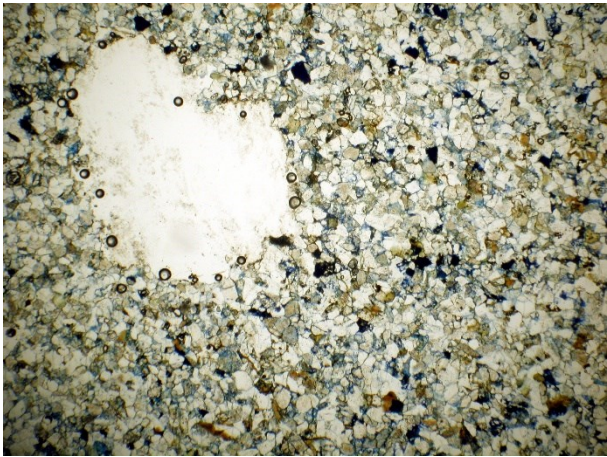


In cui osserviamo una percentuale di porosità pari a 0,611% e un  $D_0$  pari a 0,7975.

**Campione 11 - 2 foto**



(b)

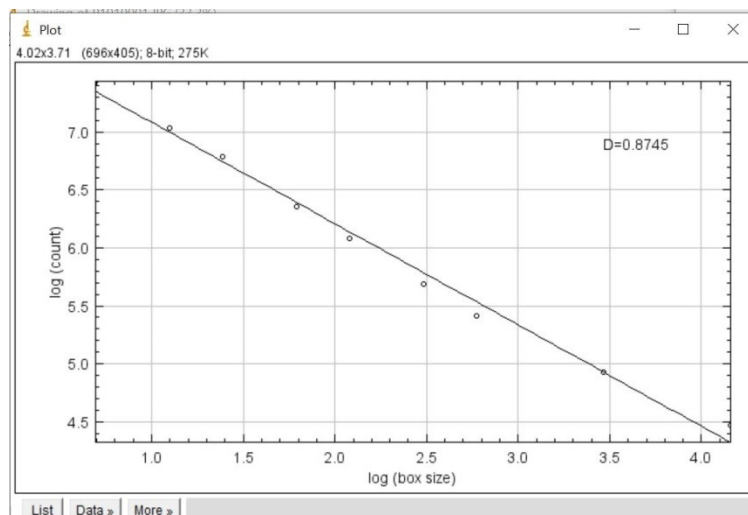
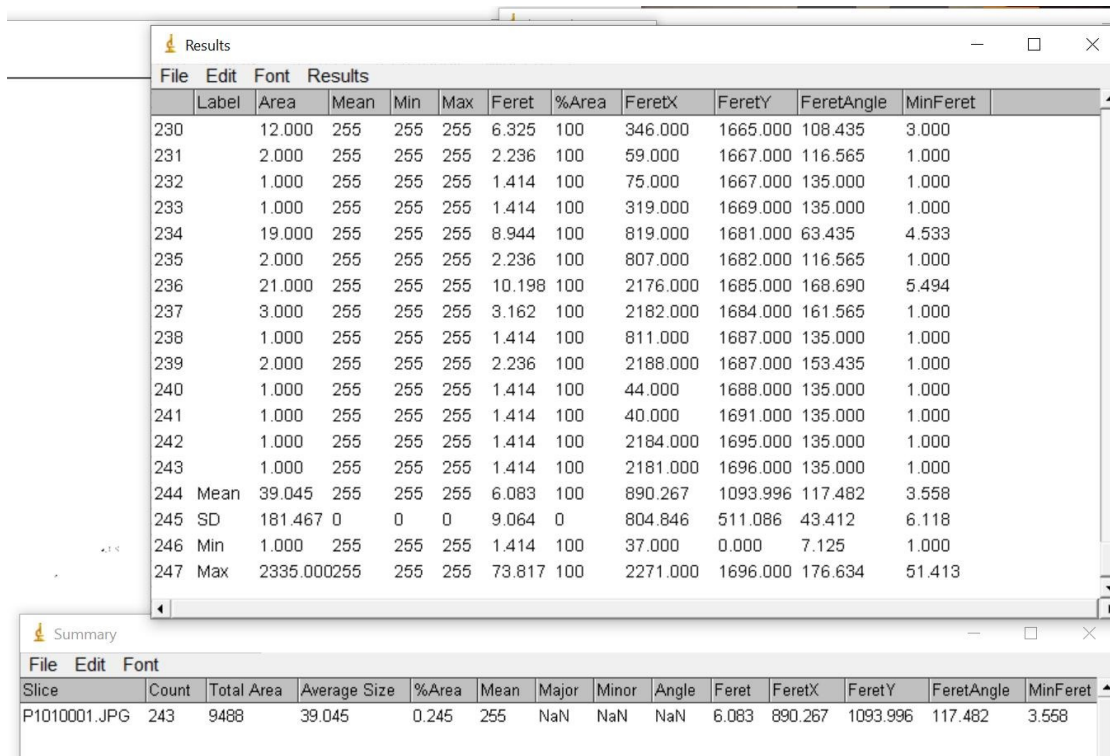


(a)

**Immagine (a)**

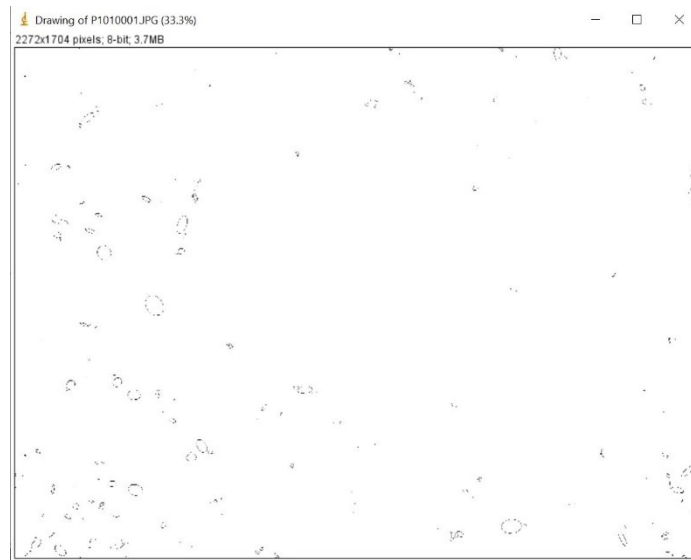
Valori di saturazione del colore (0-2)





In cui osserviamo una percentuale di porosità pari a 0,245% e un D0 pari a 0,8745.

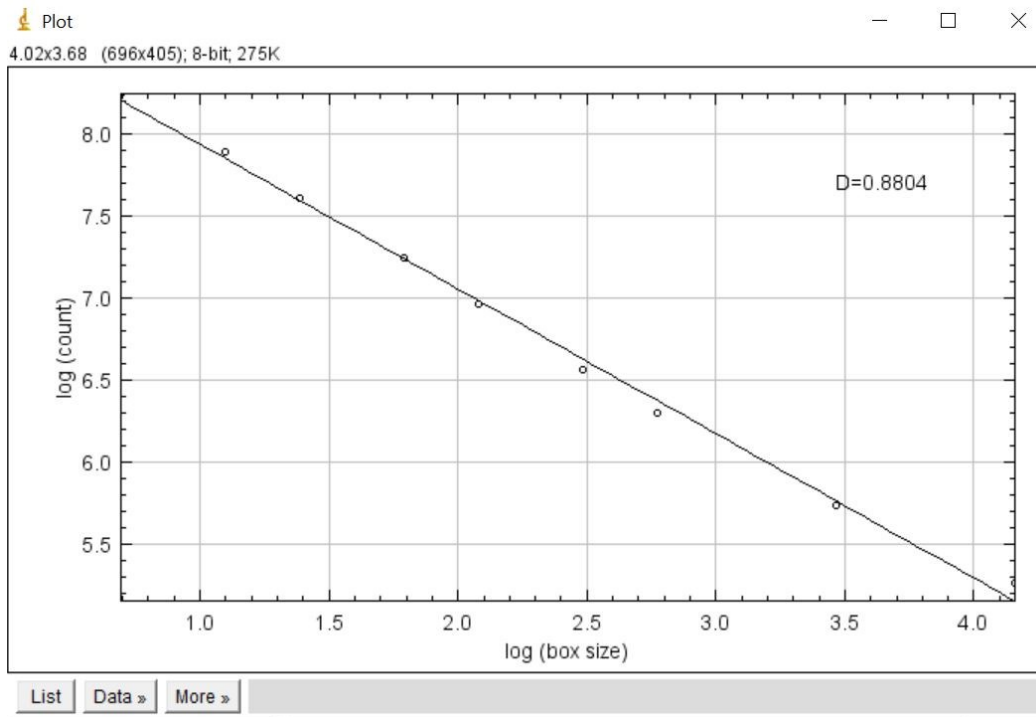
## Valori di saturazione del colore (0-10)



| Results |         |          |         |     |        |         |          |          |            |          |        |  |
|---------|---------|----------|---------|-----|--------|---------|----------|----------|------------|----------|--------|--|
| File    | Edit    | Font     | Results |     |        |         |          |          |            |          |        |  |
| Label   | Area    | Mean     | Min     | Max | Feret  | %Area   | FeretX   | FeretY   | FeretAngle | MinFeret |        |  |
| 321     | 58.000  | 255      | 255     | 255 | 20.616 | 100     | 38.000   | 1694.000 | 50.906     | 6.364    |        |  |
| 322     | 103.000 | 255      | 255     | 255 | 18.028 | 100     | 801.000  | 1680.000 | 146.310    | 10.400   |        |  |
| 323     | 251.000 | 255      | 255     | 255 | 27.203 | 100     | 2172.000 | 1687.000 | 162.897    | 15.646   |        |  |
| 324     | 1.000   | 255      | 255     | 255 | 1.414  | 100     | 867.000  | 1685.000 | 135.000    | 1.000    |        |  |
| 325     | 6.000   | 255      | 255     | 255 | 5.099  | 100     | 866.000  | 1687.000 | 101.310    | 2.000    |        |  |
| 326     | 10.000  | 255      | 255     | 255 | 7.211  | 100     | 874.000  | 1694.000 | 123.690    | 3.200    |        |  |
| 327     | 84.000  | 255      | 255     | 255 | 14.213 | 100     | 2229.000 | 1695.000 | 140.711    | 10.000   |        |  |
| 328     | 1.000   | 255      | 255     | 255 | 1.414  | 100     | 34.000   | 1695.000 | 135.000    | 1.000    |        |  |
| 329     | 21.000  | 255      | 255     | 255 | 8.544  | 100     | 2269.000 | 1696.000 | 110.556    | 4.000    |        |  |
| 330     | 3.000   | 255      | 255     | 255 | 3.606  | 100     | 370.000  | 1700.000 | 56.310     | 1.789    |        |  |
| 331     | 2.000   | 255      | 255     | 255 | 2.236  | 100     | 869.000  | 1701.000 | 116.565    | 1.000    |        |  |
| 332     | 2.000   | 255      | 255     | 255 | 2.236  | 100     | 878.000  | 1701.000 | 153.435    | 1.000    |        |  |
| 333     | 2.000   | 255      | 255     | 255 | 2.236  | 100     | 216.000  | 1702.000 | 116.565    | 1.000    |        |  |
| 334     | 1.000   | 255      | 255     | 255 | 1.414  | 100     | 880.000  | 1703.000 | 135.000    | 1.000    |        |  |
| 335     | Mean    | 98.111   | 255     | 255 | 255    | 9.863   | 100      | 979.787  | 935.608    | 113.097  | 5.484  |  |
| 336     | SD      | 308.820  | 0       | 0   | 0      | 15.326  | 0        | 705.723  | 572.955    | 42.509   | 8.712  |  |
| 337     | Min     | 1.000    | 255     | 255 | 255    | 1.414   | 100      | 0.000    | 0.000      | 5.013    | 1.000  |  |
| 338     | Max     | 3086.000 | 255     | 255 | 255    | 108.060 | 100      | 2271.000 | 1703.000   | 178.025  | 59.016 |  |

| Summary      |       |            |              |       |      |       |       |       |       |         |         |            |          |  |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|---------|---------|------------|----------|--|
| File         | Edit  | Font       |              |       |      |       |       |       |       |         |         |            |          |  |
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX  | FeretY  | FeretAngle | MinFeret |  |
| P1010001.JPG | 334   | 32769      | 98.111       | 0.846 | 255  | NaN   | NaN   | NaN   | 9.863 | 979.787 | 935.608 | 113.097    | 5.484    |  |



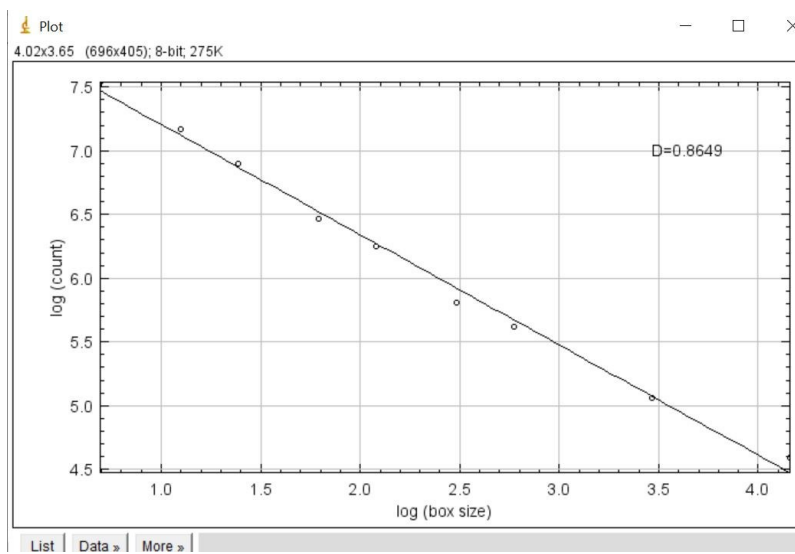
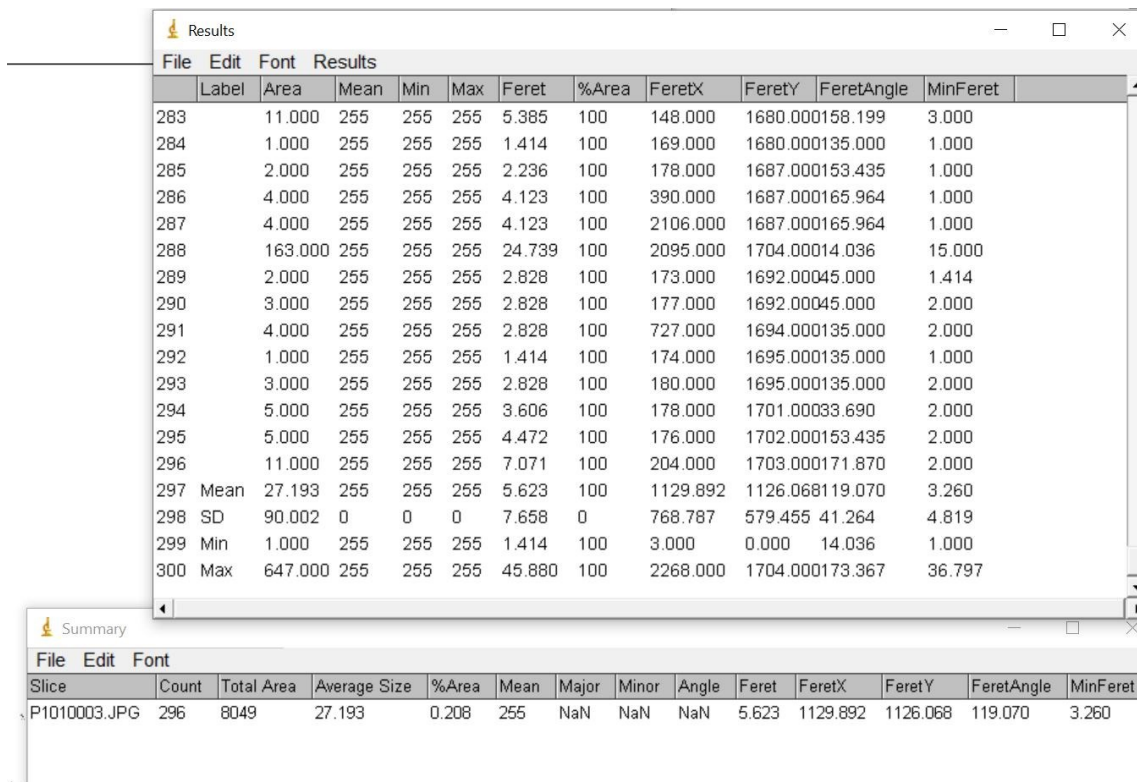


In cui osserviamo una percentuale di porosità pari a 0,846% e un  $D_0$  pari a 0,8804.

### Immagine (b)

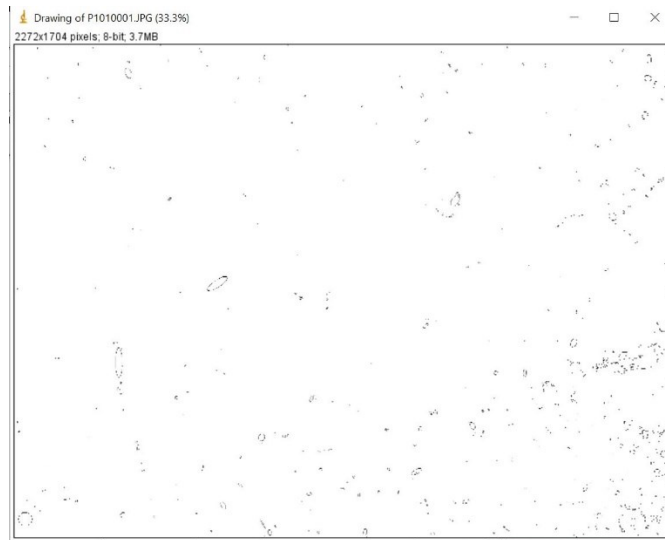
Valori di saturazione del colore (0-2)





In cui osserviamo una percentuale di porosità pari a 0,208% e un D0 pari a 0,8649.

## Valori di saturazione del colore (0-10)

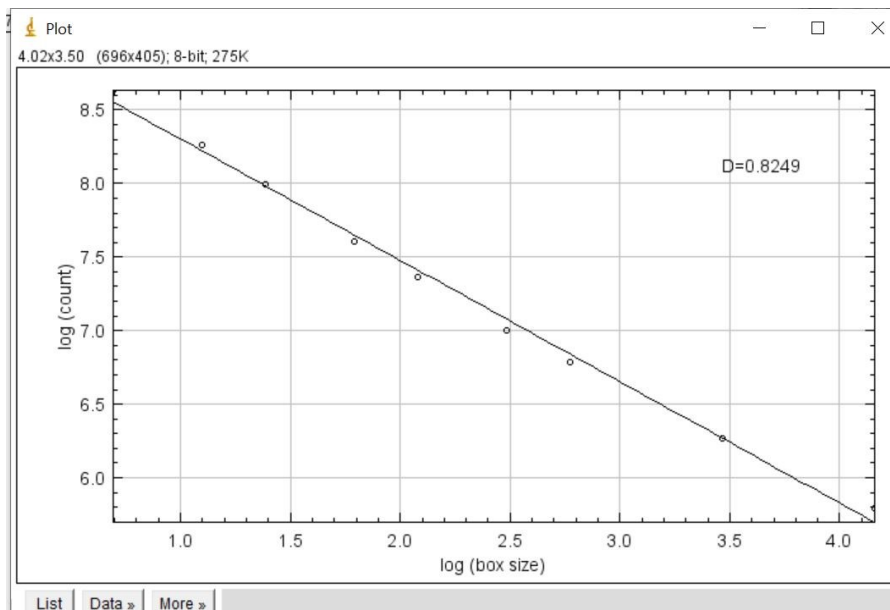


Summary

| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX   | FeretY   | FeretAngle | MinFeret |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|----------|----------|------------|----------|
| P1010001.JPG | 703   | 25859      | 36.784       | 0.668 | 255  | NaN   | NaN   | NaN   | 7.053 | 1644.795 | 1058.846 | 116.790    | 3.912    |

Results

| Label    | Area     | Mean | Min | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |
|----------|----------|------|-----|-----|---------|-------|----------|----------|------------|----------|
| 692      | 34.000   | 255  | 255 | 255 | 9.434   | 100   | 1658.000 | 1692.000 | 57.995     | 6.261    |
| 693      | 122.000  | 255  | 255 | 255 | 17.889  | 100   | 1440.000 | 1685.000 | 16.565     | 12.403   |
| 694      | 4.000    | 255  | 255 | 255 | 4.243   | 100   | 2224.000 | 1689.000 | 135.000    | 2.121    |
| 695      | 3.000    | 255  | 255 | 255 | 3.162   | 100   | 1970.000 | 1691.000 | 108.435    | 1.000    |
| 696      | 4.000    | 255  | 255 | 255 | 3.606   | 100   | 2227.000 | 1695.000 | 56.310     | 2.000    |
| 697      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 1935.000 | 1695.000 | 135.000    | 1.000    |
| 698      | 2.000    | 255  | 255 | 255 | 2.236   | 100   | 2158.000 | 1696.000 | 16.565     | 1.000    |
| 699      | 2.000    | 255  | 255 | 255 | 2.236   | 100   | 864.000  | 1698.000 | 16.565     | 1.000    |
| 700      | 5.000    | 255  | 255 | 255 | 4.243   | 100   | 1944.000 | 1699.000 | 135.000    | 2.236    |
| 701      | 5.000    | 255  | 255 | 255 | 3.606   | 100   | 1219.000 | 1700.000 | 123.690    | 2.000    |
| 702      | 3.000    | 255  | 255 | 255 | 3.162   | 100   | 1720.000 | 1703.000 | 161.565    | 1.000    |
| 703      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 2236.000 | 1703.000 | 135.000    | 1.000    |
| 704 Mean | 36.784   | 255  | 255 | 255 | 7.053   | 100   | 1644.795 | 1058.846 | 116.790    | 3.912    |
| 705 SD   | 133.505  | 0    | 0   | 0   | 9.279   | 0     | 643.116  | 487.984  | 36.680     | 5.020    |
| 706 Min  | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 1.000    | 0.000    | 12.995     | 1.000    |
| 707 Max  | 1866.000 | 255  | 255 | 255 | 108.462 | 100   | 2271.000 | 1703.000 | 173.660    | 51.975   |



In cui osserviamo una percentuale di porosità pari a 0,668% e un  $D_0$  pari 0,8249.

## Campione 12 - 2 foto



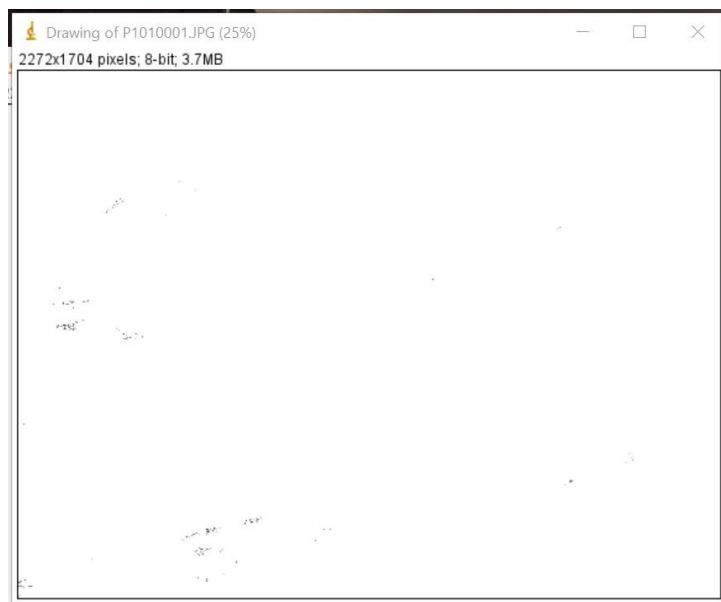
(a)



(b)

## Immagine (a)

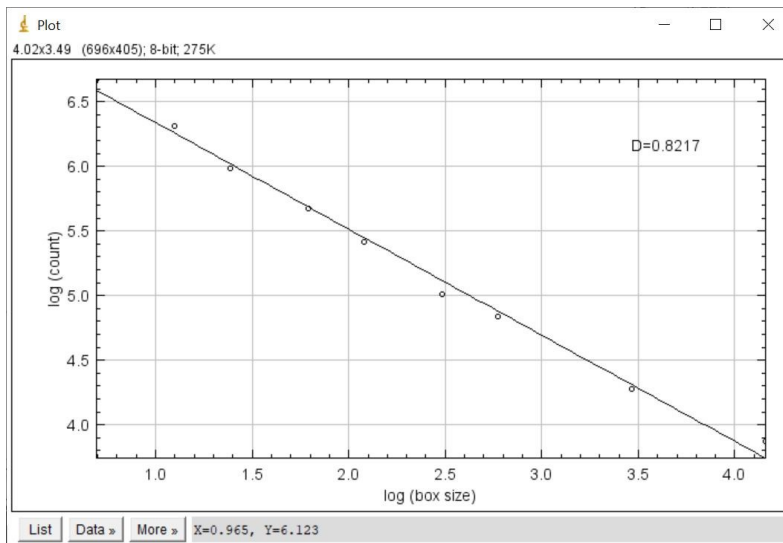
### Valori di saturazione del colore (0-2)



#### Results

| File  | Edit   | Font   | Results |     |        |       |          |          |            |          |  |
|-------|--------|--------|---------|-----|--------|-------|----------|----------|------------|----------|--|
| Label | Area   | Mean   | Min     | Max | Feret  | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |
| 176   | 3.000  | 255    | 255     | 255 | 2.828  | 100   | 21.000   | 1647.000 | 45.000     | 2.000    |  |
| 177   | 6.000  | 255    | 255     | 255 | 6.708  | 100   | 2.000    | 1651.000 | 26.565     | 2.414    |  |
| 178   | 1.000  | 255    | 255     | 255 | 1.414  | 100   | 9.000    | 1648.000 | 135.000    | 1.000    |  |
| 179   | 1.000  | 255    | 255     | 255 | 1.414  | 100   | 608.000  | 1648.000 | 135.000    | 1.000    |  |
| 180   | 10.000 | 255    | 255     | 255 | 6.708  | 100   | 0.000    | 1654.000 | 26.565     | 2.846    |  |
| 181   | 13.000 | 255    | 255     | 255 | 5.657  | 100   | 6.000    | 1662.000 | 135.000    | 4.000    |  |
| 182   | 6.000  | 255    | 255     | 255 | 4.472  | 100   | 0.000    | 1665.000 | 26.565     | 2.000    |  |
| 183   | 18.000 | 255    | 255     | 255 | 8.062  | 100   | 37.000   | 1663.000 | 150.255    | 5.400    |  |
| 184   | 2.000  | 255    | 255     | 255 | 2.236  | 100   | 44.000   | 1663.000 | 153.435    | 1.000    |  |
| 185   | 2.000  | 255    | 255     | 255 | 2.236  | 100   | 32.000   | 1665.000 | 116.565    | 1.000    |  |
| 186   | 2.000  | 255    | 255     | 255 | 2.828  | 100   | 12.000   | 1668.000 | 45.000     | 1.414    |  |
| 187   | 7.000  | 255    | 255     | 255 | 5.385  | 100   | 16.000   | 1669.000 | 21.801     | 2.000    |  |
| 188   | 2.000  | 255    | 255     | 255 | 2.236  | 100   | 3.000    | 1692.000 | 153.435    | 1.000    |  |
| 189   | 4.000  | 255    | 255     | 255 | 3.606  | 100   | 0.000    | 1698.000 | 146.310    | 2.000    |  |
| 190   | Mean   | 5.037  | 255     | 255 | 3.180  | 100   | 552.571  | 1148.217 | 122.831    | 1.695    |  |
| 191   | SD     | 10.747 | 0       | 0   | 3.093  | 0     | 500.163  | 406.541  | 42.934     | 1.547    |  |
| 192   | Min    | 1.000  | 255     | 255 | 1.414  | 100   | 0.000    | 351.000  | 15.945     | 1.000    |  |
| 193   | Max    | 87.000 | 255     | 255 | 21.213 | 100   | 2271.000 | 1698.000 | 171.870    | 10.000   |  |

| File Edit Font |       |            |              |       |      |       |       |       |       |         |          |            |          |  |
|----------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|---------|----------|------------|----------|--|
| Slice          | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX  | FeretY   | FeretAngle | MinFeret |  |
| P1010001.JPG   | 189   | 952        | 5.037        | 0.025 | 255  | NaN   | NaN   | NaN   | 3.180 | 552.571 | 1148.217 | 122.831    | 1.695    |  |



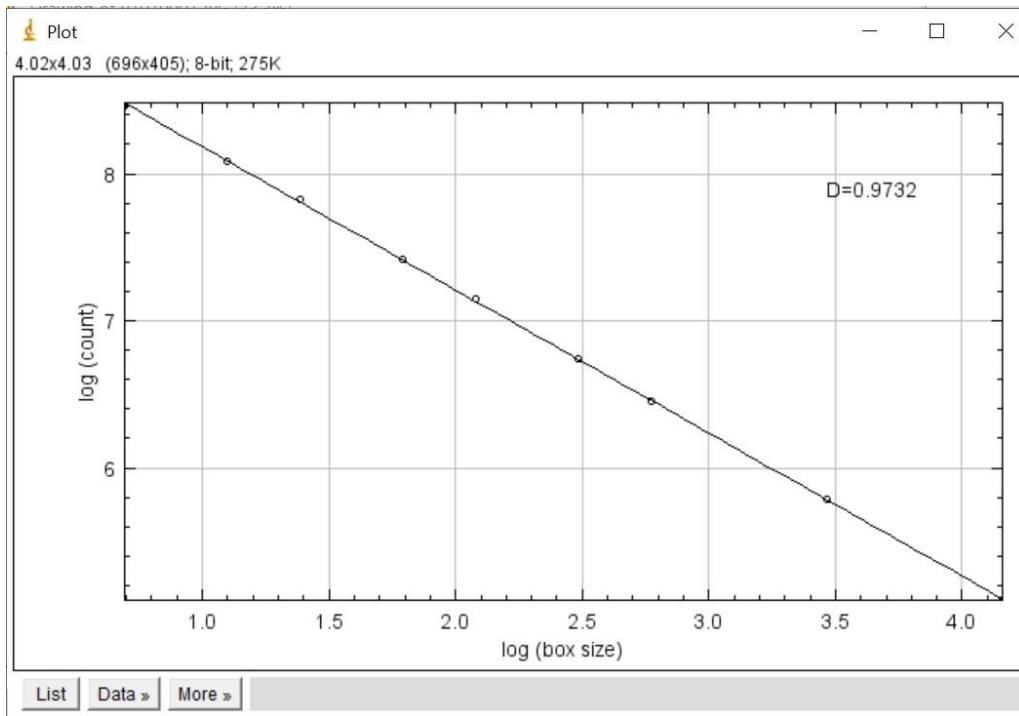
In cui osserviamo una percentuale di porosità pari a 0,025% e un D0 pari a 0,8217.

## Valori di saturazione del colore (0-10)



| Results  |          |      |     |     |         |       |          |          |            |          |  |
|----------|----------|------|-----|-----|---------|-------|----------|----------|------------|----------|--|
| Label    | Area     | Mean | Min | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |
| 443      | 127.000  | 255  | 255 | 255 | 22.561  | 100   | 558.000  | 1645.000 | 12.804     | 11.257   |  |
| 444      | 88.000   | 255  | 255 | 255 | 16.279  | 100   | 0.000    | 1657.000 | 47.490     | 9.436    |  |
| 445      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 159.000  | 1646.000 | 135.000    | 1.000    |  |
| 446      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 159.000  | 1648.000 | 135.000    | 1.000    |  |
| 447      | 6.000    | 255  | 255 | 255 | 3.606   | 100   | 303.000  | 1652.000 | 146.310    | 3.000    |  |
| 448      | 4.000    | 255  | 255 | 255 | 4.123   | 100   | 578.000  | 1652.000 | 104.036    | 1.000    |  |
| 449      | 2.000    | 255  | 255 | 255 | 2.236   | 100   | 574.000  | 1655.000 | 153.435    | 1.000    |  |
| 450      | 3.000    | 255  | 255 | 255 | 2.828   | 100   | 574.000  | 1659.000 | 45.000     | 2.000    |  |
| 451      | 372.000  | 255  | 255 | 255 | 49.244  | 100   | 0.000    | 1669.000 | 12.907     | 13.352   |  |
| 452      | 15.000   | 255  | 255 | 255 | 6.708   | 100   | 2263.000 | 1679.000 | 26.565     | 4.000    |  |
| 453      | 223.000  | 255  | 255 | 255 | 33.015  | 100   | 0.000    | 1703.000 | 54.866     | 16.027   |  |
| 454      | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 55.000   | 1687.000 | 135.000    | 1.000    |  |
| 455      | 19.000   | 255  | 255 | 255 | 7.280   | 100   | 15.000   | 1700.000 | 164.055    | 5.000    |  |
| 456      | 29.000   | 255  | 255 | 255 | 10.198  | 100   | 394.000  | 1702.000 | 168.690    | 4.000    |  |
| 457 Mean | 79.333   | 255  | 255 | 255 | 9.515   | 100   | 873.649  | 875.314  | 109.557    | 4.087    |  |
| 458 SD   | 339.485  | 0    | 0   | 0   | 23.787  | 0     | 652.609  | 467.788  | 49.426     | 6.842    |  |
| 459 Min  | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 0.000    | 10.000   | 3.468      | 1.000    |  |
| 460 Max  | 4044.000 | 255  | 255 | 255 | 342.042 | 100   | 2271.000 | 1703.000 | 178.264    | 49.774   |  |

| Summary      |       |            |              |       |      |       |       |       |       |         |         |            |          |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|---------|---------|------------|----------|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX  | FeretY  | FeretAngle | MinFeret |
| P1010001.JPG | 456   | 36176      | 79.333       | 0.934 | 255  | NaN   | NaN   | NaN   | 9.515 | 873.649 | 875.314 | 109.557    | 4.087    |

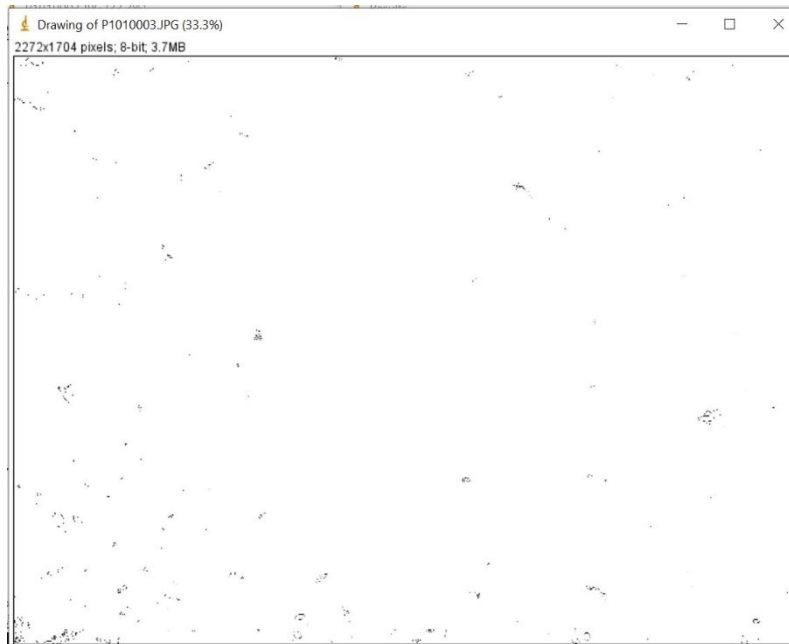


In cui osserviamo una percentuale di porosità pari a 0,934% e un D0 pari a 0,9732.



**Immagine (b)**

Valori di saturazione del colore (0-2)

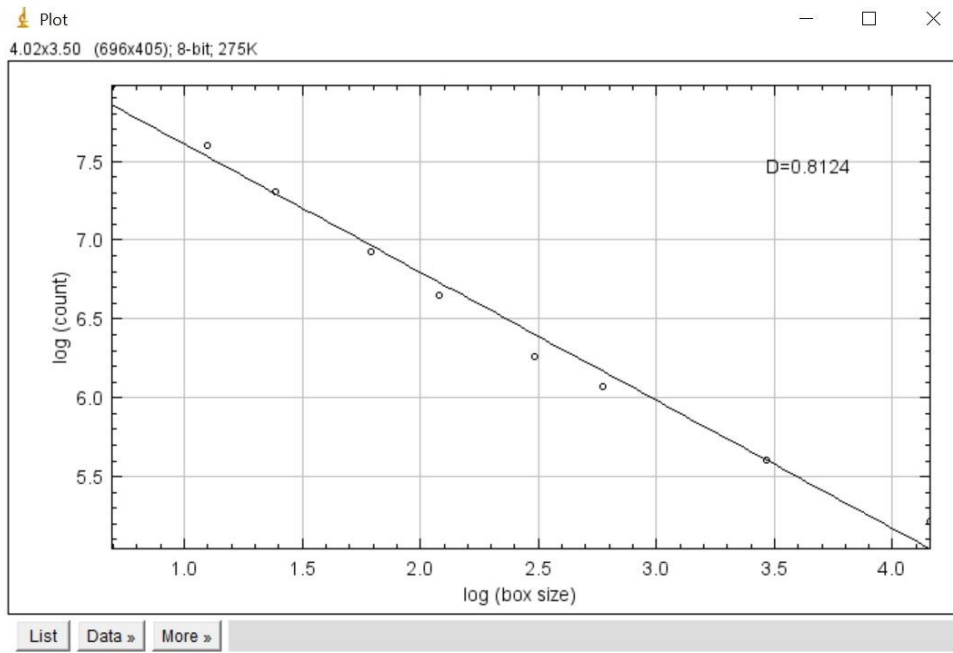


Results

| File | Edit  | Font    | Results |     |     |        |       |          |          |            |          |  |
|------|-------|---------|---------|-----|-----|--------|-------|----------|----------|------------|----------|--|
|      | Label | Area    | Mean    | Min | Max | Feret  | %Area | FeretX   | FeretY   | FeretAngle | MinFeret |  |
| 508  |       | 2.000   | 255     | 255 | 255 | 2.236  | 100   | 300.000  | 1697.000 | 116.565    | 1.000    |  |
| 509  |       | 5.000   | 255     | 255 | 255 | 3.606  | 100   | 275.000  | 1698.000 | 123.690    | 2.000    |  |
| 510  |       | 3.000   | 255     | 255 | 255 | 3.162  | 100   | 1164.000 | 1698.000 | 161.565    | 1.000    |  |
| 511  |       | 3.000   | 255     | 255 | 255 | 2.828  | 100   | 267.000  | 1699.000 | 135.000    | 2.000    |  |
| 512  |       | 2.000   | 255     | 255 | 255 | 2.236  | 100   | 1168.000 | 1699.000 | 153.435    | 1.000    |  |
| 513  |       | 8.000   | 255     | 255 | 255 | 4.243  | 100   | 120.000  | 1703.000 | 45.000     | 3.000    |  |
| 514  |       | 5.000   | 255     | 255 | 255 | 4.472  | 100   | 299.000  | 1704.000 | 63.435     | 2.000    |  |
| 515  |       | 2.000   | 255     | 255 | 255 | 2.236  | 100   | 6.000    | 1701.000 | 153.435    | 1.000    |  |
| 516  |       | 2.000   | 255     | 255 | 255 | 2.236  | 100   | 11.000   | 1702.000 | 116.565    | 1.000    |  |
| 517  |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 133.000  | 1702.000 | 135.000    | 1.000    |  |
| 518  |       | 3.000   | 255     | 255 | 255 | 2.828  | 100   | 272.000  | 1704.000 | 45.000     | 2.000    |  |
| 519  |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 24.000   | 1703.000 | 135.000    | 1.000    |  |
| 520  |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 1157.000 | 1703.000 | 135.000    | 1.000    |  |
| 521  |       | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 2134.000 | 1703.000 | 135.000    | 1.000    |  |
| 522  | Mean  | 16.827  | 255     | 255 | 255 | 5.048  | 100   | 789.382  | 1091.155 | 115.266    | 2.765    |  |
| 523  | SD    | 65.413  | 0       | 0   | 0   | 6.407  | 0     | 711.692  | 567.984  | 42.171     | 3.769    |  |
| 524  | Min   | 1.000   | 255     | 255 | 255 | 1.414  | 100   | 0.000    | 0.000    | 6.242      | 1.000    |  |
| 525  | Max   | 979.000 | 255     | 255 | 255 | 64.382 | 100   | 2270.000 | 1704.000 | 176.309    | 35.330   |  |

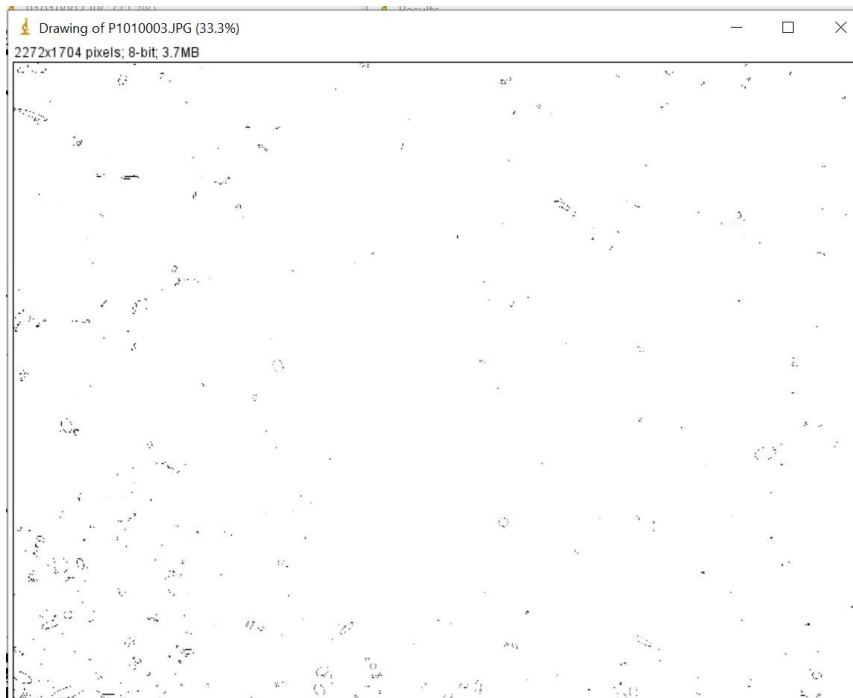
Summary

| File         | Edit  | Font       |              |       |      |       |       |       |       |         |          |            |          |  |
|--------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|---------|----------|------------|----------|--|
| Slice        | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX  | FeretY   | FeretAngle | MinFeret |  |
| P1010003.JPG | 521   | 8767       | 16.827       | 0.226 | 255  | NaN   | NaN   | NaN   | 5.048 | 789.382 | 1091.155 | 115.266    | 2.765    |  |



In cui osserviamo una percentuale di porosità pari a 0,226% e un D0 pari a 0,8124.

### Valori di saturazione del colore (0-10)

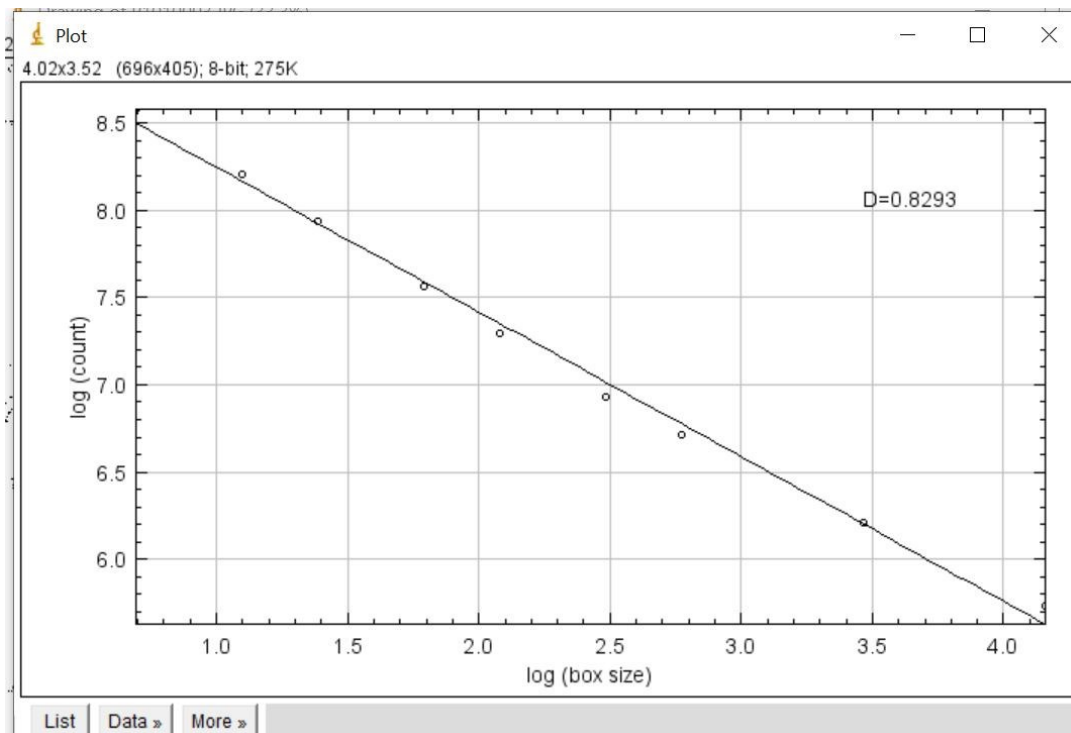


Results

| File Edit Font Results |       |          |      |     |     |         |       |          |          |            |           |
|------------------------|-------|----------|------|-----|-----|---------|-------|----------|----------|------------|-----------|
|                        | Label | Area     | Mean | Min | Max | Feret   | %Area | FeretX   | FeretY   | FeretAngle | MinFerret |
| 602                    |       | 27.000   | 255  | 255 | 255 | 10.817  | 100   | 2156.000 | 1689.000 | 146.310    | 5.907     |
| 603                    |       | 211.000  | 255  | 255 | 255 | 25.239  | 100   | 1157.000 | 1704.000 | 33.690     | 13.953    |
| 604                    |       | 7.000    | 255  | 255 | 255 | 4.472   | 100   | 1838.000 | 1693.000 | 63.435     | 2.000     |
| 605                    |       | 204.000  | 255  | 255 | 255 | 30.017  | 100   | 2110.000 | 1689.000 | 150.018    | 14.615    |
| 606                    |       | 44.000   | 255  | 255 | 255 | 14.422  | 100   | 914.000  | 1690.000 | 123.690    | 7.603     |
| 607                    |       | 91.000   | 255  | 255 | 255 | 18.601  | 100   | 57.000   | 1702.000 | 36.254     | 9.831     |
| 608                    |       | 8.000    | 255  | 255 | 255 | 5.385   | 100   | 43.000   | 1698.000 | 68.199     | 2.910     |
| 609                    |       | 13.000   | 255  | 255 | 255 | 6.403   | 100   | 2153.000 | 1693.000 | 128.660    | 3.536     |
| 610                    |       | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 235.000  | 1696.000 | 135.000    | 1.000     |
| 611                    |       | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 635.000  | 1698.000 | 135.000    | 1.000     |
| 612                    |       | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 159.000  | 1699.000 | 135.000    | 1.000     |
| 613                    |       | 2.000    | 255  | 255 | 255 | 2.828   | 100   | 2160.000 | 1701.000 | 45.000     | 1.414     |
| 614                    |       | 7.000    | 255  | 255 | 255 | 4.472   | 100   | 41.000   | 1704.000 | 63.435     | 2.000     |
| 615                    |       | 6.000    | 255  | 255 | 255 | 4.243   | 100   | 388.000  | 1704.000 | 45.000     | 2.683     |
| 616                    | Mean  | 46.125   | 255  | 255 | 255 | 7.662   | 100   | 831.628  | 1023.000 | 104.497    | 4.085     |
| 617                    | SD    | 159.788  | 0    | 0   | 0   | 11.777  | 0     | 732.866  | 553.442  | 44.561     | 5.825     |
| 618                    | Min   | 1.000    | 255  | 255 | 255 | 1.414   | 100   | 0.000    | 0.000    | 5.826      | 1.000     |
| 619                    | Max   | 1968.000 | 255  | 255 | 255 | 127.581 | 100   | 2271.000 | 1704.000 | 173.660    | 43.461    |

Summary

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|----------------|-------|------------|--------------|-------|------|-------|-------|-------|-------|---------|--------|------------|-----------|
| Slice          | Count | Total Area | Average Size | %Area | Mean | Major | Minor | Angle | Feret | FeretX  | FeretY | FeretAngle | MinFerret |
| P1010003.JPG   | 615   | 28367      | 46.125       | 0.733 | 255  | NaN   | NaN   | NaN   | 7.662 | 831.628 | 1023   | 104.497    | 4.085     |



In cui osserviamo una percentuale di porosità pari a 0,733% e un D0 pari a 0,8293.