Note: Figure numbers appearing this file are continuation of the figures presented in the results page. So, any figure mentioned on the results page is either on the page itself or here.

A. Spherical Models

2. For 9 μm diameter spherical cavity:

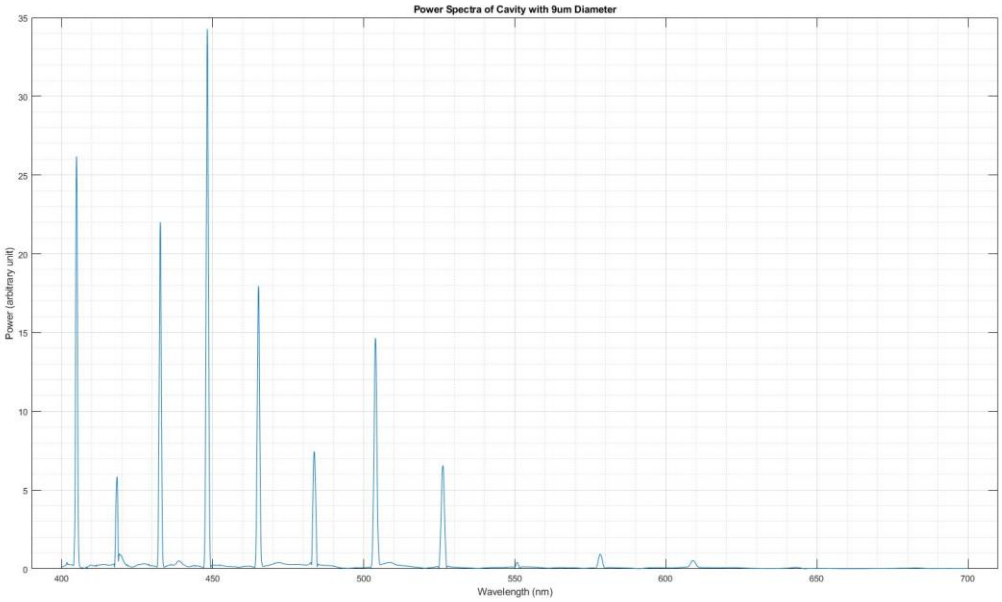

Figure 8: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 2.0.

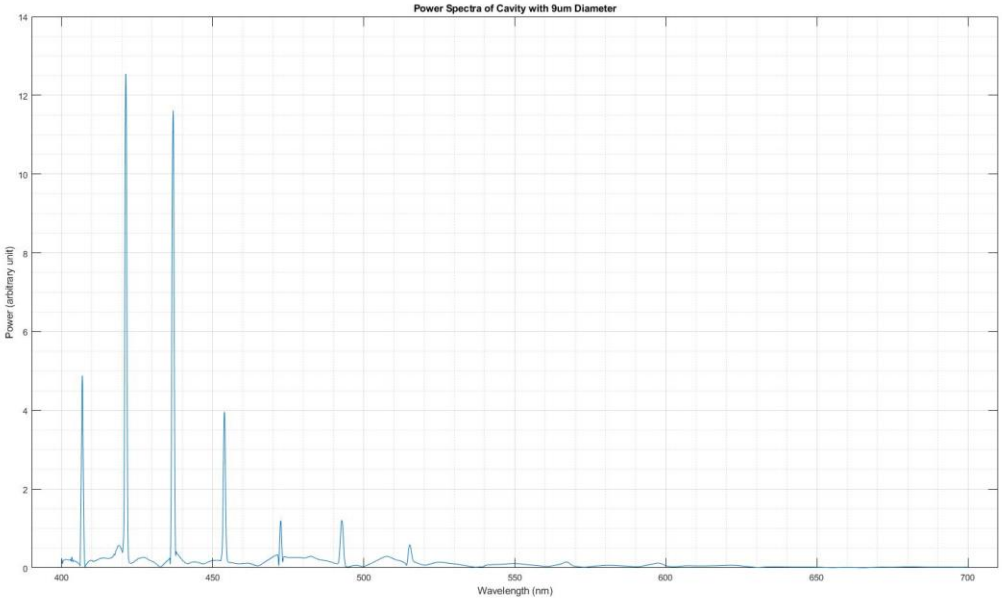

Figure 9: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 1.9.

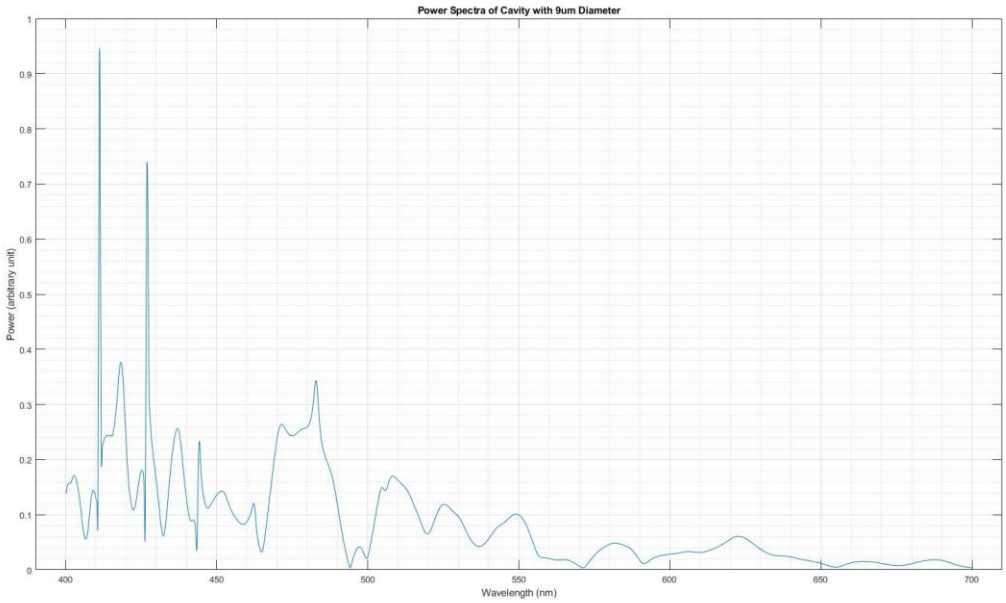

Figure 10: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 1.8.

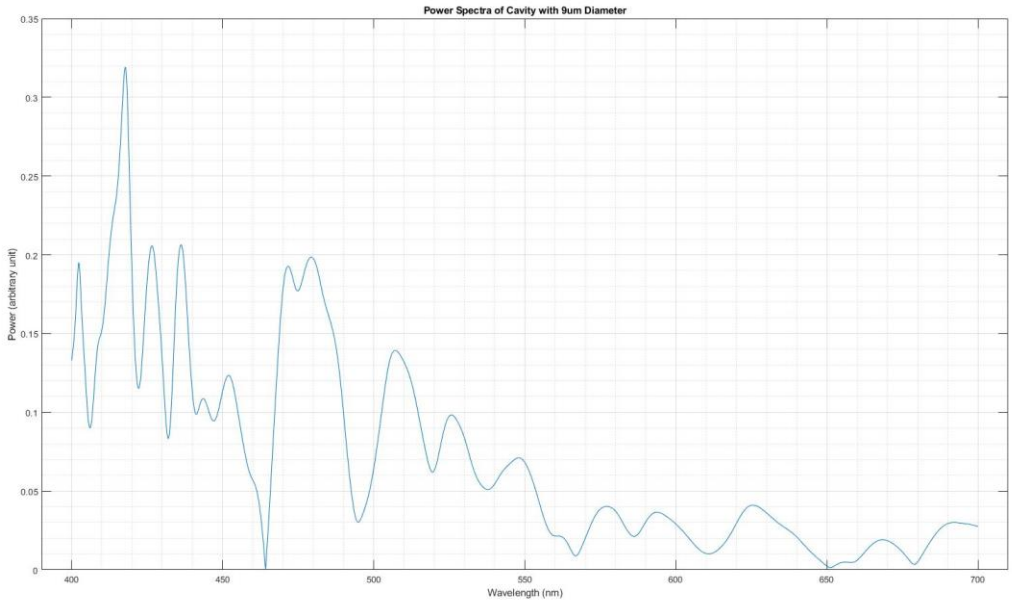

Figure 11: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 1.7.

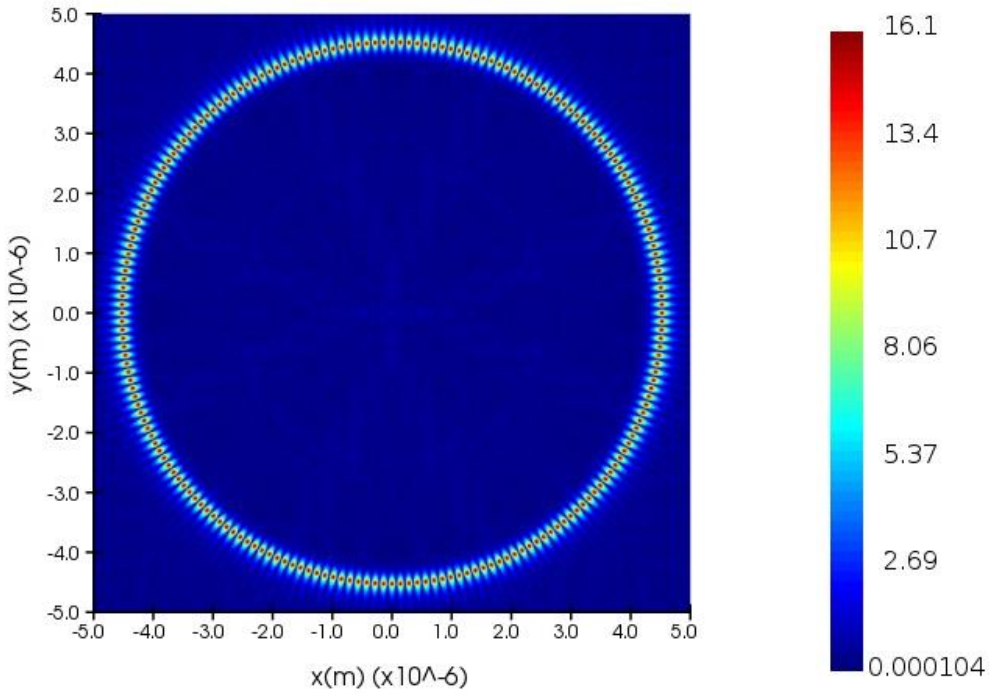

Figure 12: Heatmap of the resonance mode obtained from a spherical cavity of 9 µm diameter. The resonance mode is at wavelength 432 nm.

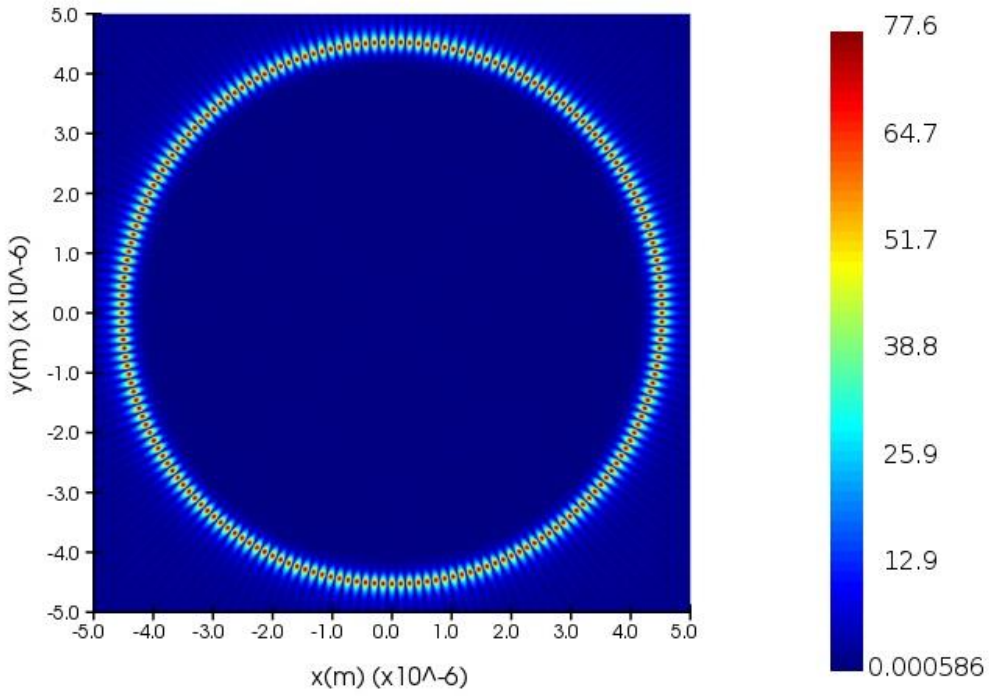

Figure 13: Heatmap of the resonance mode obtained from a spherical cavity of 9 µm diameter. The resonance mode is at wavelength 448 nm.

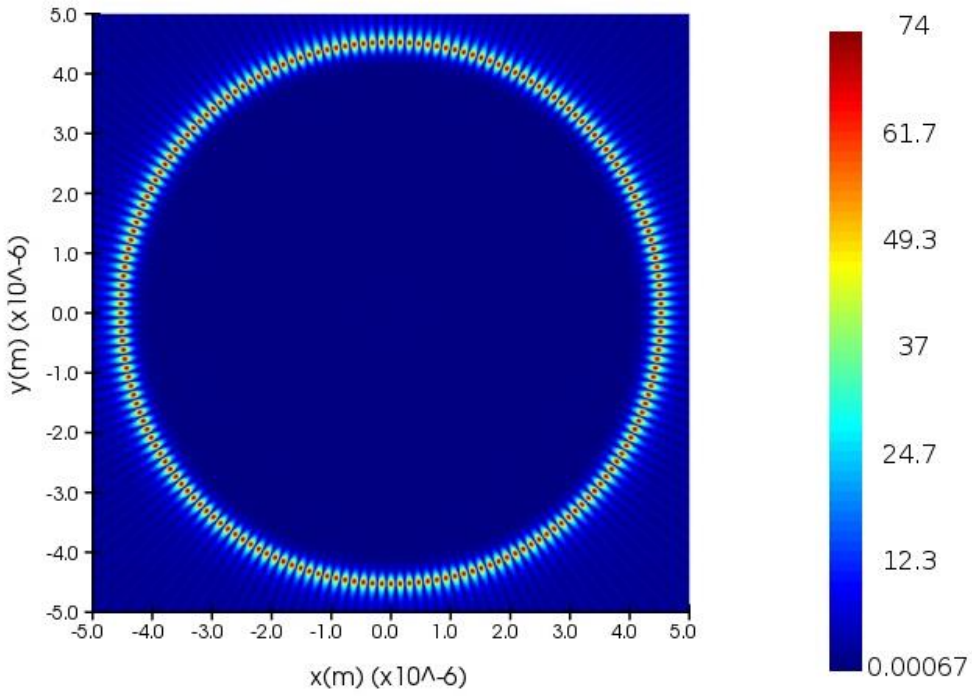

Figure 14: Heatmap of the resonance mode obtained from a spherical cavity of 9 µm diameter. The resonance mode is at wavelength 465 nm.

3. For 8 μm diameter spherical cavity:

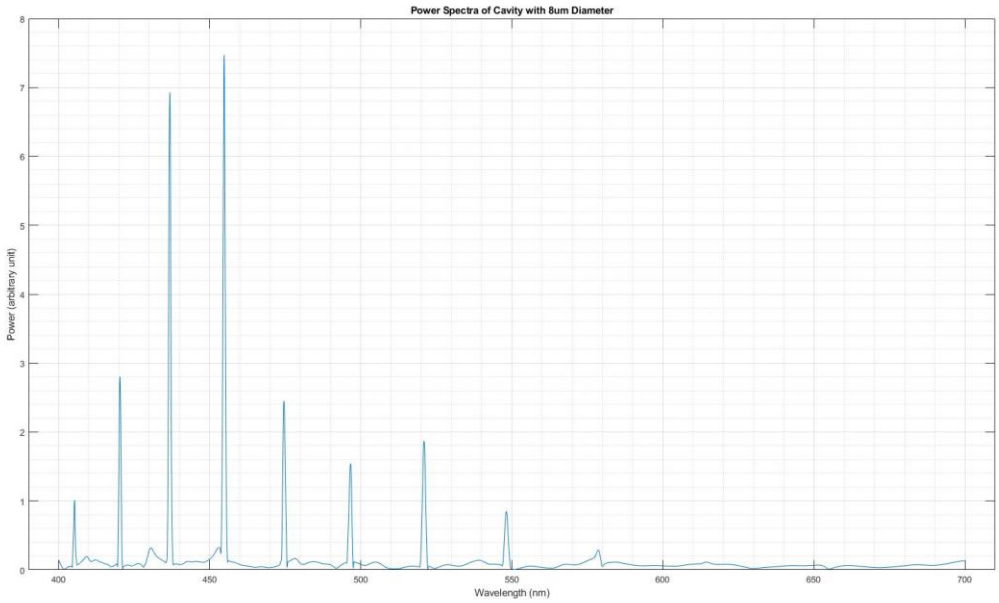

Figure 15: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 2.0.

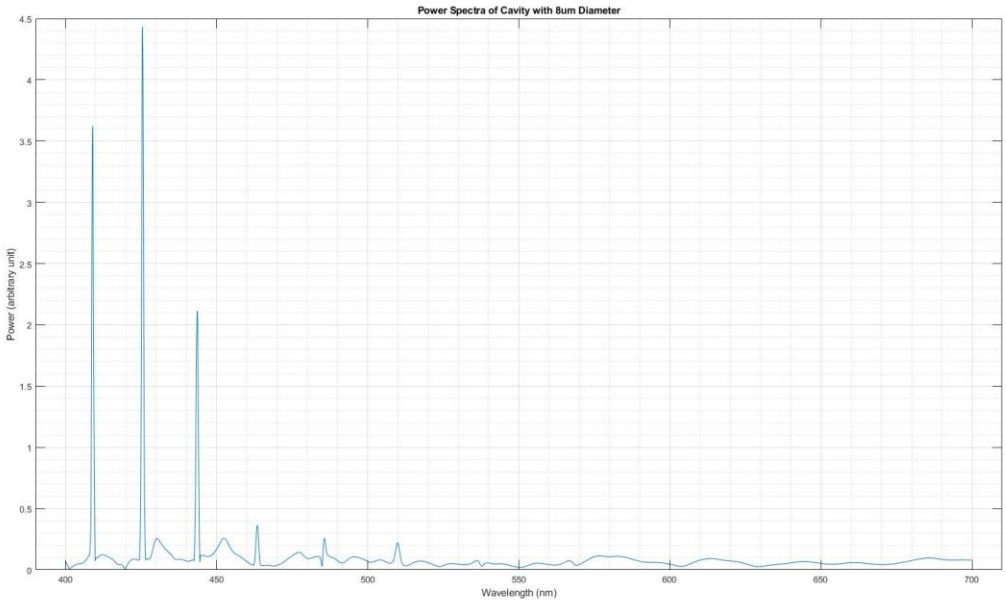

Figure 16: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 1.9.

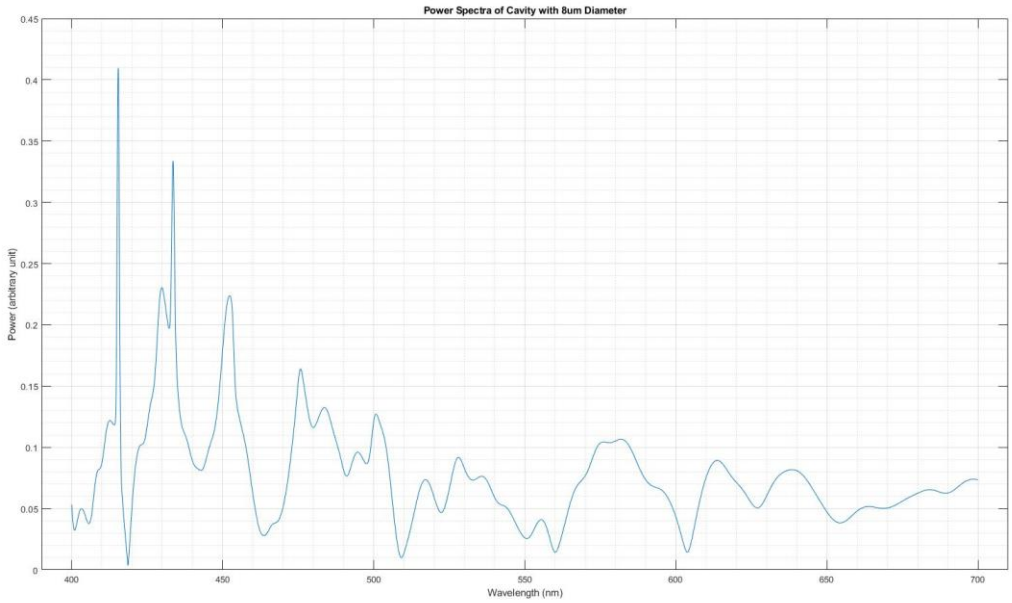

Figure 17: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 1.8.

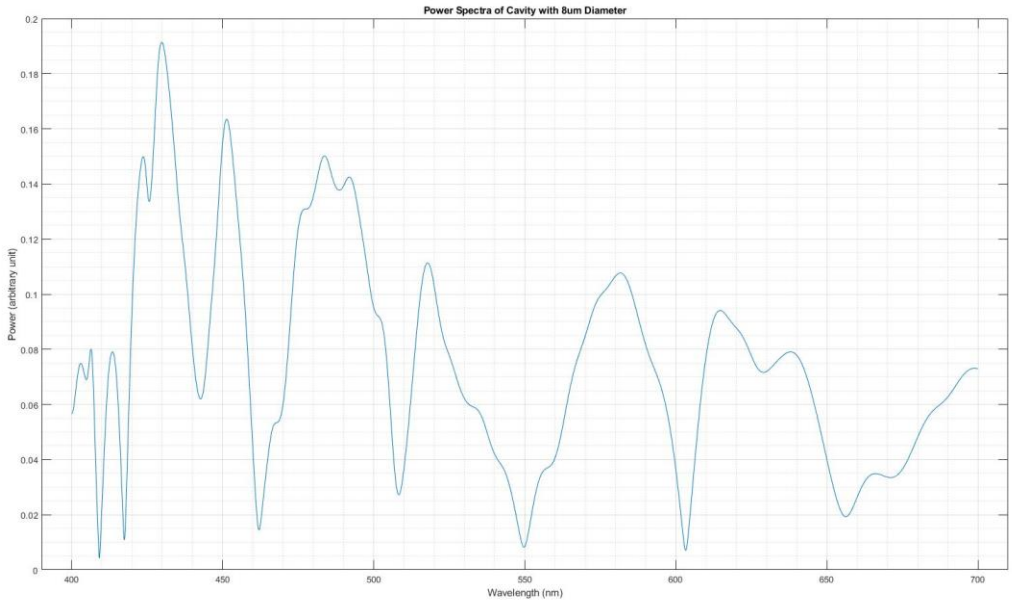

Figure 18: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 1.7.

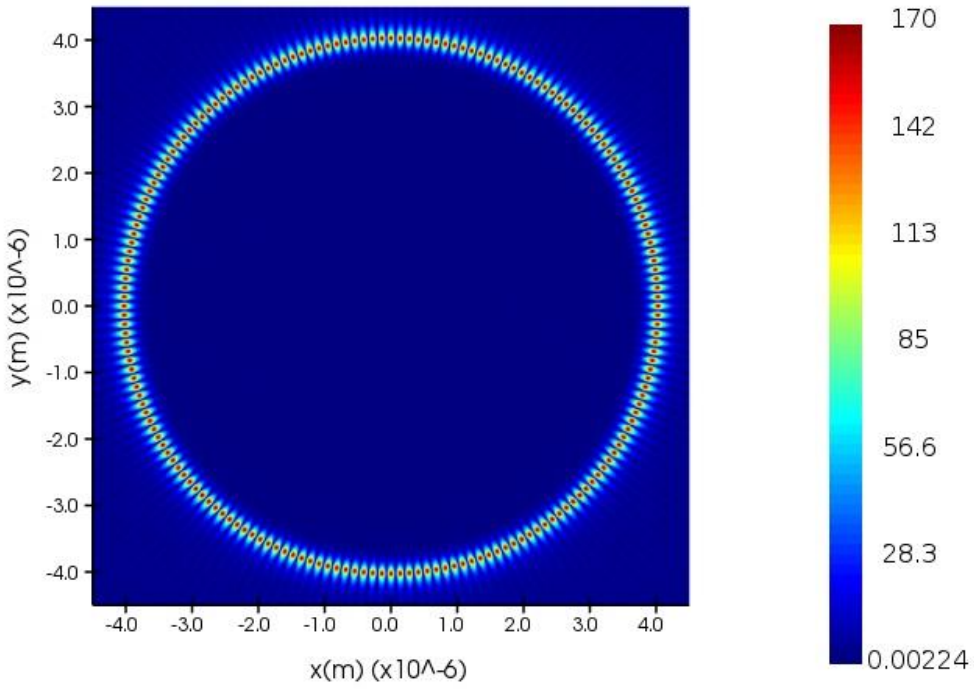

Figure 19: Heatmap of the resonance mode obtained from a spherical cavity of 8 µm diameter. The resonance mode is at wavelength 420 nm.

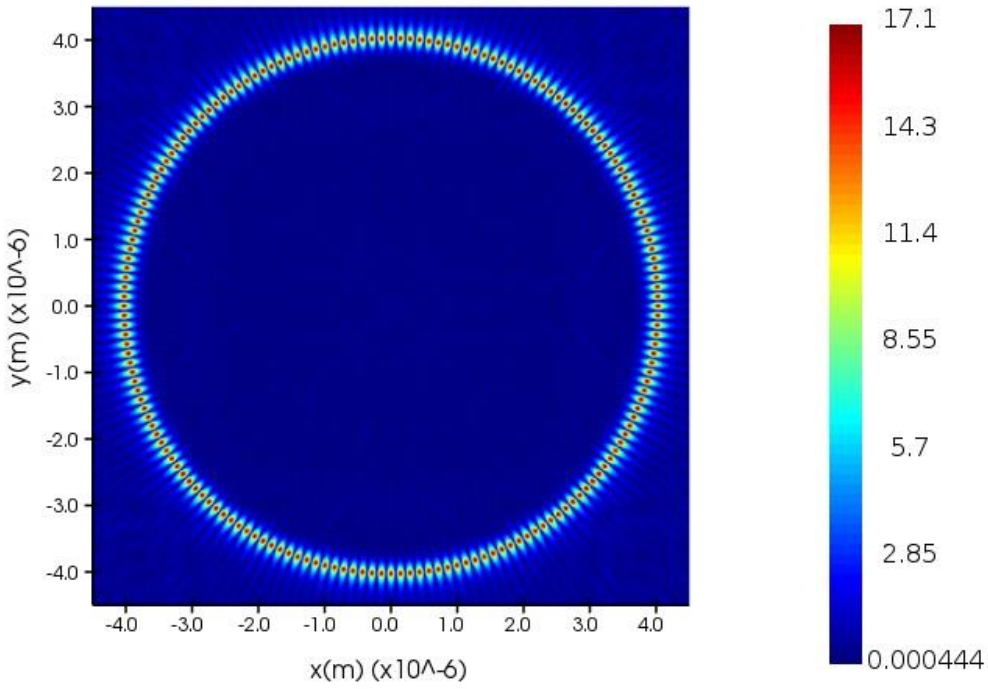

Figure 20: Heatmap of the resonance mode obtained from a spherical cavity of 8 μm diameter. The resonance mode is at wavelength 436 nm.

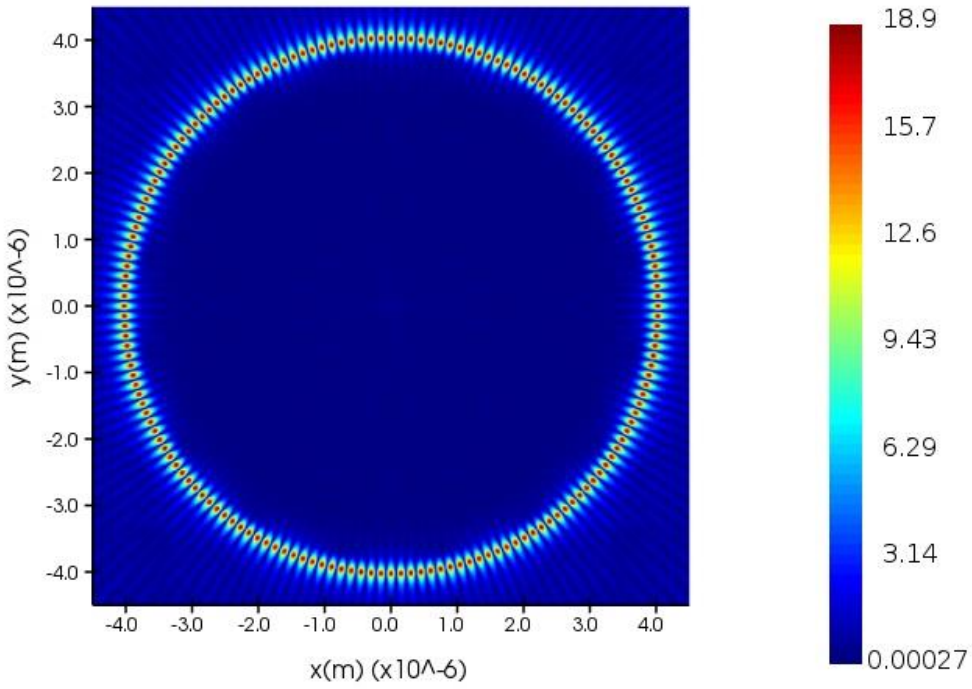

Figure 21: Heatmap of the resonance mode obtained from a spherical cavity of 8 μm diameter. The resonance mode is at wavelength 454 nm.

4. For 7 μm diameter spherical cavity:

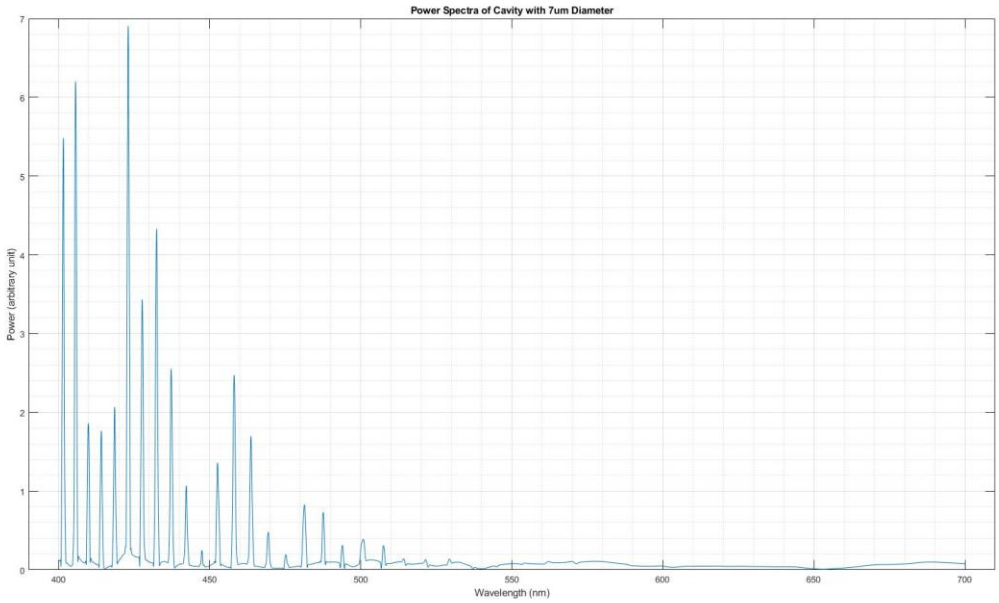

Figure 22: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 2.0.

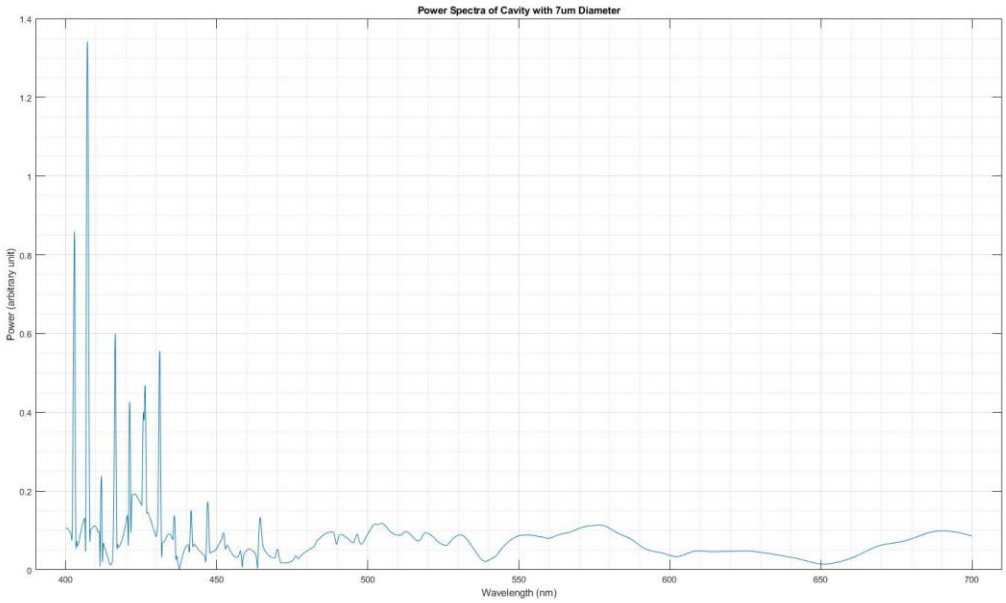

Figure 23: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 1.9.

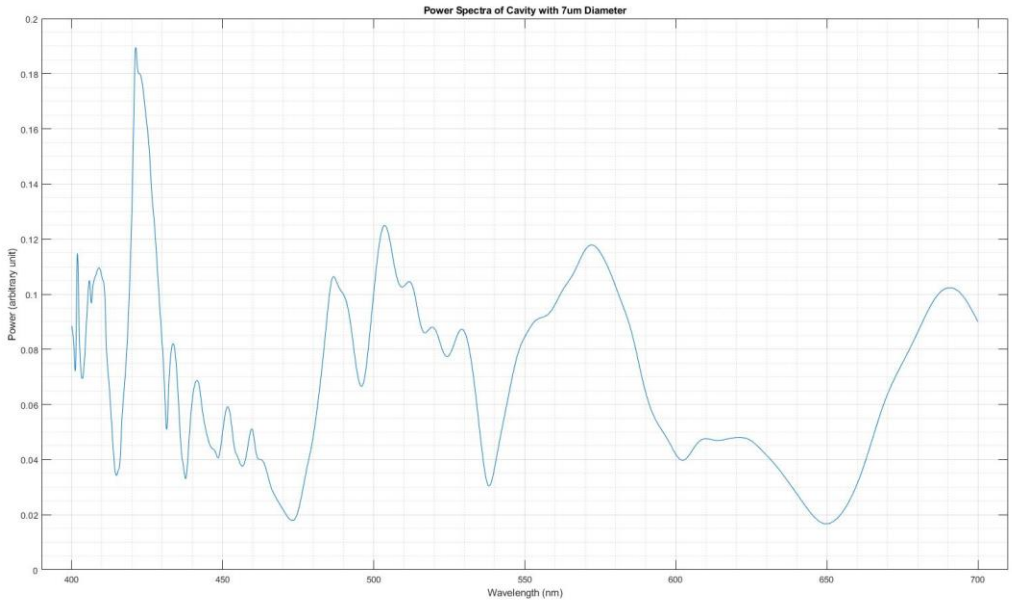

Figure 24: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 1.8.

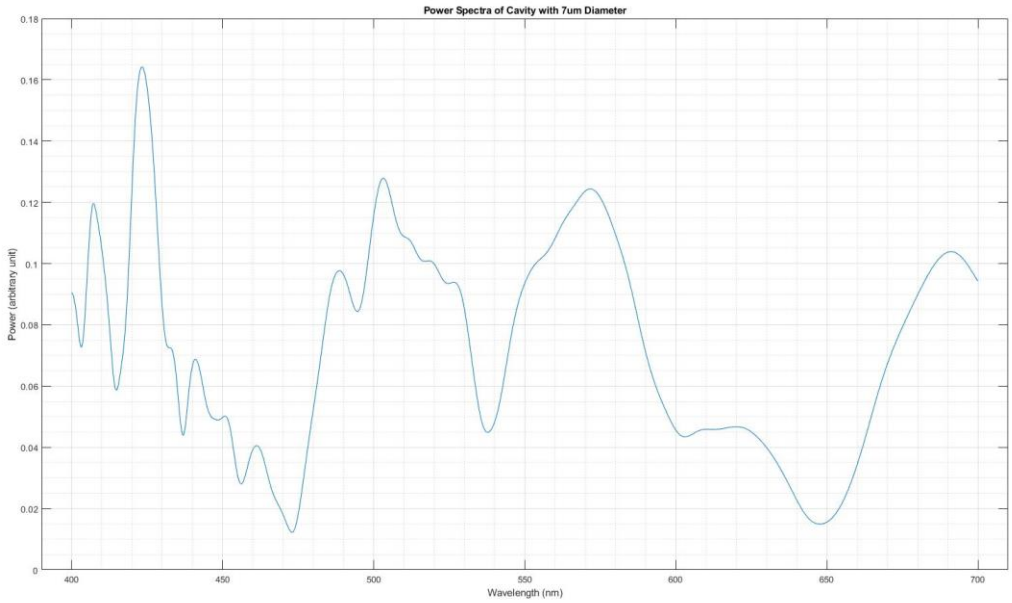

Figure 25: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 1.7.

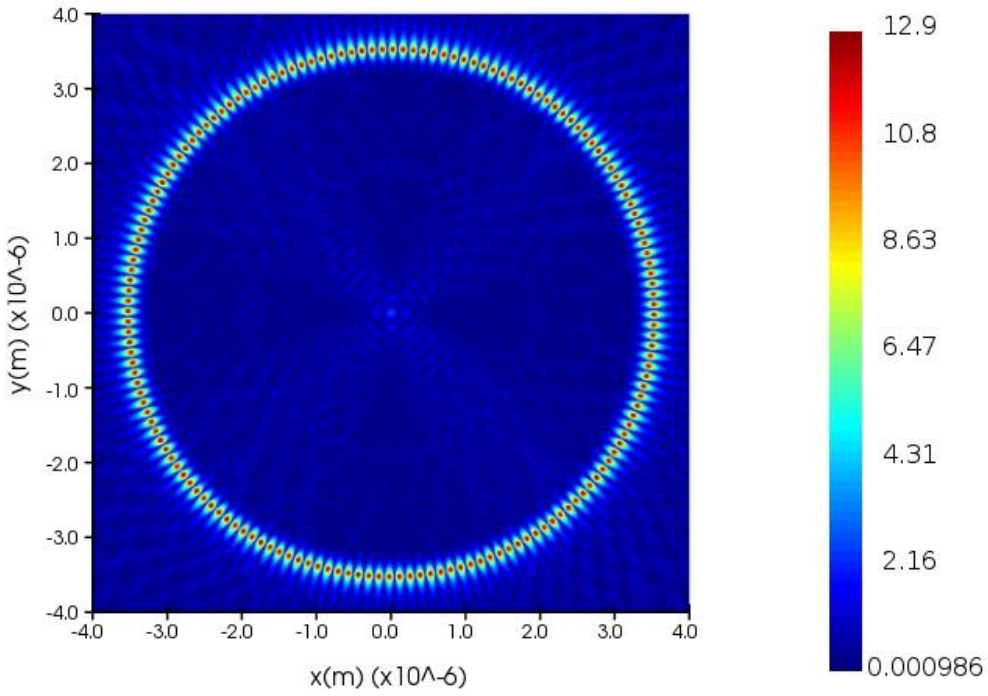

Figure 26: Heatmap of the resonance mode obtained from a spherical cavity of 7 μm diameter. The resonance mode is at wavelength 423 nm.

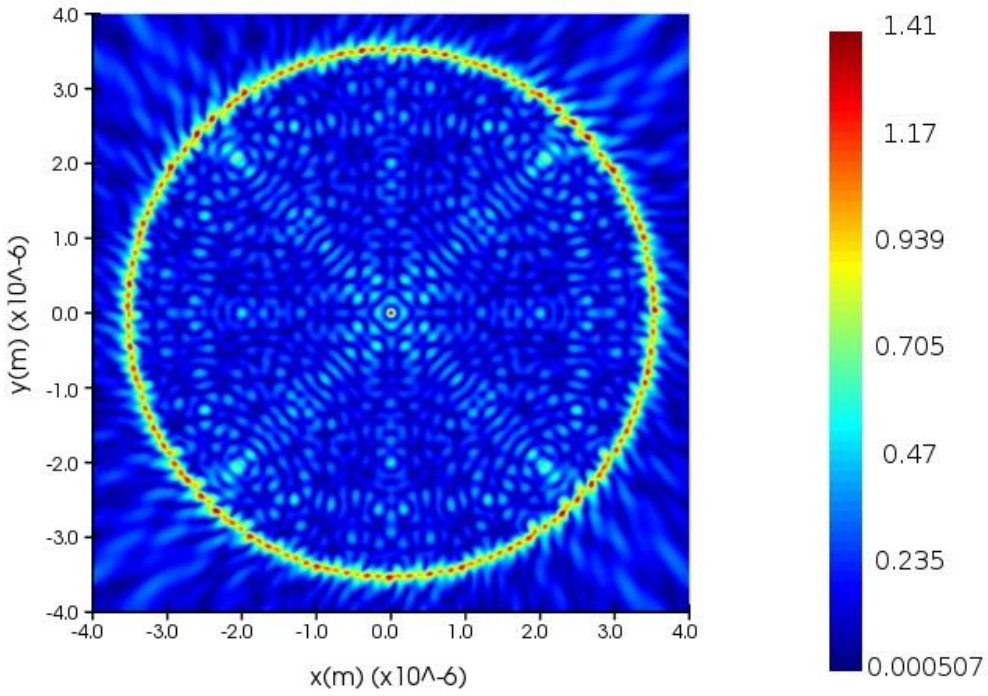

Figure 27: Heatmap of the resonance mode obtained from a spherical cavity of 7 µm diameter. The resonance mode is at wavelength 427 nm.

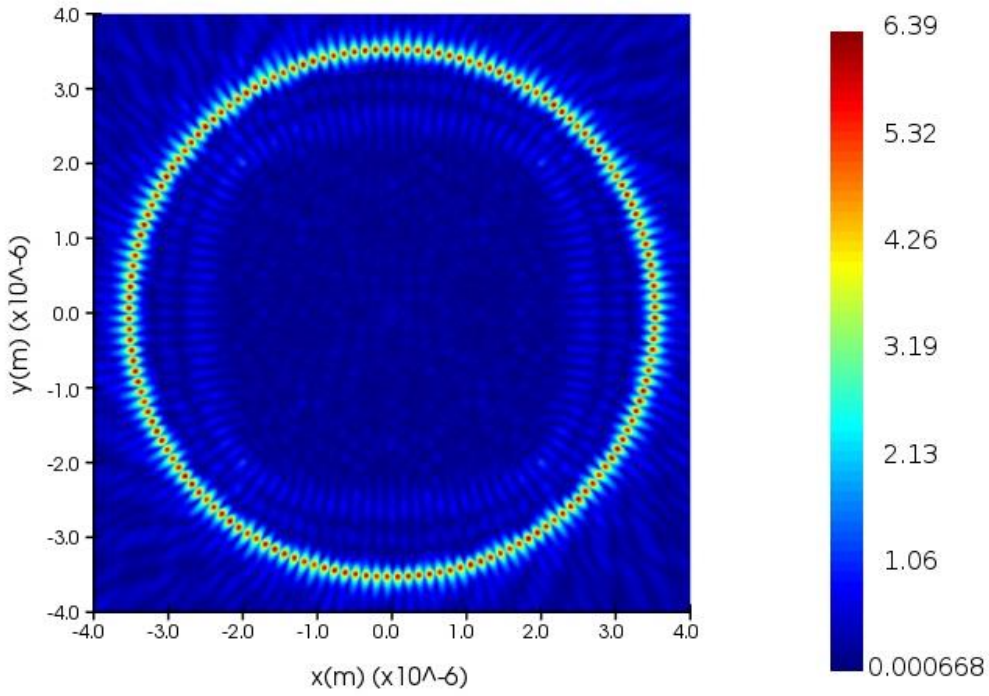

Figure 28: Heatmap of the resonance mode obtained from a spherical cavity of 7 μm diameter. The resonance mode is at wavelength 432 nm.

5. For 6 μm diameter spherical cavity:

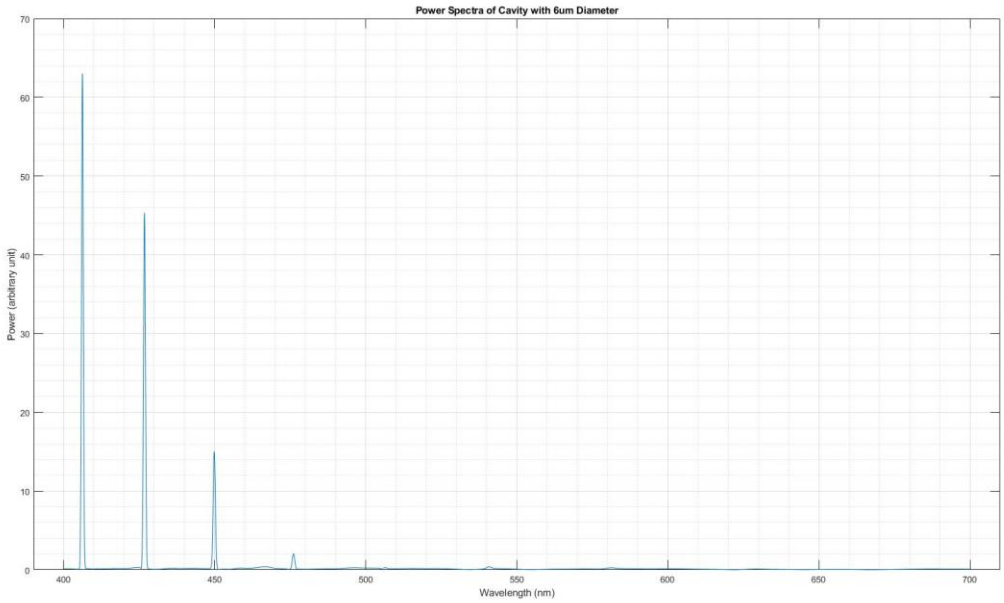

Figure 29: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 2.0.

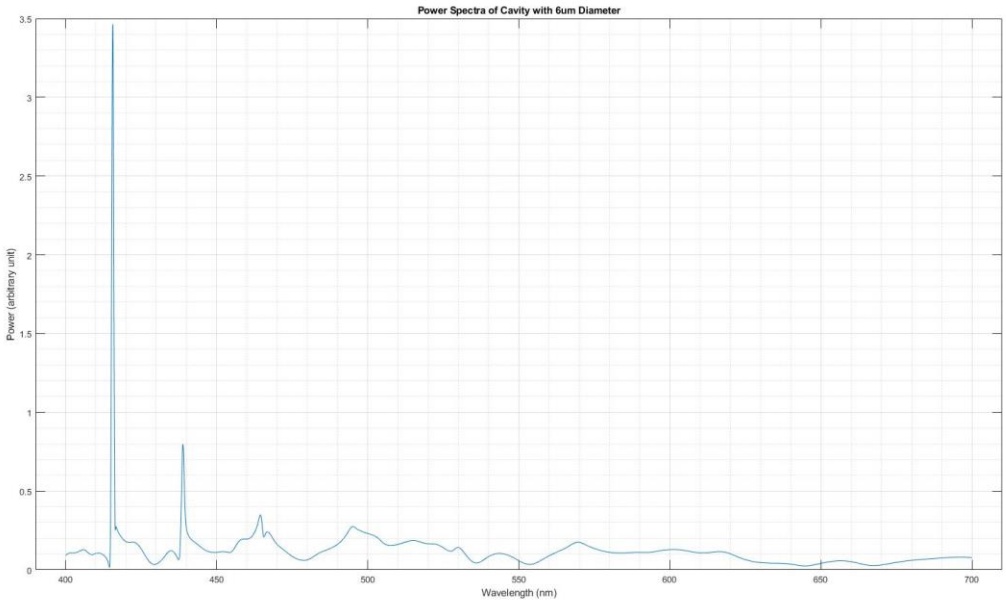

Figure 30: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 1.9.

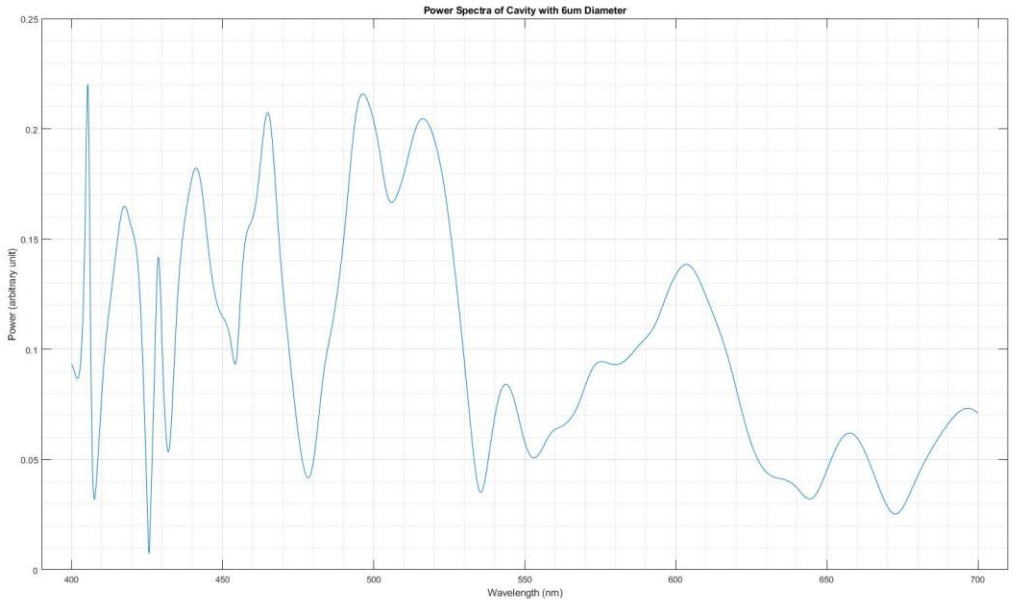

Figure 31: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 1.8.

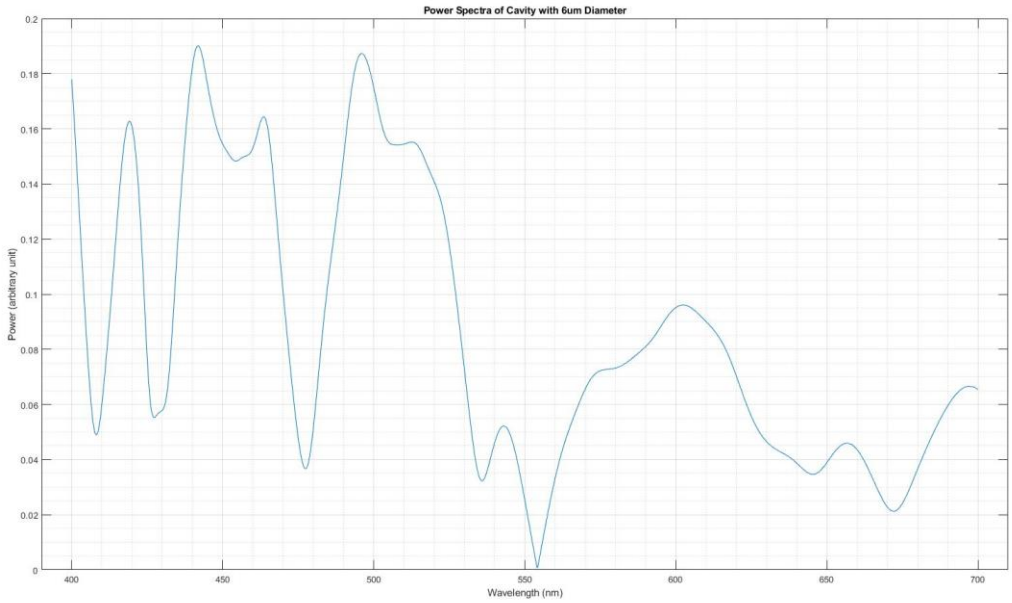

Figure 32: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 1.7.

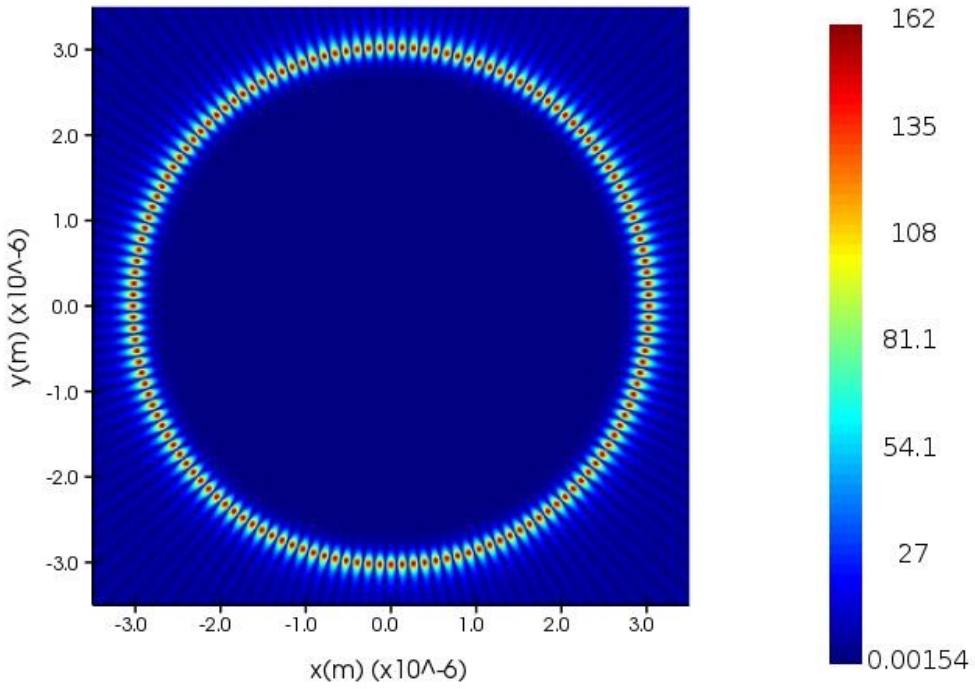

Figure 33: Heatmap of the resonance mode obtained from a spherical cavity of 6 µm diameter. The resonance mode is at wavelength 406 nm.

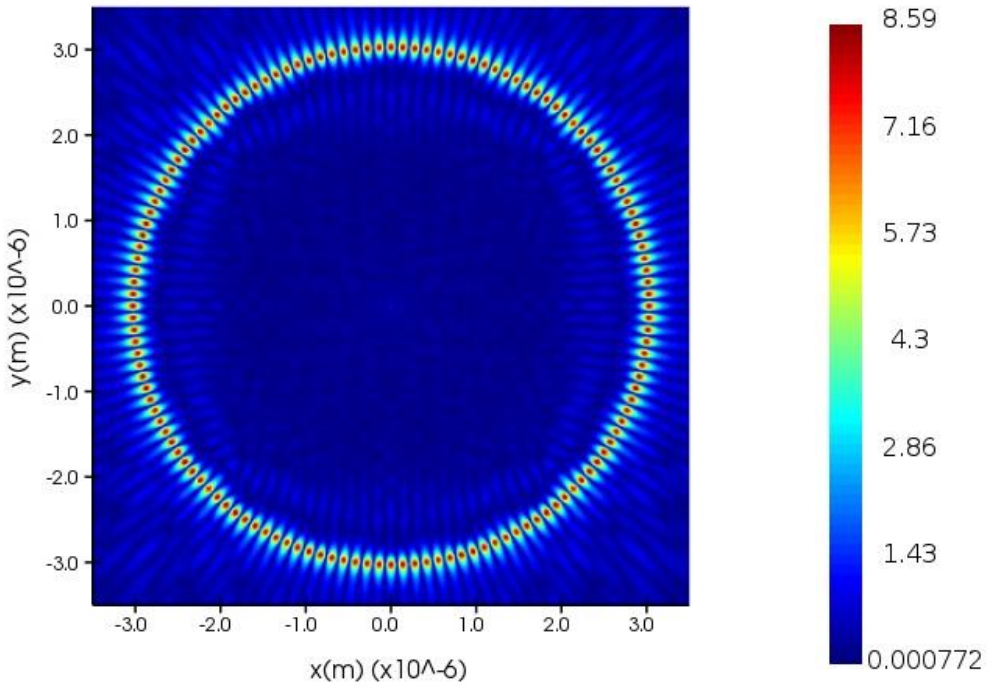

Figure 34: Heatmap of the resonance mode obtained from a spherical cavity of 6 μm diameter. The resonance mode is at wavelength 426 nm.

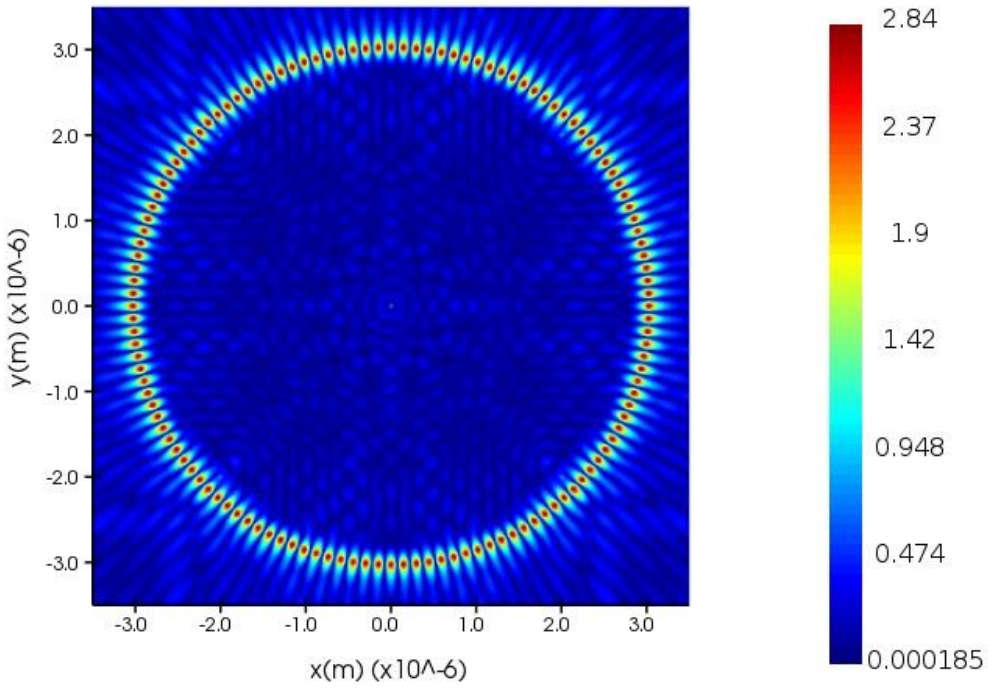

Figure 35: Heatmap of the resonance mode obtained from a spherical cavity of 6 μm diameter. The resonance mode is at wavelength 449 nm.

6. For 5 μm diameter spherical cavity:

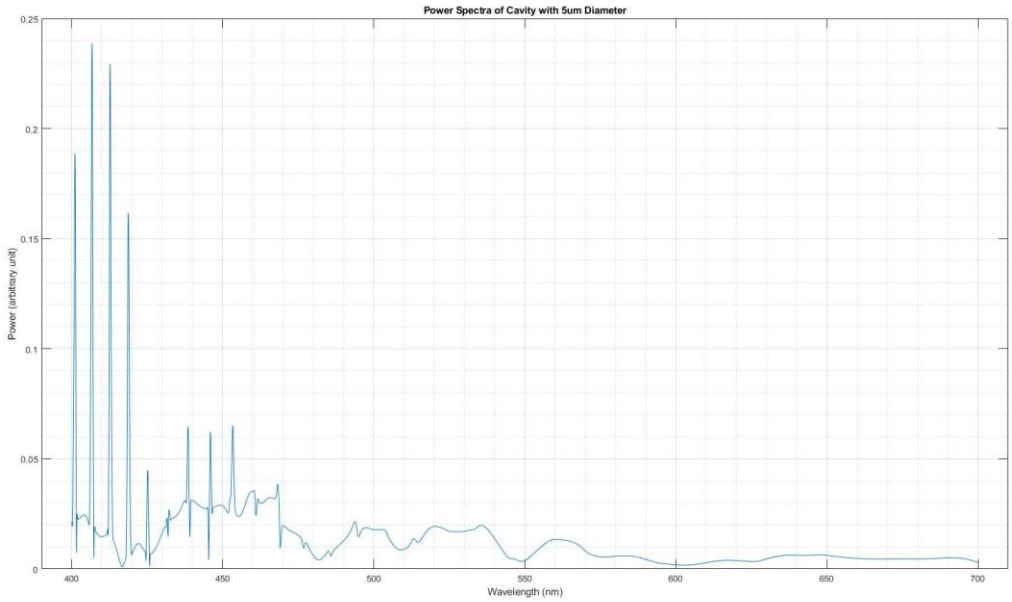

Figure 36: Power spectra of cavity with 5 μm diameter. Refractive index of the membrane in this model is 2.0.

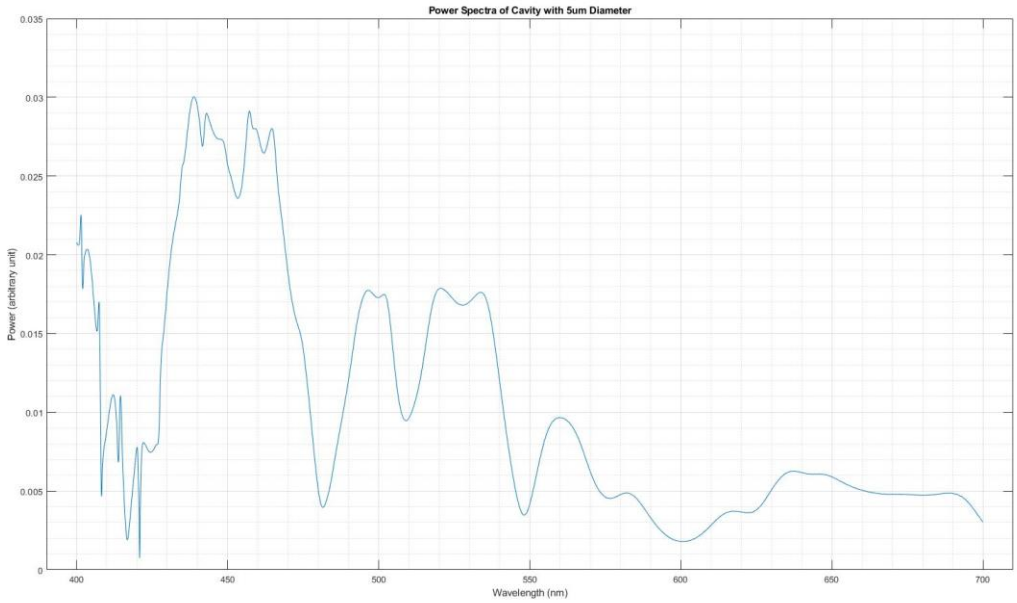

Figure 37: Power spectra of cavity with 5 μm diameter. Refractive index of the membrane in this model is 1.9.

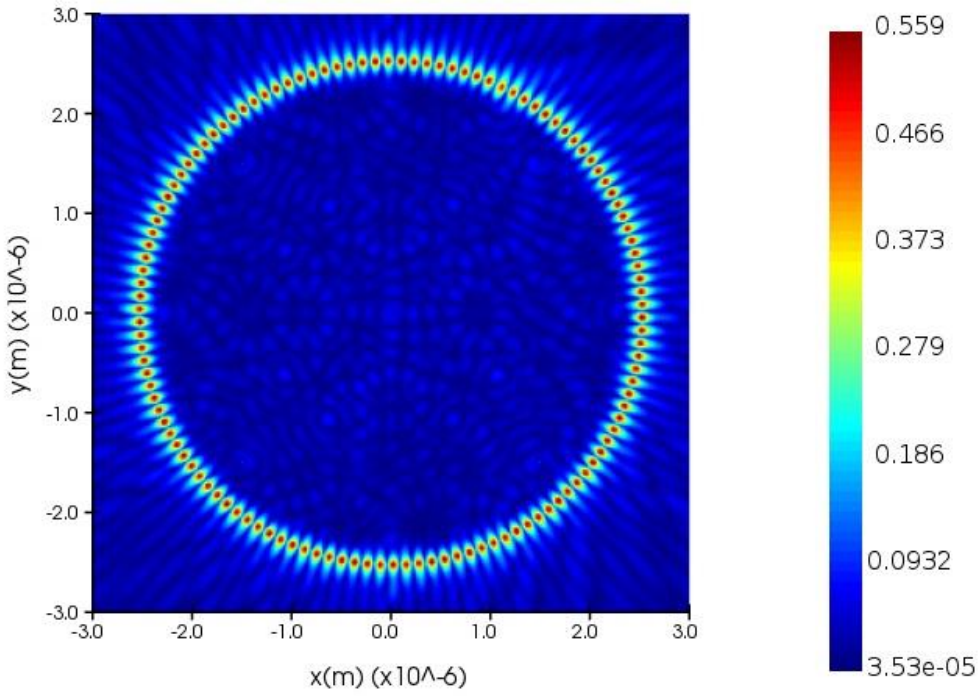

Figure 38: Heatmap of the resonance mode obtained from a spherical cavity of 5 μm diameter. The resonance mode is at wavelength 401 nm.

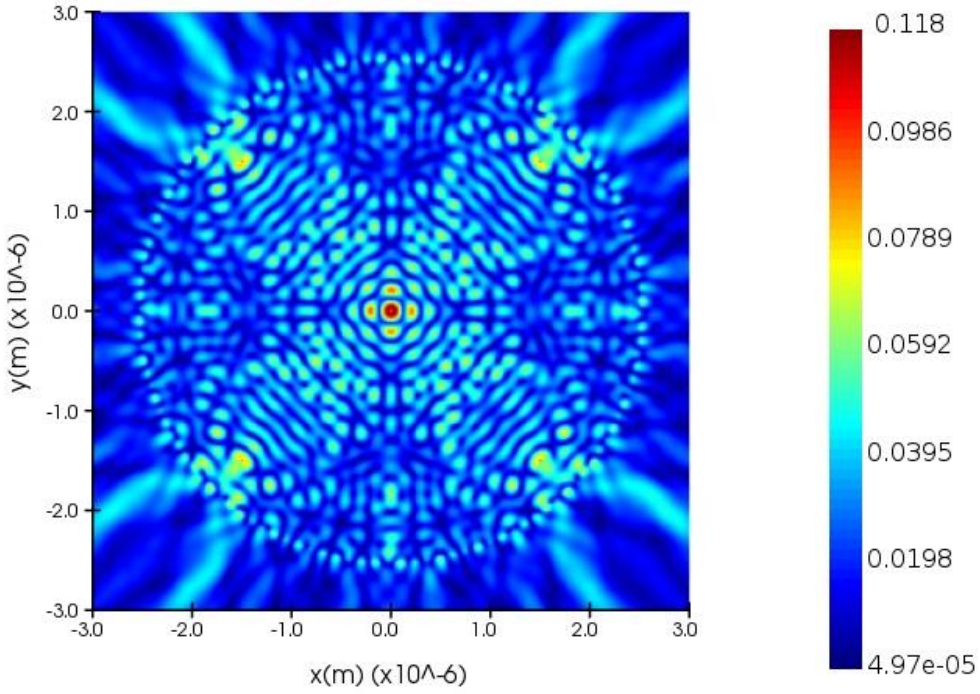

Figure 39: Heatmap of the resonance mode obtained from a spherical cavity of 5 µm diameter. The resonance mode is at wavelength 406 nm.

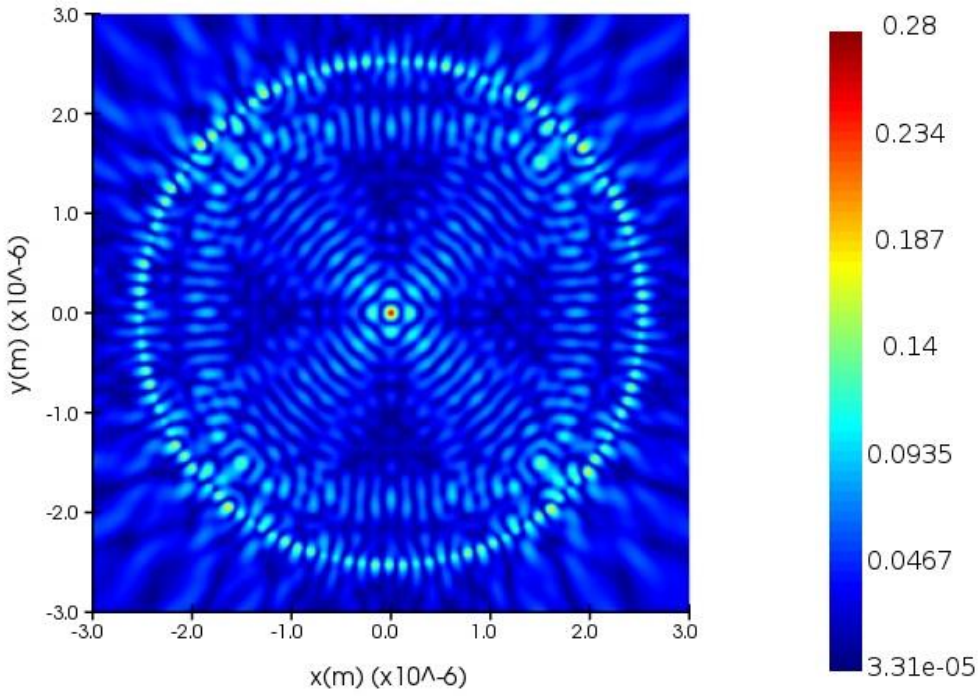

Figure 40: Heatmap of the resonance mode obtained from a spherical cavity of 5 μm diameter. The resonance mode is at wavelength 412 nm.

7. For 4 μm diameter spherical cavity:

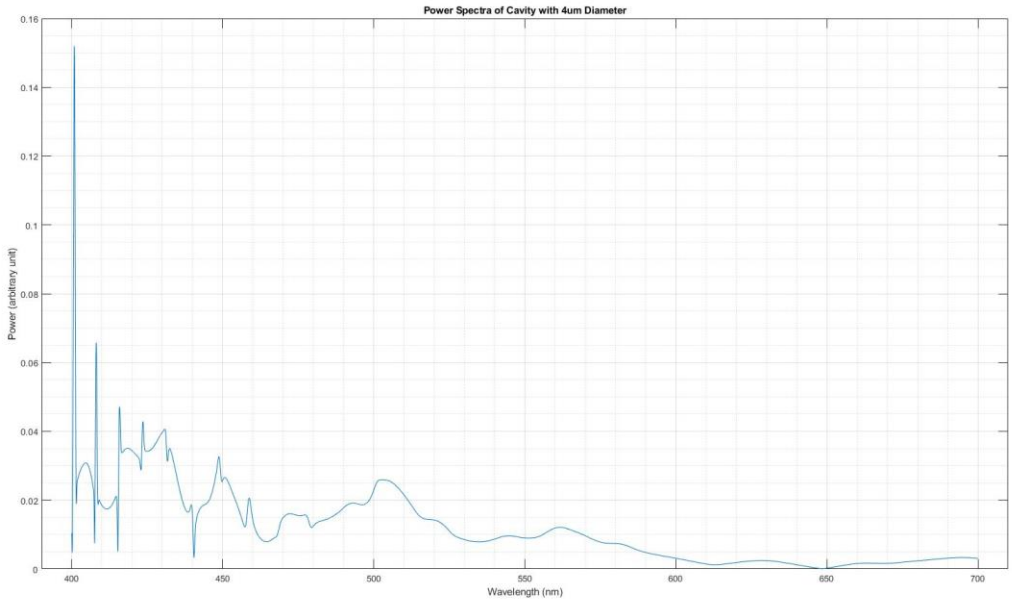

Figure 41: Power spectra of cavity with 4 μm diameter. Refractive index of the membrane in this model is 2.0.

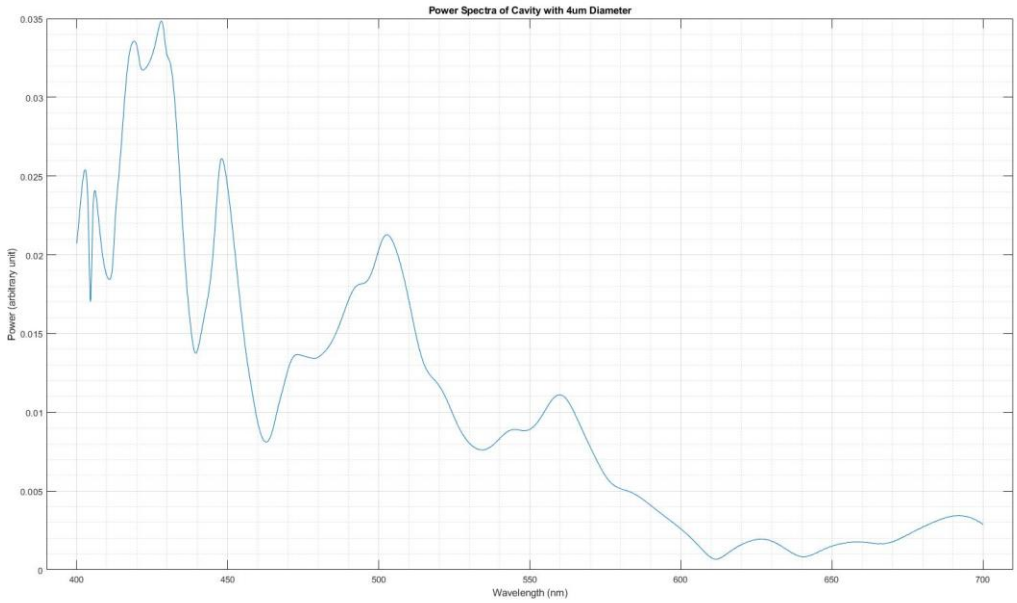

Figure 42: Power spectra of cavity with 4 μm diameter. Refractive index of the membrane in this model is 1.9.

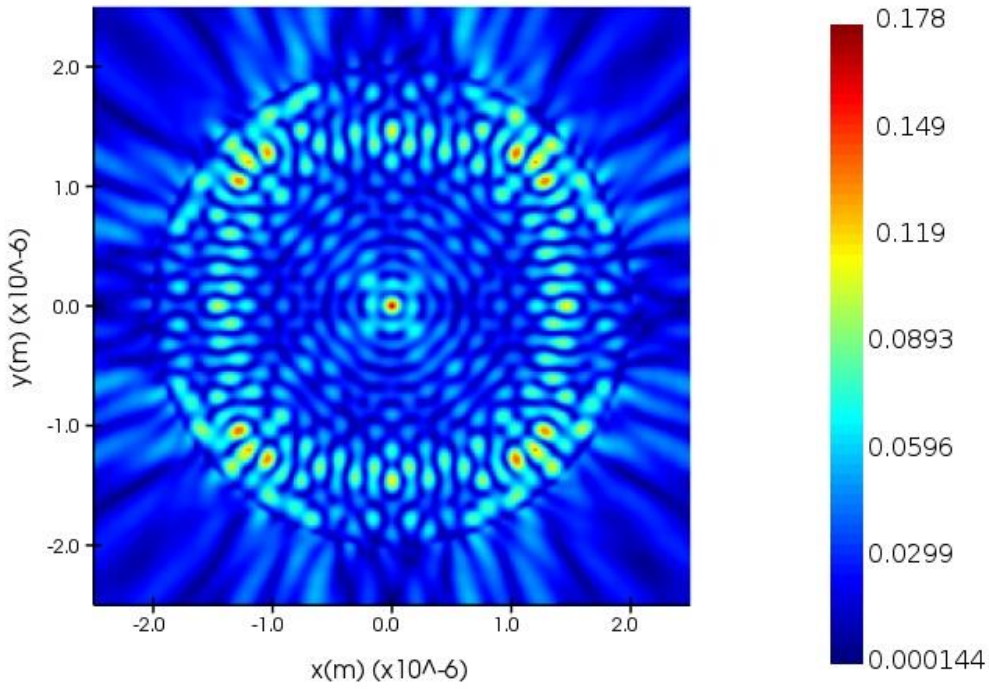

Figure 43: Heatmap of the resonance mode obtained from a spherical cavity of 4 μm diameter. The resonance mode is at wavelength 400 nm.

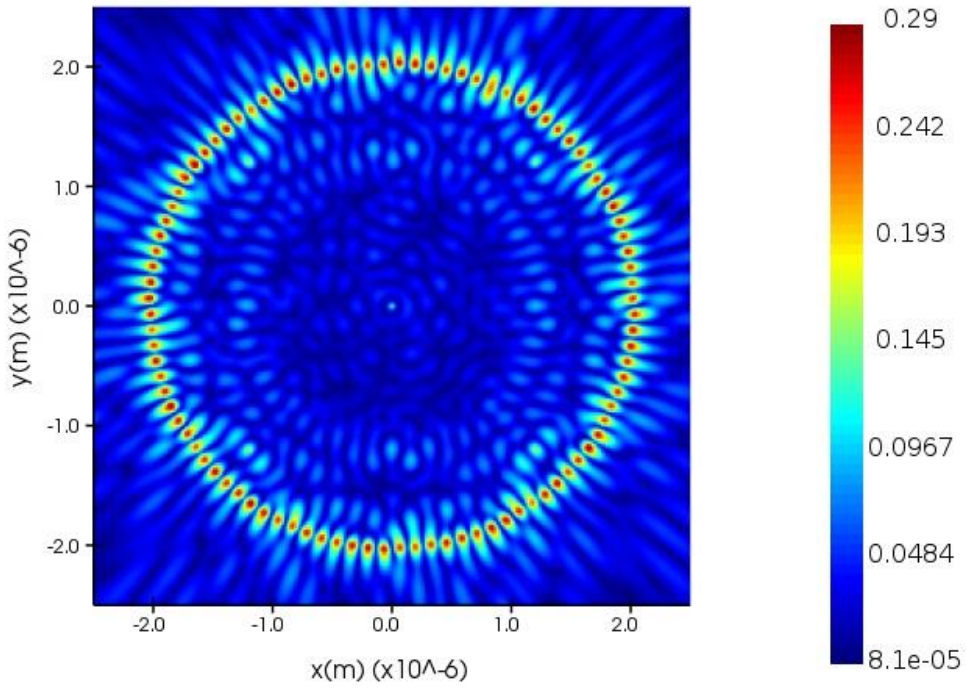

Figure 44: Heatmap of the resonance mode obtained from a spherical cavity of 4 μm diameter. The resonance mode is at wavelength 408 nm.

8. For 3 μm diameter spherical cavity:

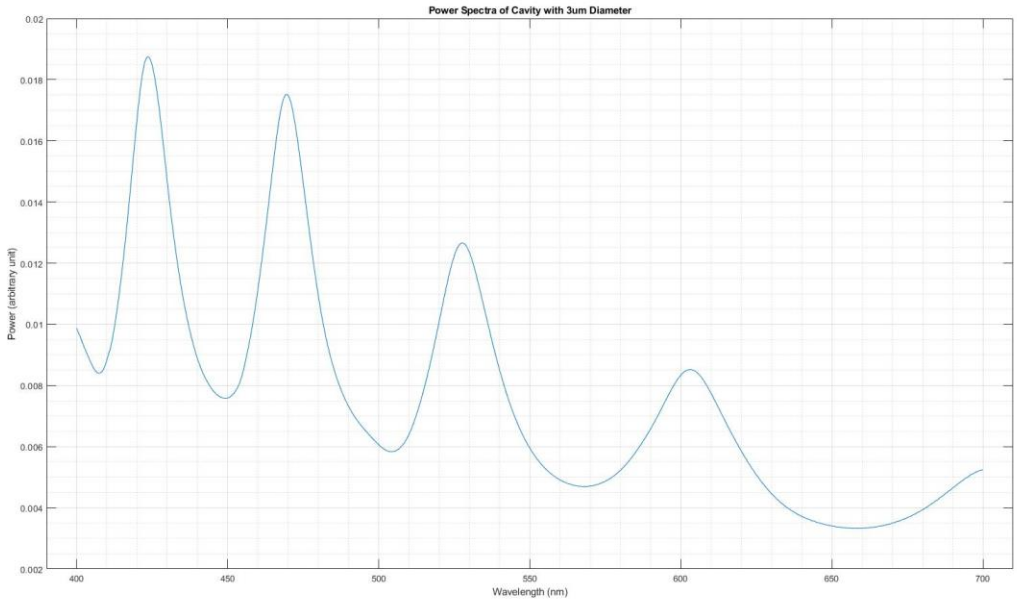

Figure 45: Power spectra of cavity with 3 μm diameter. Refractive index of the membrane in this model is 2.0.

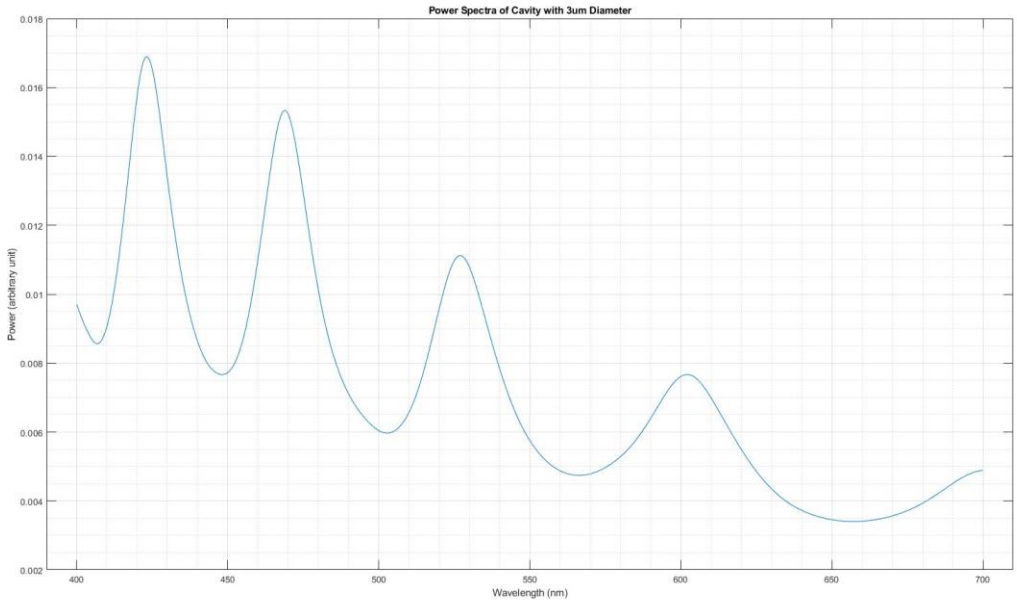

Figure 46: Power spectra of cavity with 3 μm diameter. Refractive index of the membrane in this model is 1.9.

9. For 2 μm diameter spherical cavity:

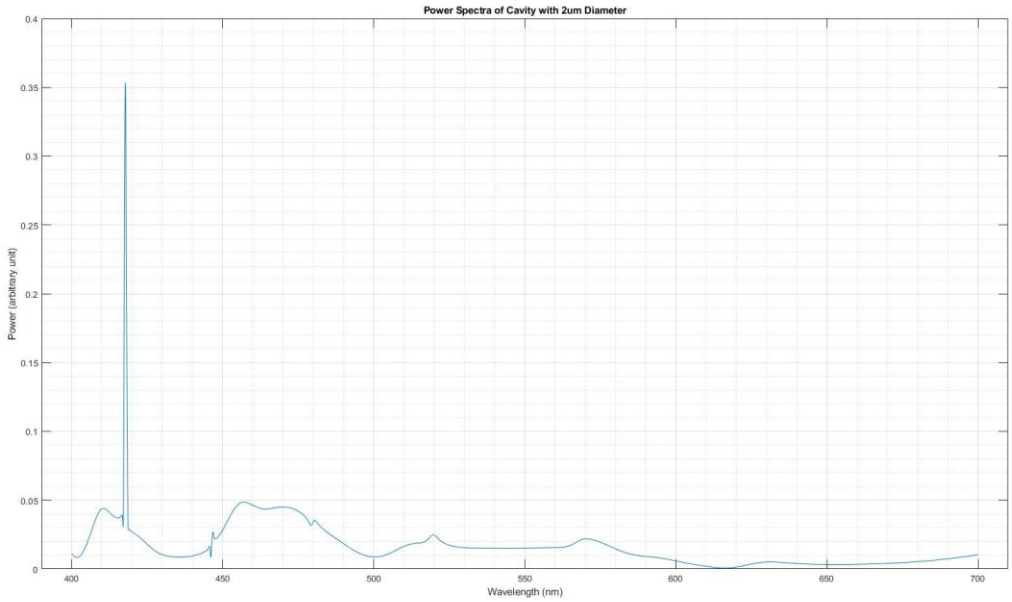

Figure 47: Power spectra of cavity with 2 μm diameter. Refractive index of the membrane in this model is 2.25.

10. For 1 μm diameter spherical cavity:

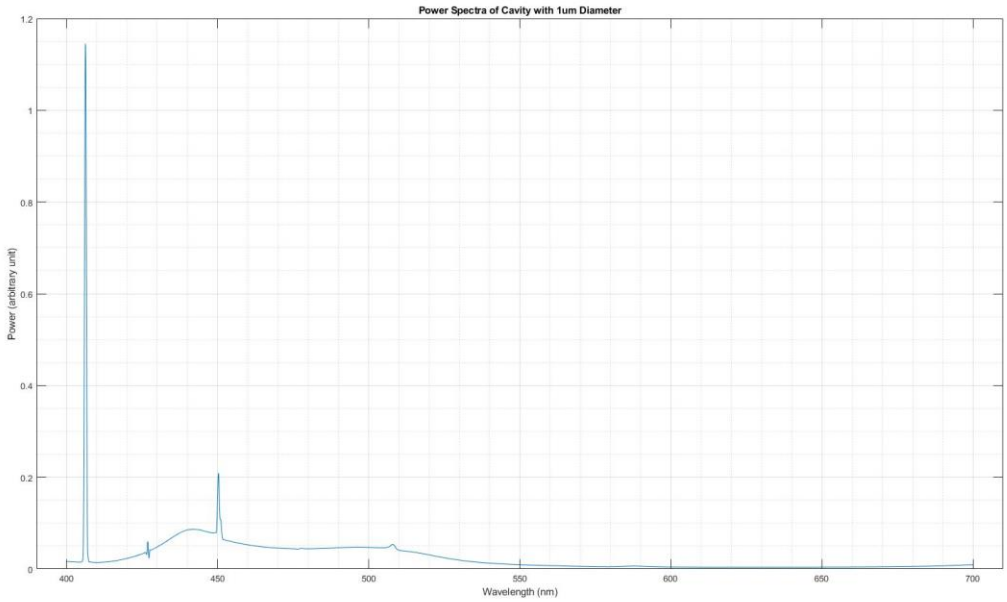

Figure 48: Power spectra of cavity with 1 μm diameter. Refractive index of the membrane in this model is 2.6.

B. Disk-Shaped Models

2. For 9 μm diameter disk-shaped cavity:

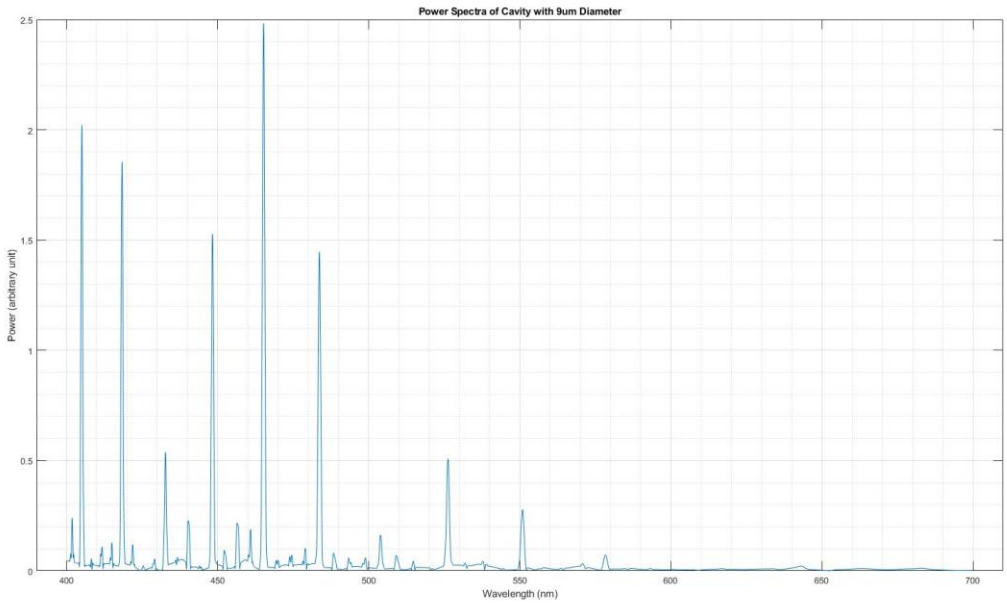

Figure 55: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 2.0.

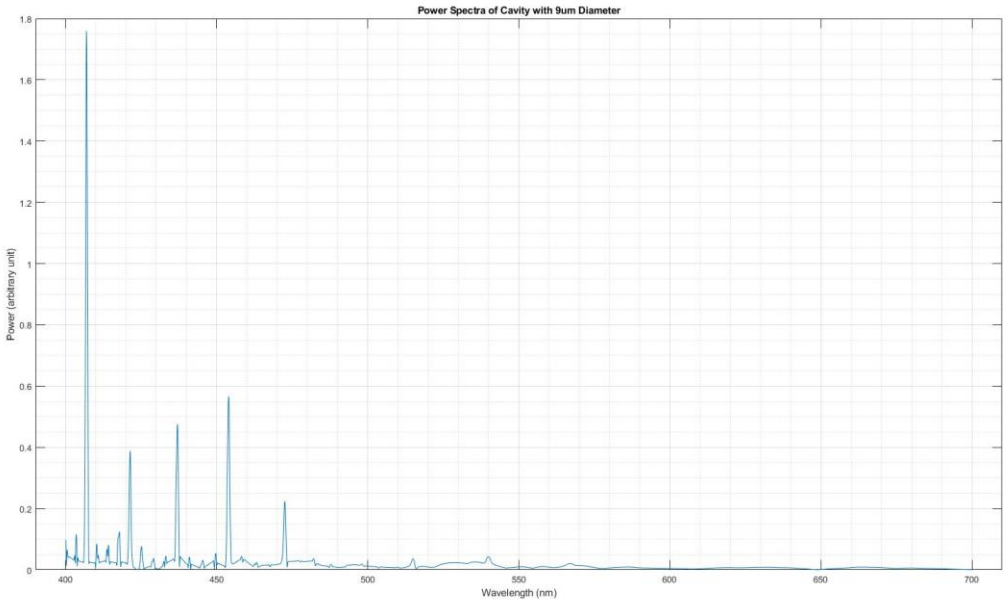

Figure 56: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 1.9.

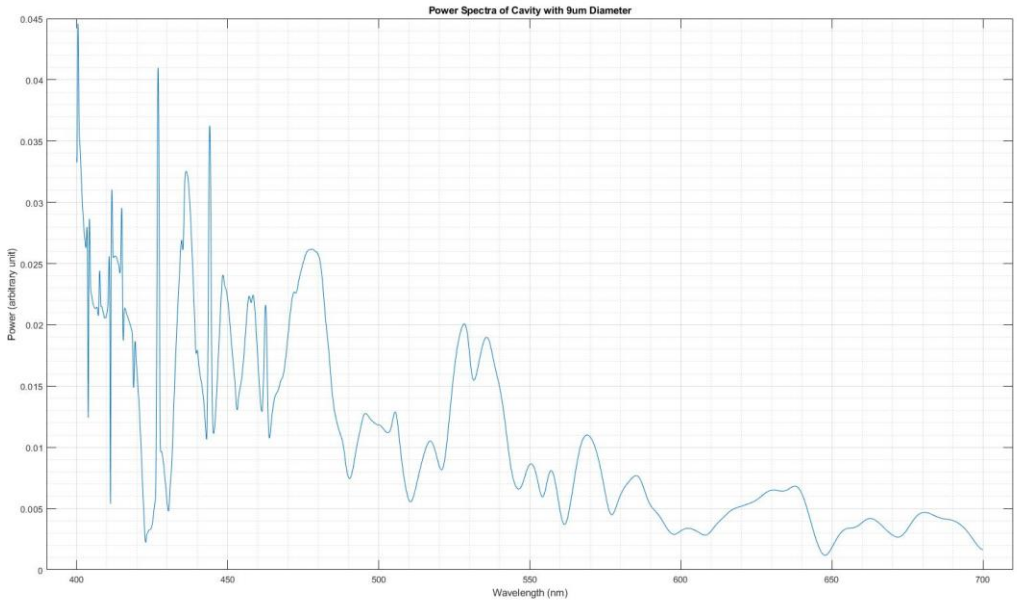

Figure 57: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 1.8.

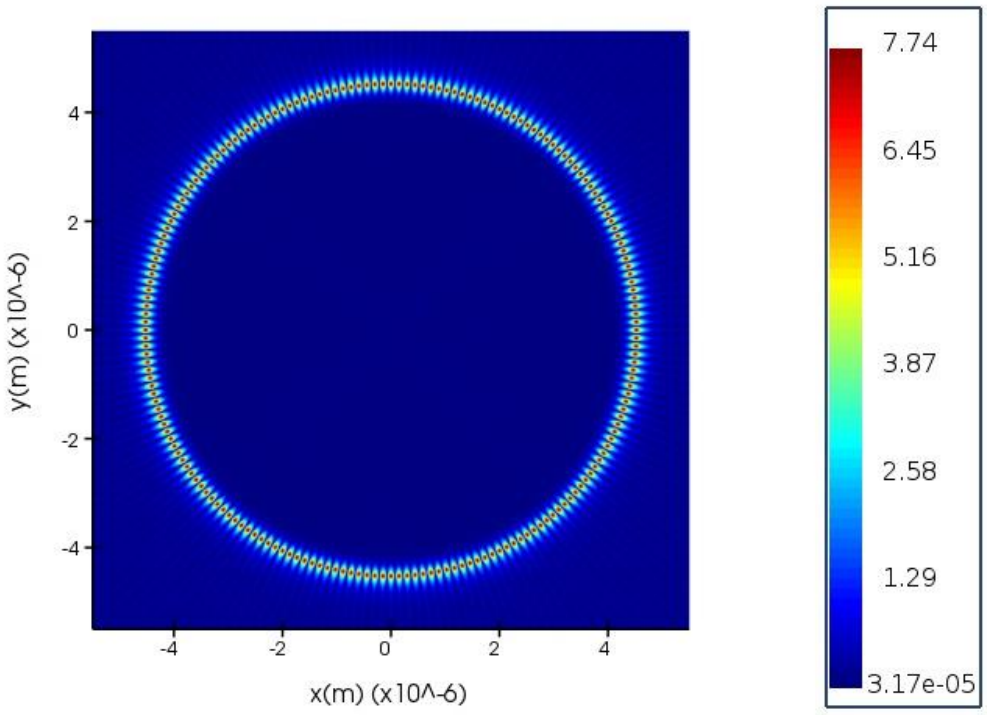

Figure 58: Heatmap of the resonance mode obtained from a disk-shaped cavity of 9 µm diameter. The resonance mode is at wavelength 448 nm.

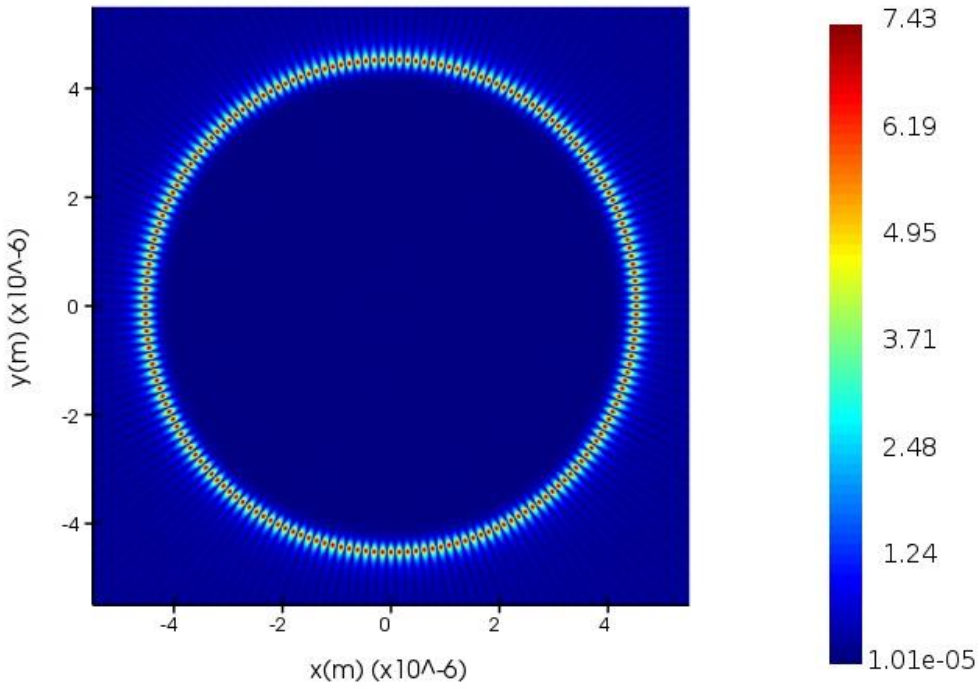

Figure 59: Heatmap of the resonance mode obtained from a disk-shaped cavity of 9 µm diameter. The resonance mode is at wavelength 465 nm.

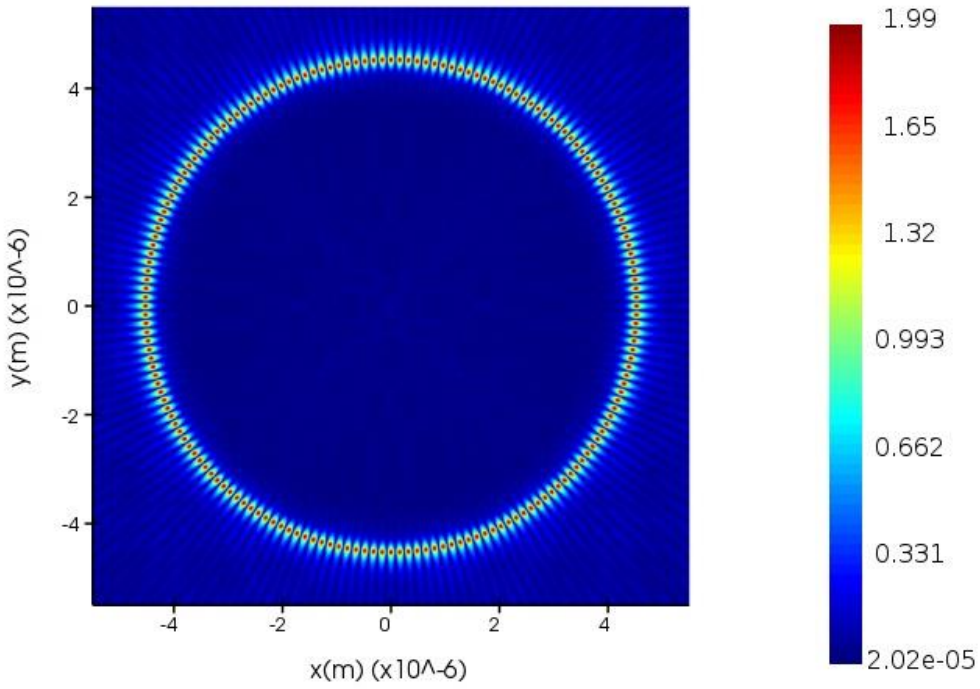

Figure 60: Heatmap of the resonance mode obtained from a disk-shaped cavity of 9 μm diameter. The resonance mode is at wavelength 483 nm.

3. For 8 μm diameter disk-shaped cavity:

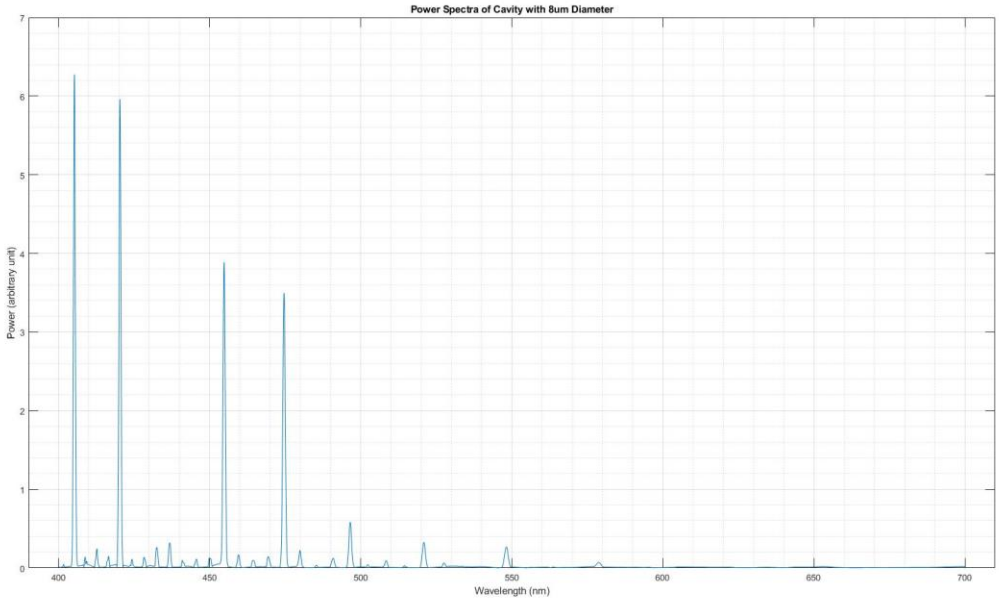

Figure 61: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 2.0.

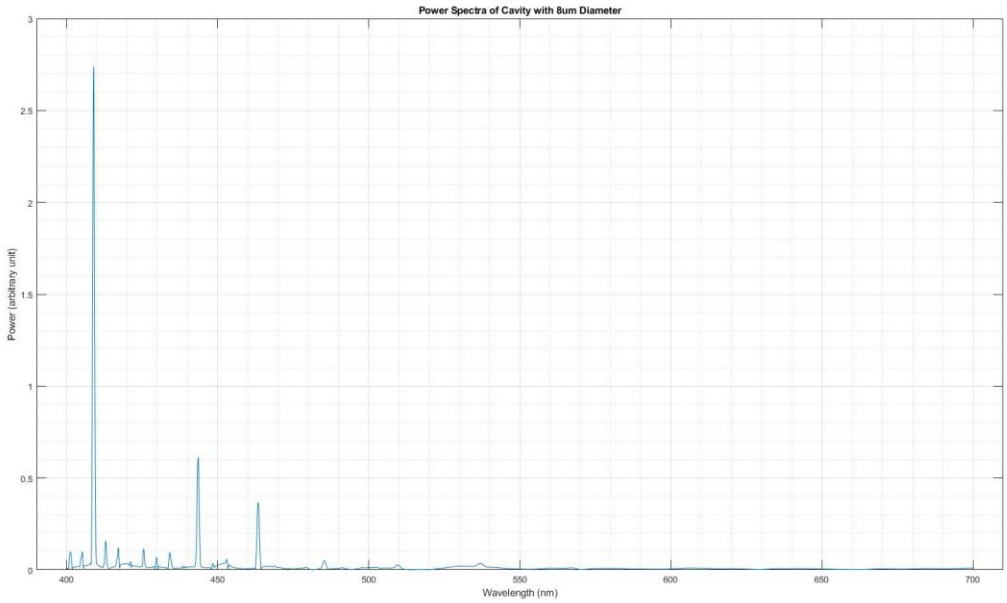

Figure 62: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 1.9.

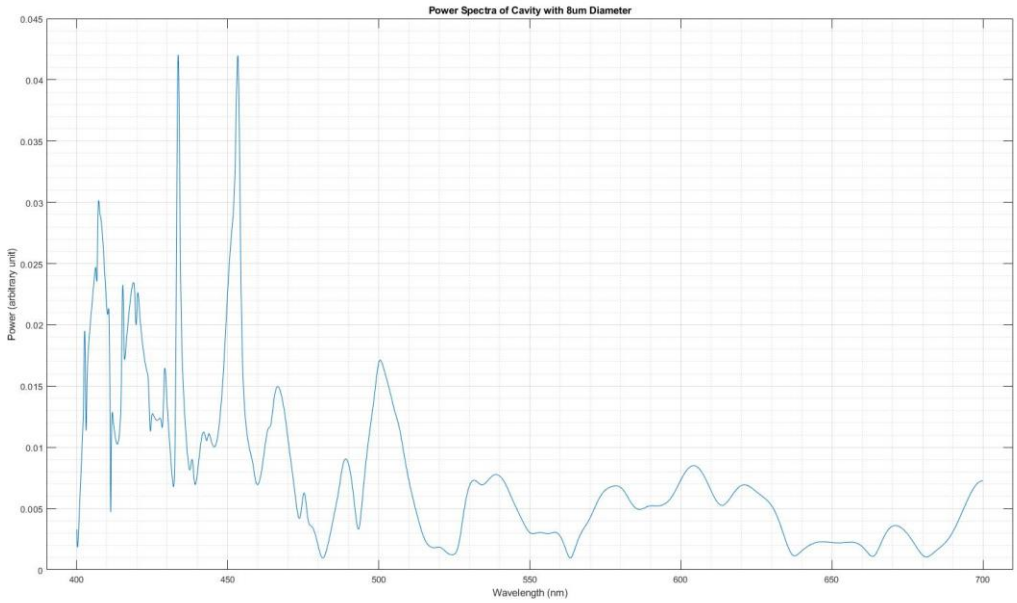

Figure 63: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 1.8.

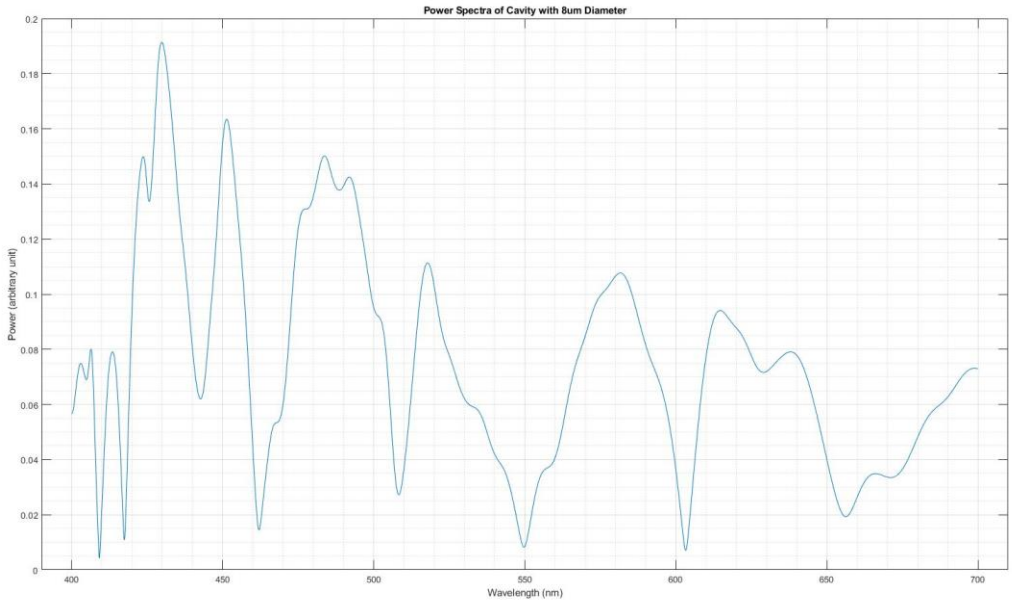

Figure 64: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 1.7.

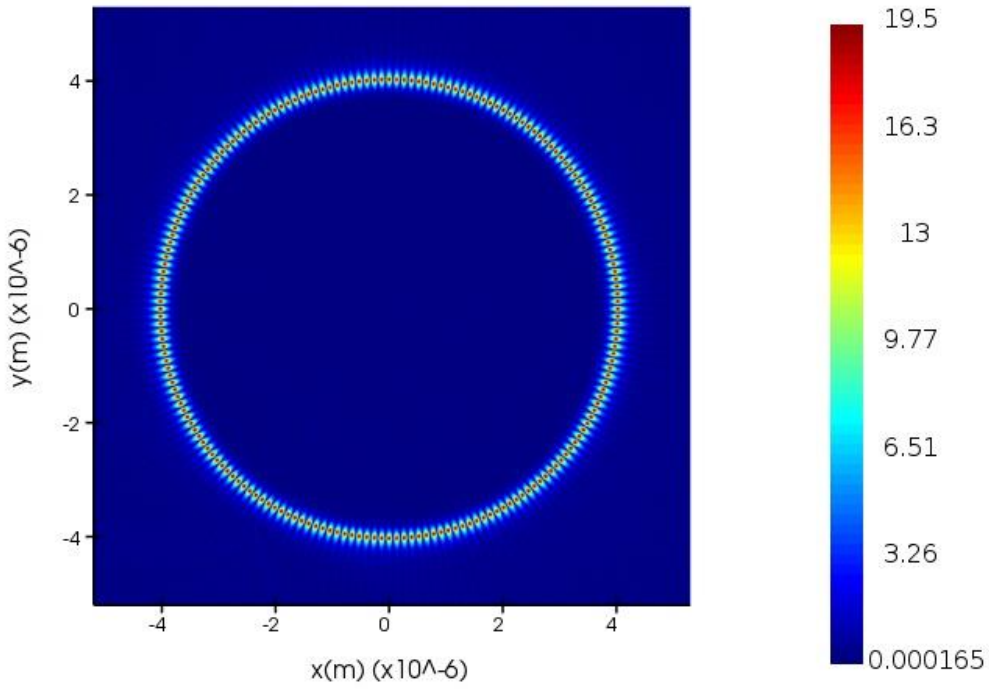

Figure 65: Heatmap of the resonance mode obtained from a disk-shaped cavity of 8 μm diameter. The resonance mode is at wavelength 405 nm.

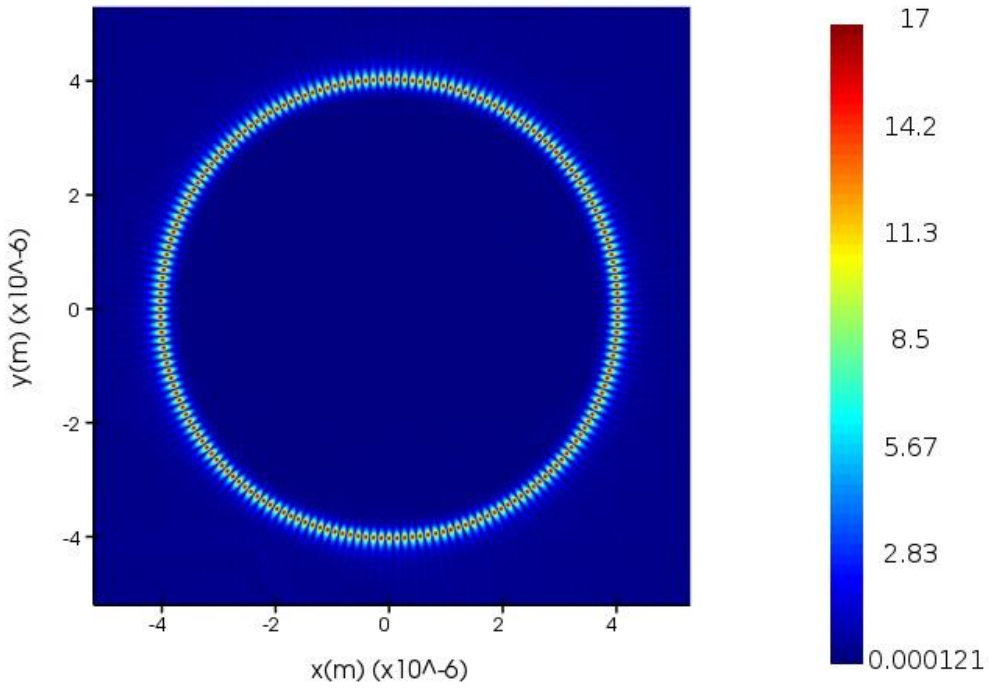

Figure 66: Heatmap of the resonance mode obtained from a disk-shaped cavity of 8 μm diameter. The resonance mode is at wavelength 420 nm.

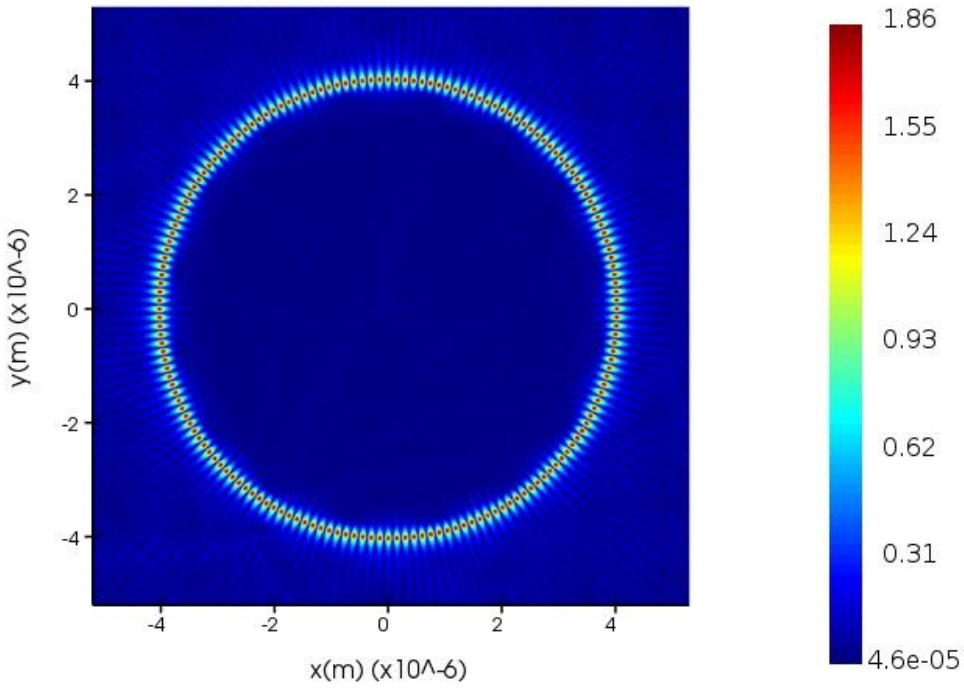

Figure 67: Heatmap of the resonance mode obtained from a disk-shaped cavity of 8 µm diameter. The resonance mode is at wavelength 454 nm.

4. For 7 μm diameter disk-shaped cavity:

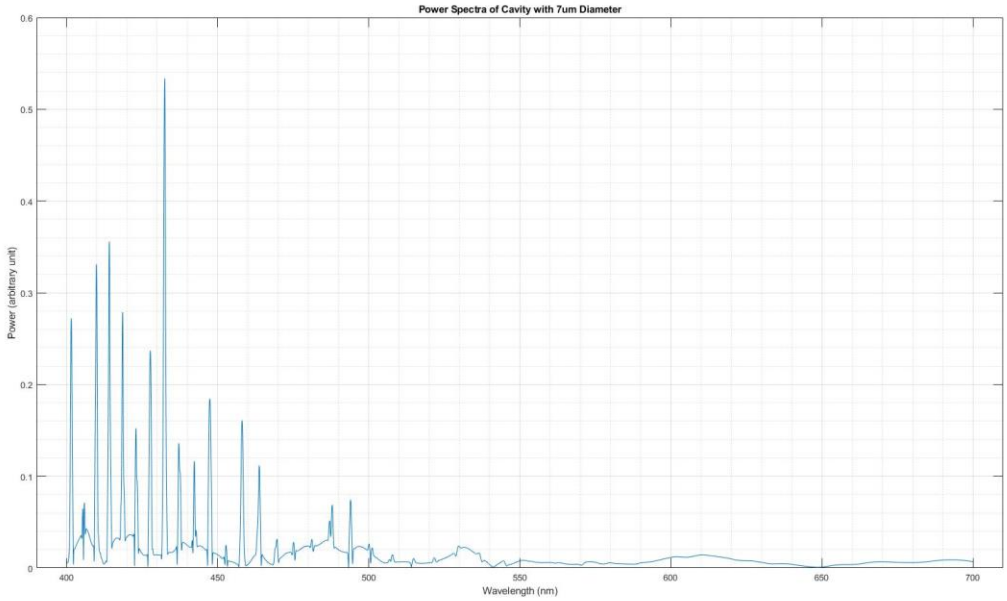

Figure 68: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 2.0.

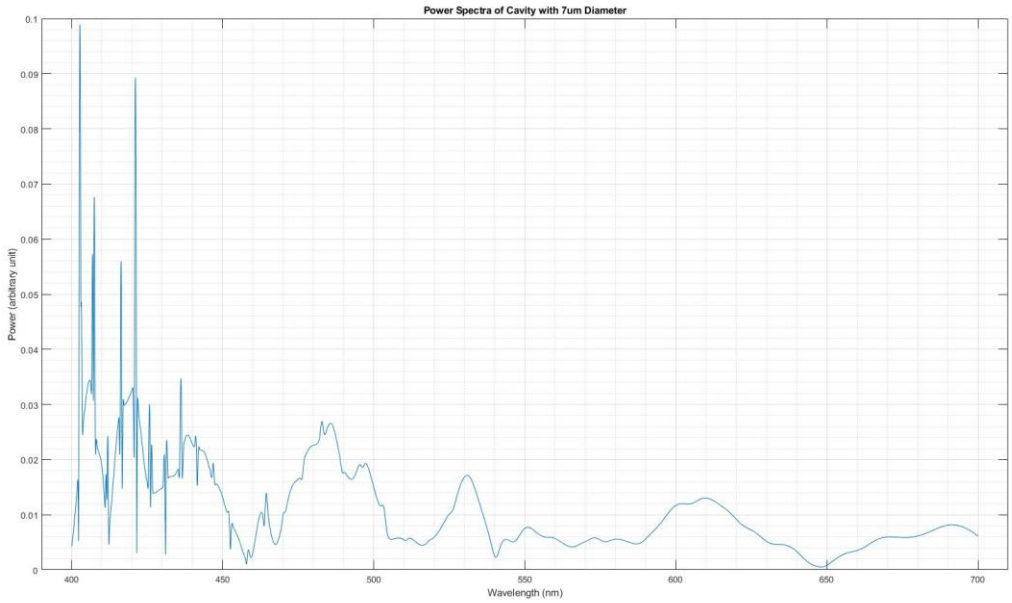

Figure 69: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 1.9.

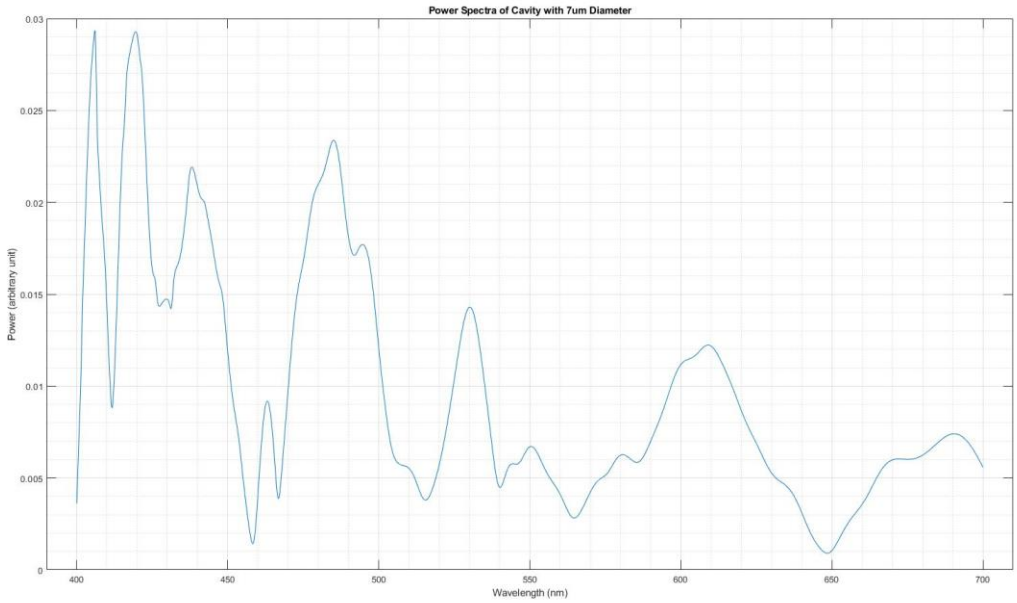

Figure 70: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 1.8.

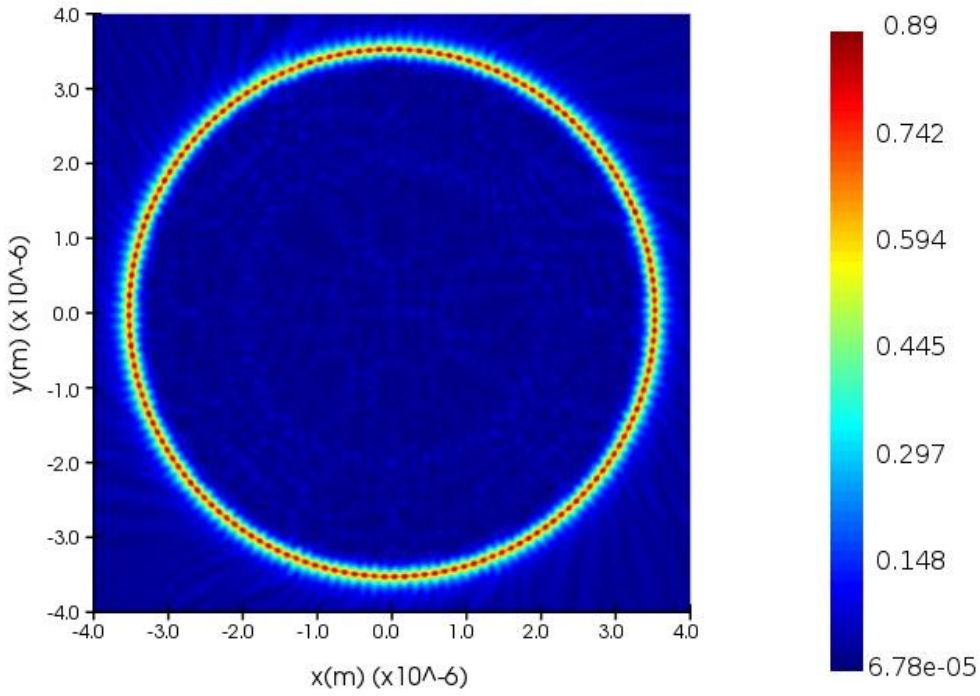

Figure 71: Heatmap of the resonance mode obtained from a disk-shaped cavity of 7 µm diameter. The resonance mode is at wavelength 414 nm.

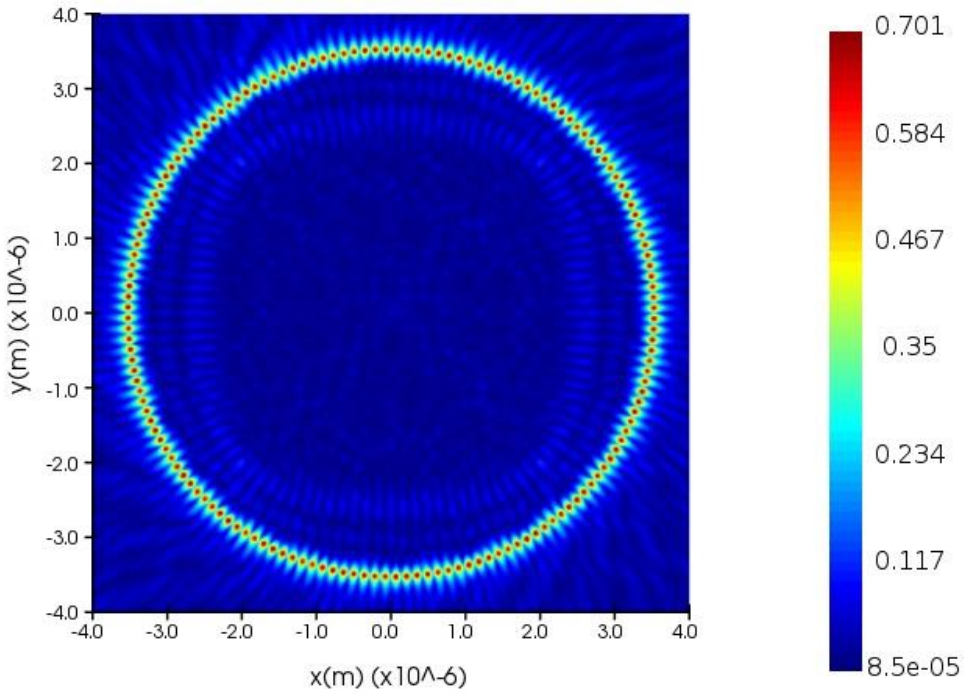

Figure 72: Heatmap of the resonance mode obtained from a disk-shaped cavity of 7 μm diameter. The resonance mode is at wavelength 432 nm.

5. For 6 μm diameter disk-shaped cavity:

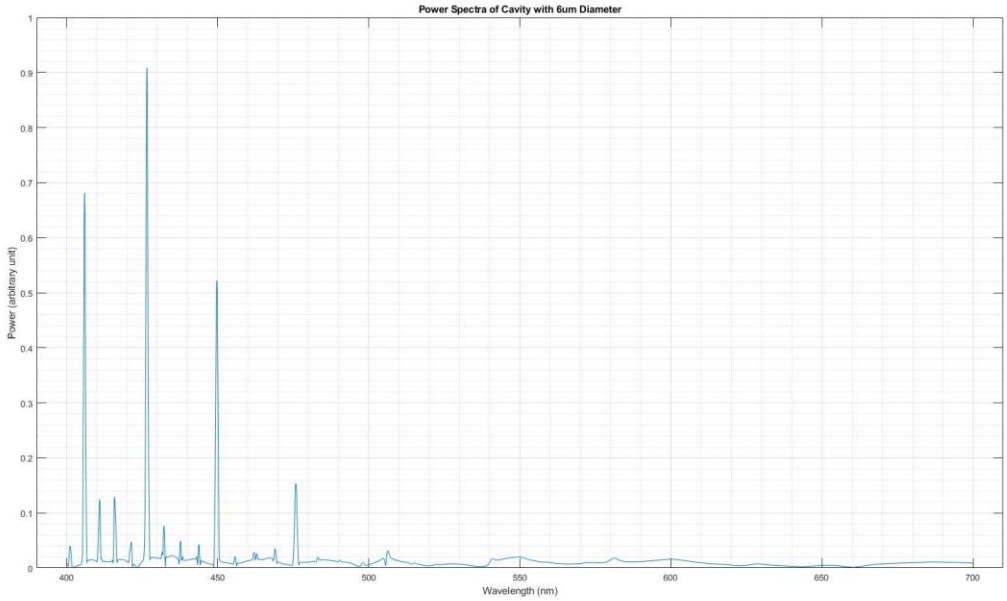

Figure 73: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 2.0.

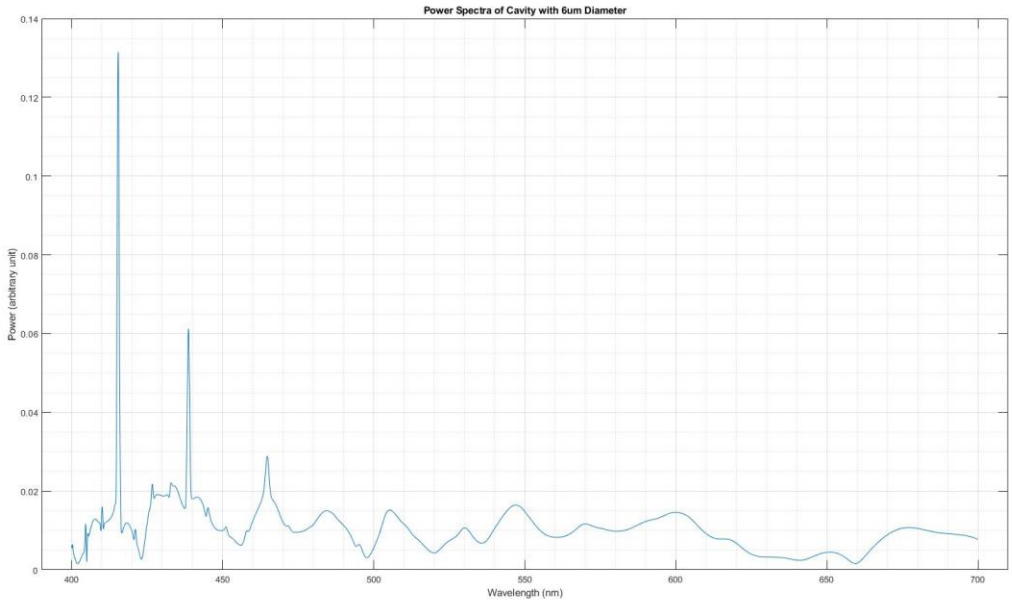

Figure 74: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 1.9.

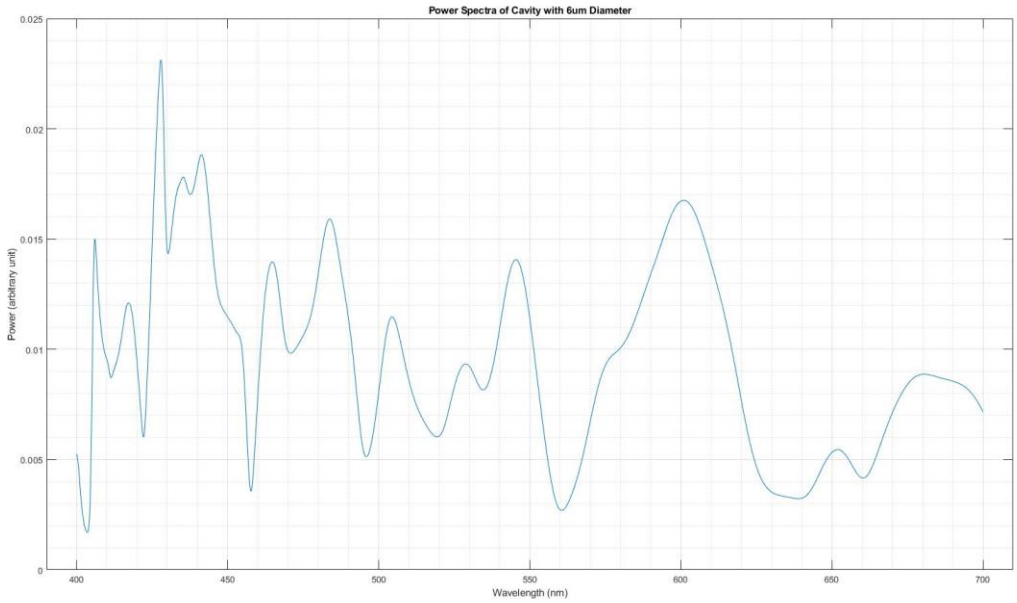

Figure 75: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 1.8.

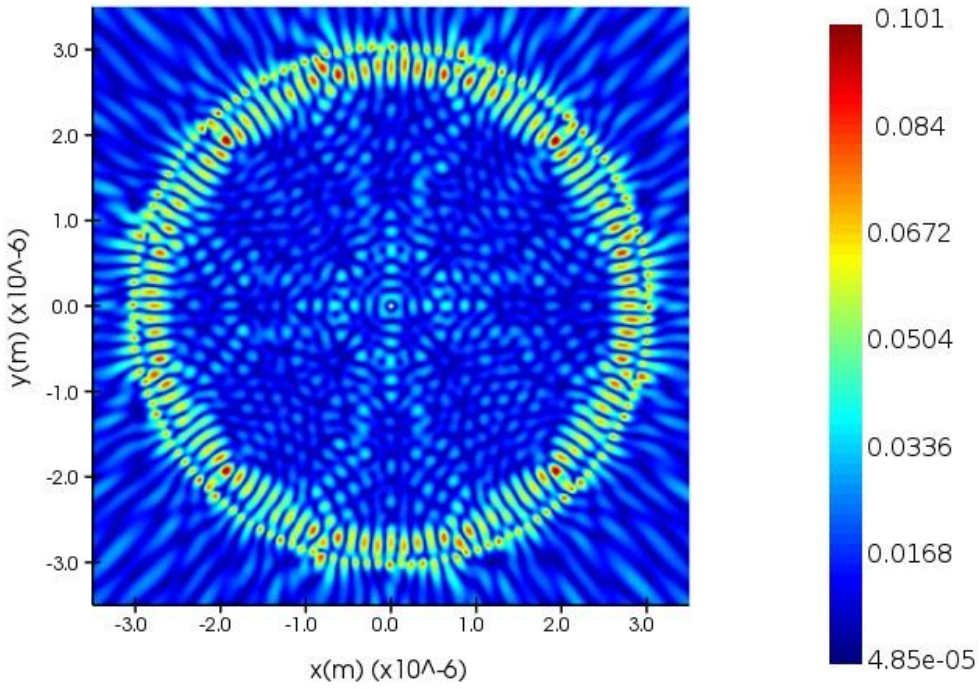

Figure 76: Heatmap of the resonance mode obtained from a disk-shaped cavity of 6 μm diameter. The resonance mode is at wavelength 405 nm.

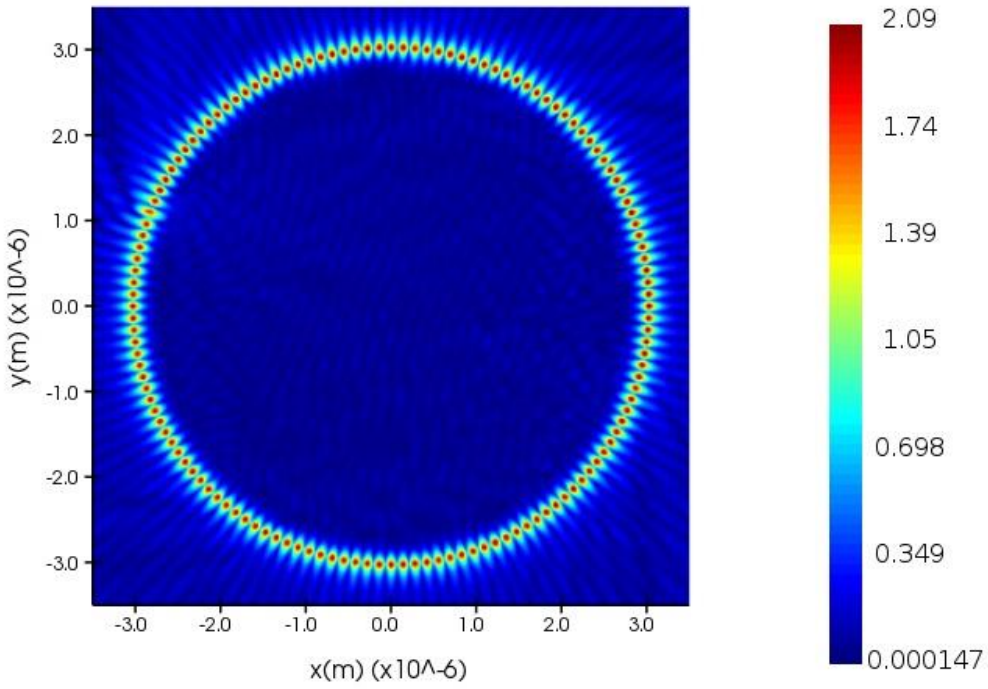

Figure 77: Heatmap of the resonance mode obtained from a disk-shaped cavity of 6 µm diameter. The resonance mode is at wavelength 426 nm.

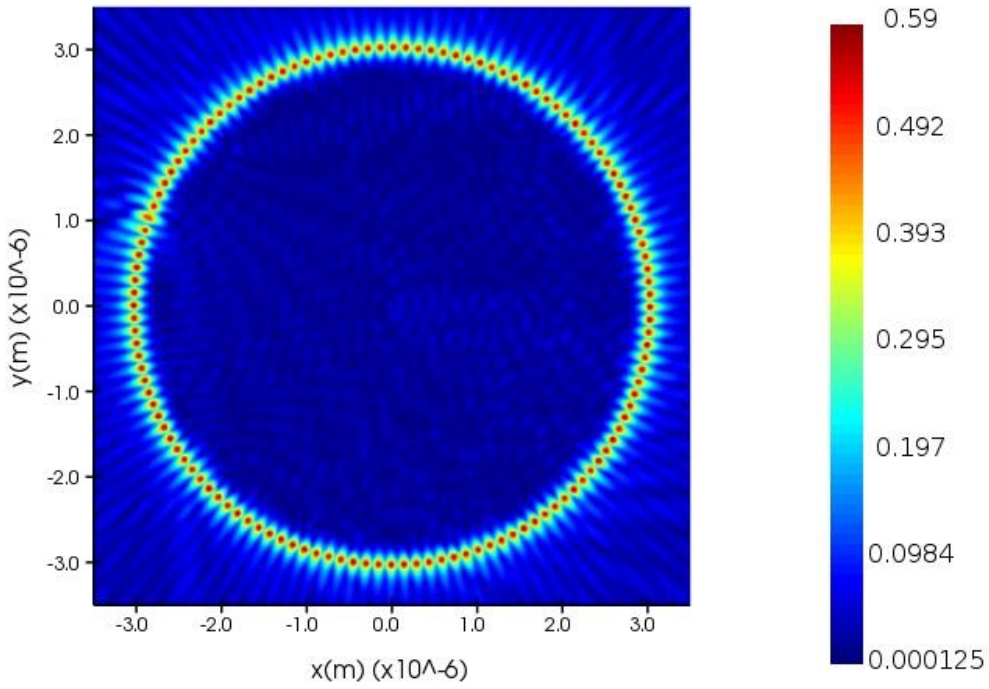

Figure 78: Heatmap of the resonance mode obtained from a disk-shaped cavity of 6 μm diameter. The resonance mode is at wavelength 449 nm.

6. For 5 μm diameter disk-shaped cavity:

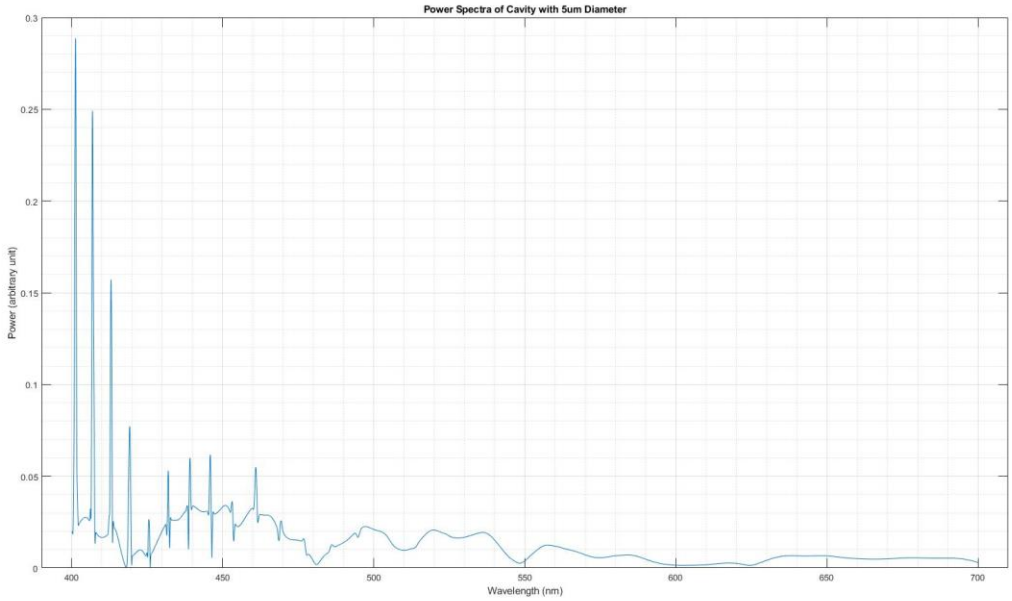

Figure 79: Power spectra of cavity with 5 μm diameter. Refractive index of the membrane in this model is 2.0.

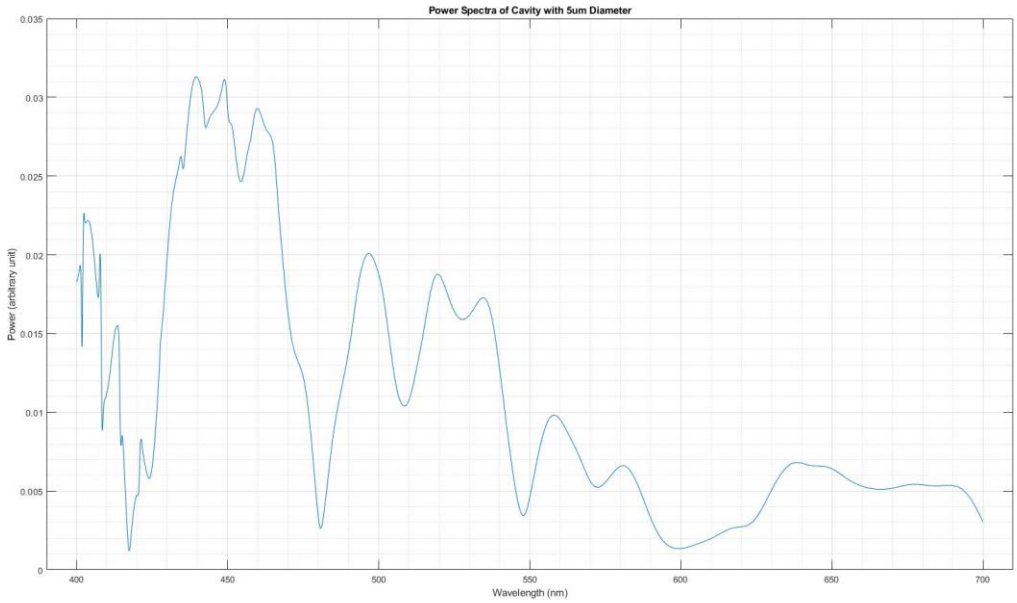

Figure 80: Power spectra of cavity with 5 μm diameter. Refractive index of the membrane in this model is 1.9.

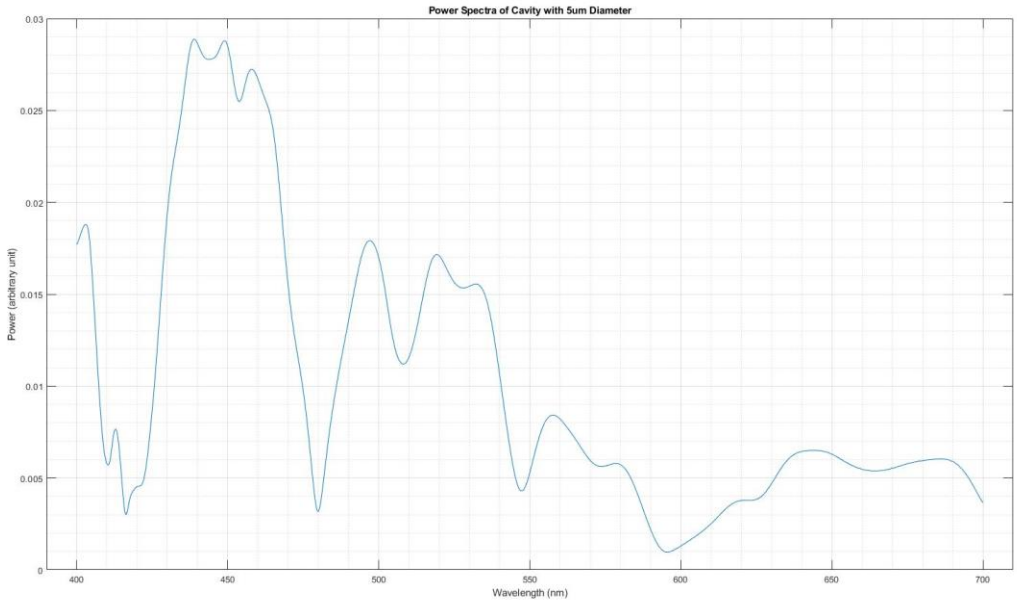

Figure 81: Power spectra of cavity with 5 μm diameter. Refractive index of the membrane in this model is 1.8.

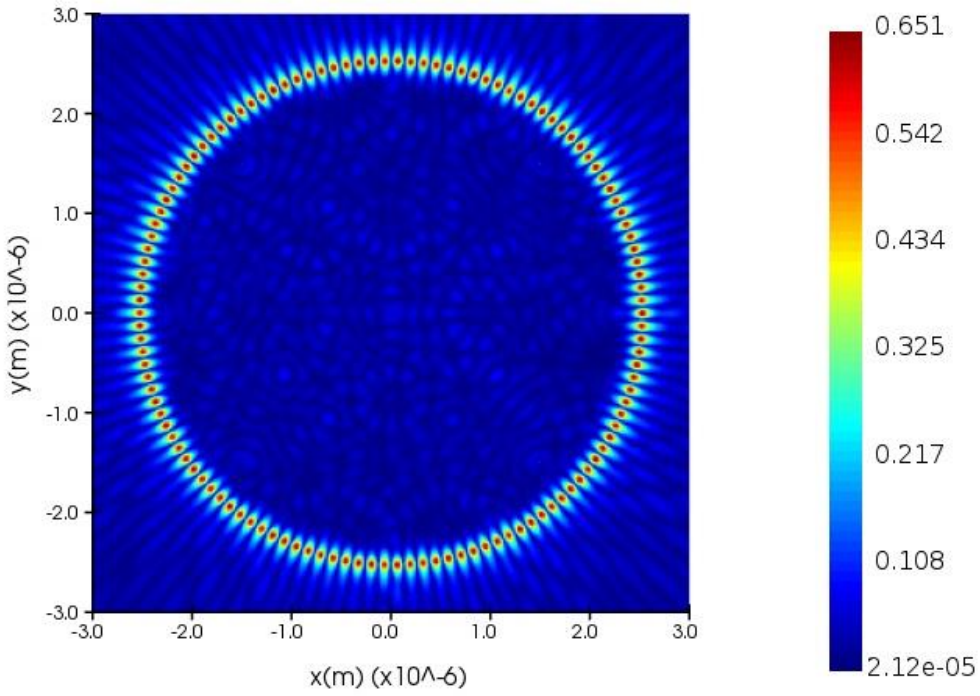

Figure 82: Heatmap of the resonance mode obtained from a disk-shaped cavity of 5 µm diameter. The resonance mode is at wavelength 401 nm.

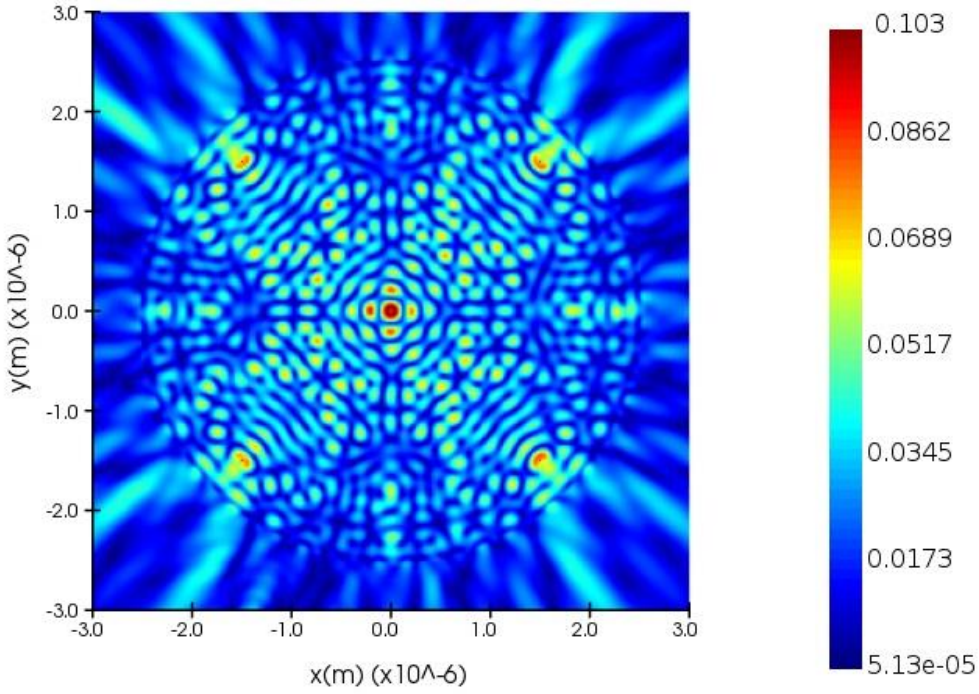

Figure 83: Heatmap of the resonance mode obtained from a disk-shaped cavity of 5 µm diameter. The resonance mode is at wavelength 406 nm.

7. For 4 μm diameter disk-shaped cavity:

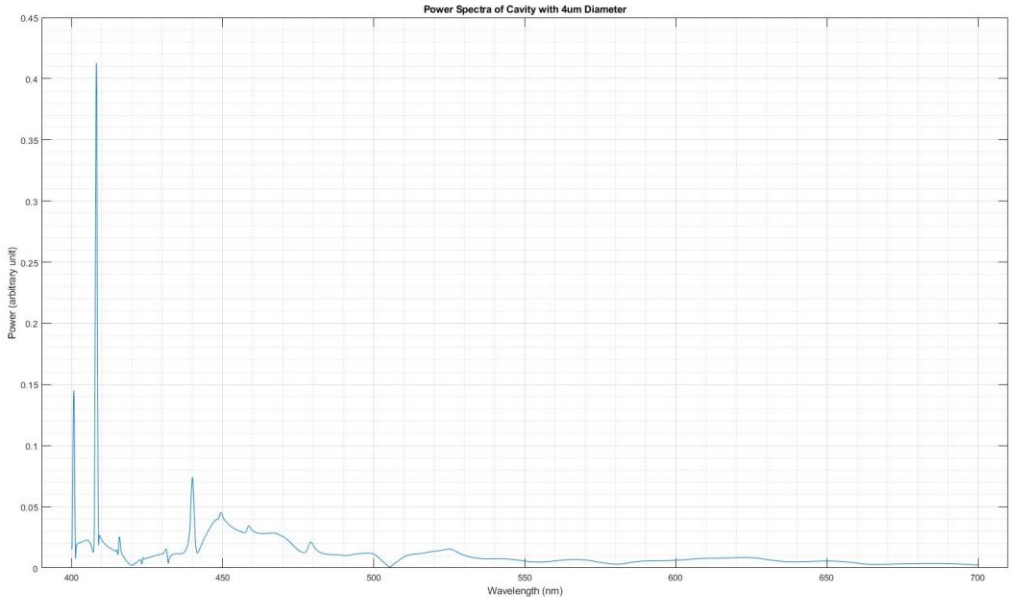

Figure 84: Power spectra of cavity with 4 μm diameter. Refractive index of the membrane in this model is 2.0.

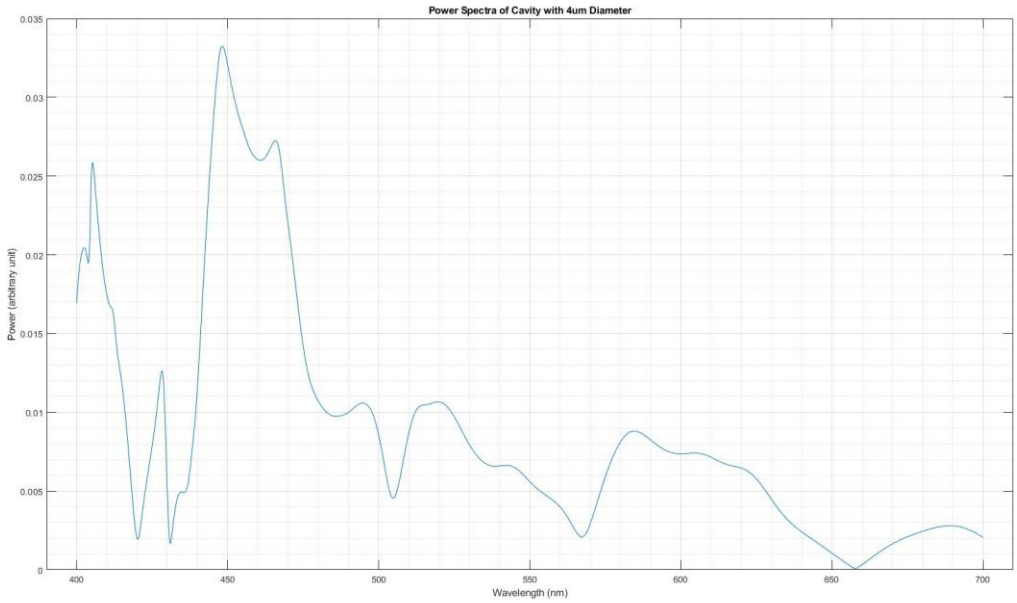

Figure 85: Power spectra of cavity with 4 μm diameter. Refractive index of the membrane in this model is 1.9.

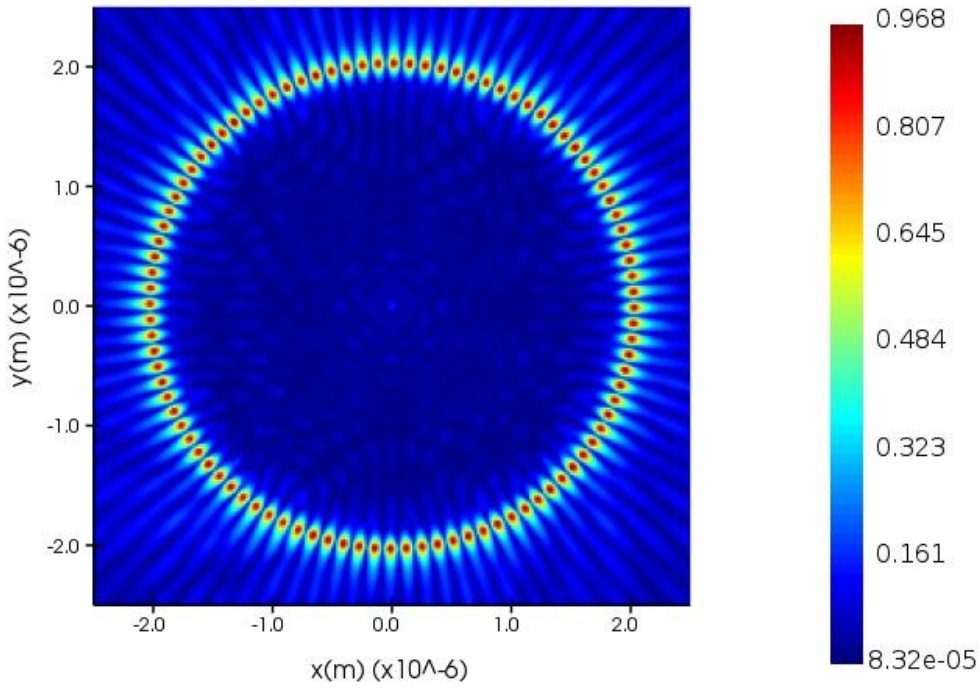

Figure 86: Heatmap of the resonance mode obtained from a disk-shaped cavity of 4 µm diameter. The resonance mode is at wavelength 408 nm.

8. For 3 μm diameter disk-shaped cavity:

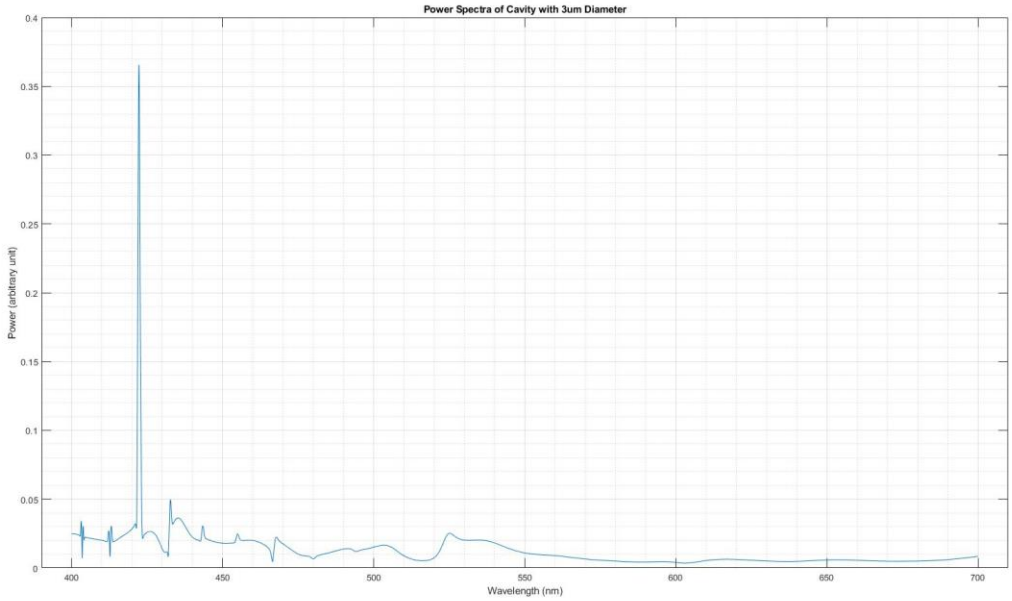

Figure 87: Power spectra of cavity with 3 μm diameter. Refractive index of the membrane in this model is 2.1.

9. For 2 μm diameter disk-shaped cavity:

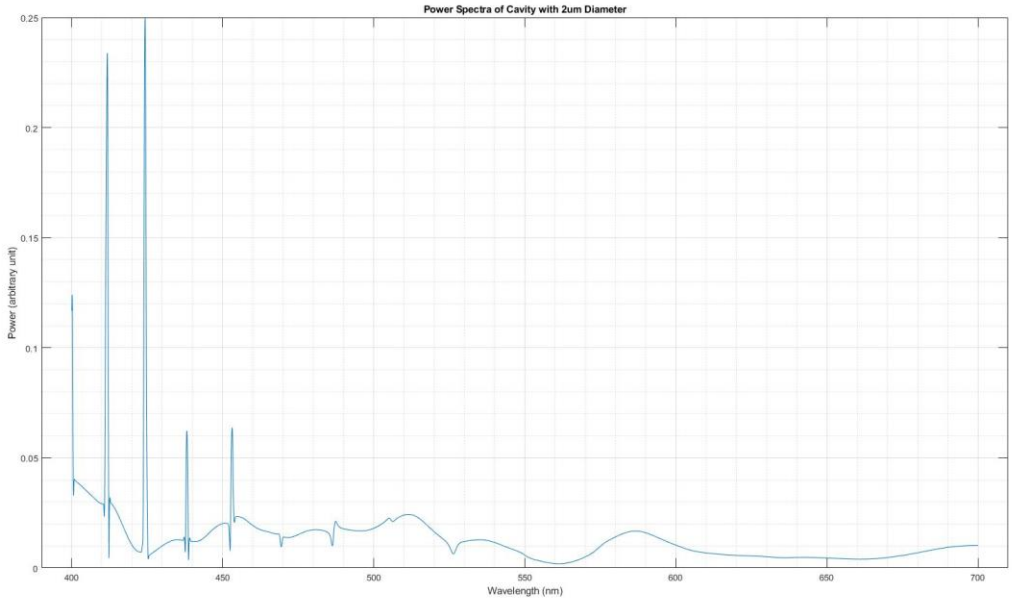

Figure 88: Power spectra of cavity with 2 μm diameter. Refractive index of the membrane in this model is 2.3.

10. For 1 μm diameter disk-shaped cavity:

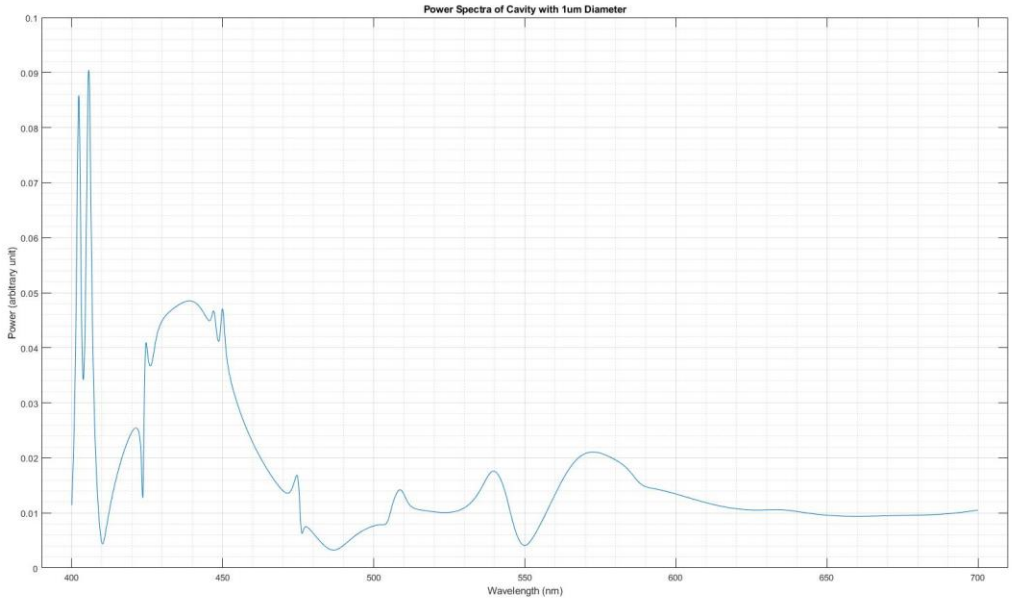

Figure 89: Power spectra of cavity with 1 μm diameter. Refractive index of the membrane in this model is 2.65.

C. Toroidal Models

2. For 9 μm diameter toroidal cavity:

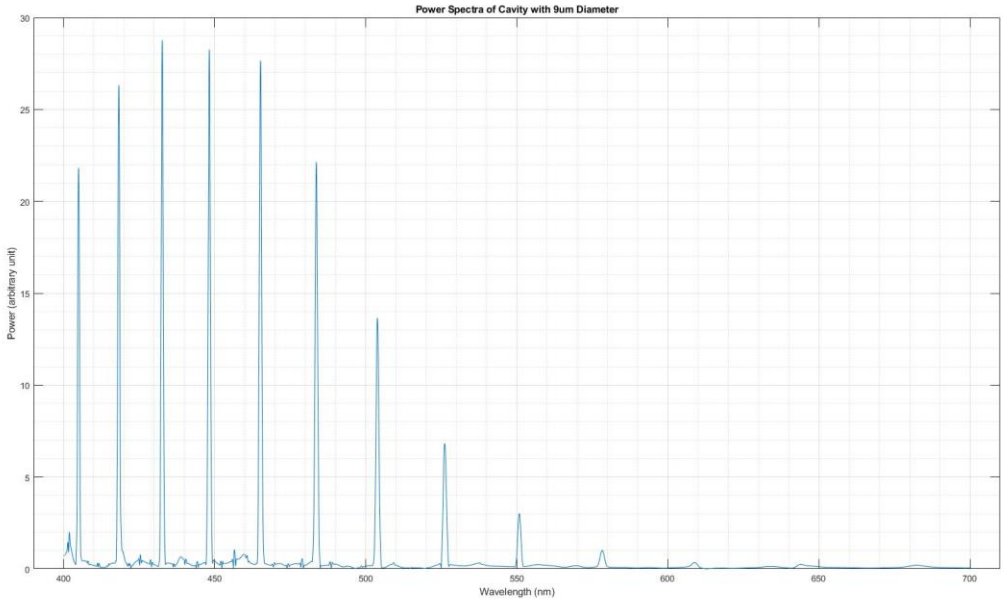

Figure 97: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 2.0.

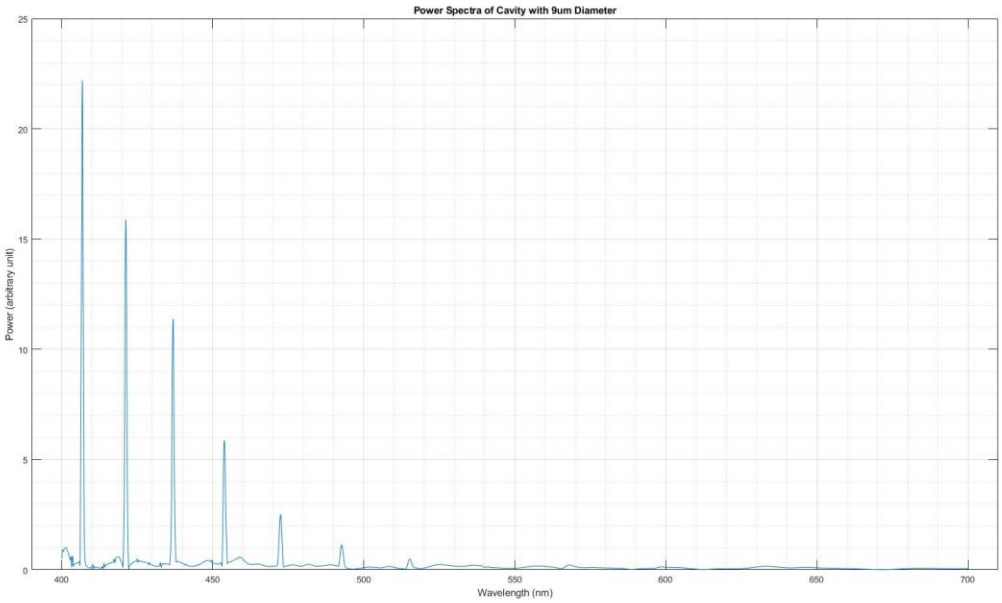

Figure 98: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 1.9.

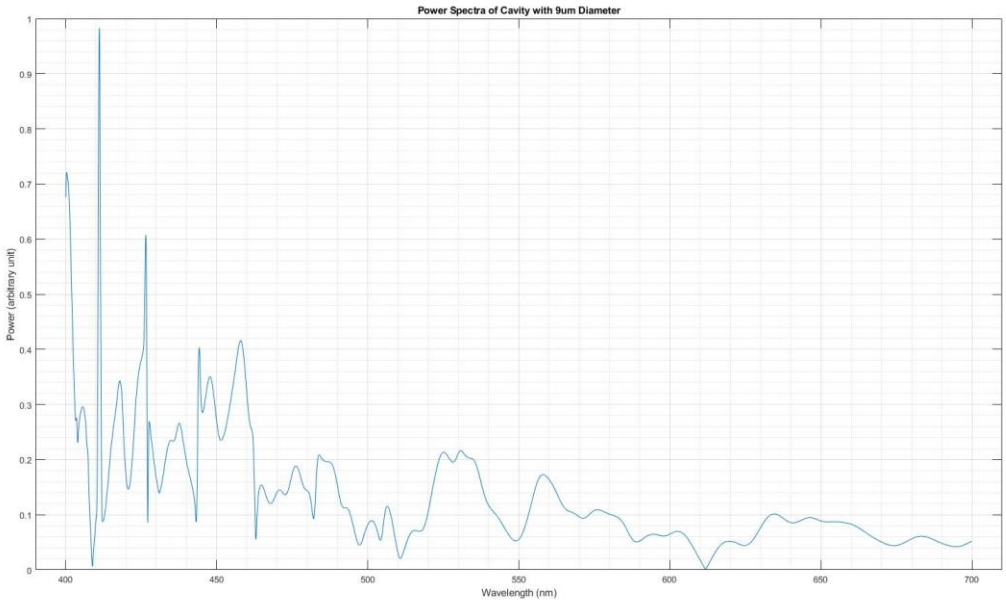

Figure 99: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 1.8.

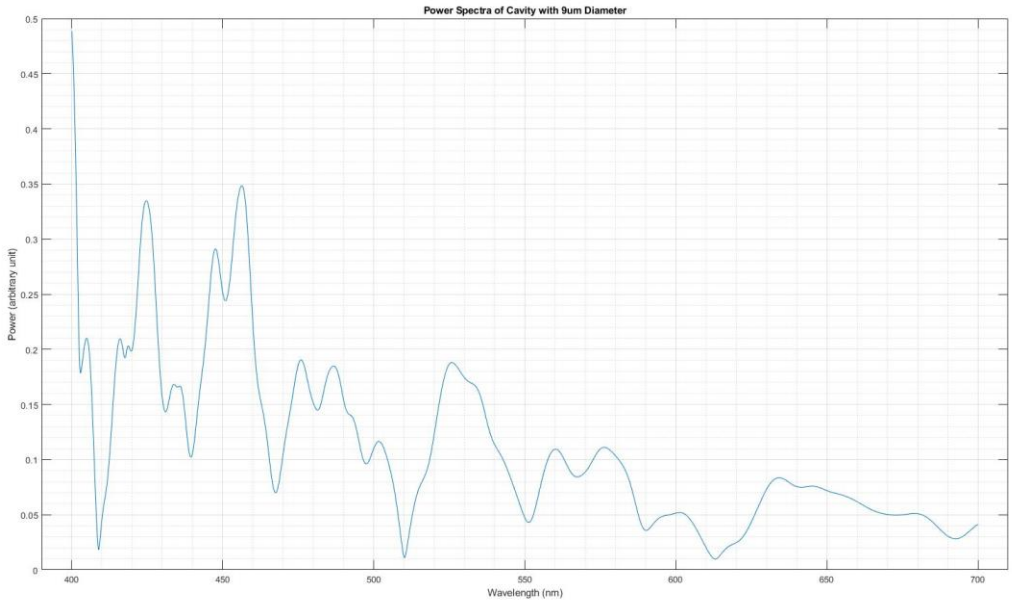

Figure 100: Power spectra of cavity with 9 μm diameter. Refractive index of the membrane in this model is 1.7.

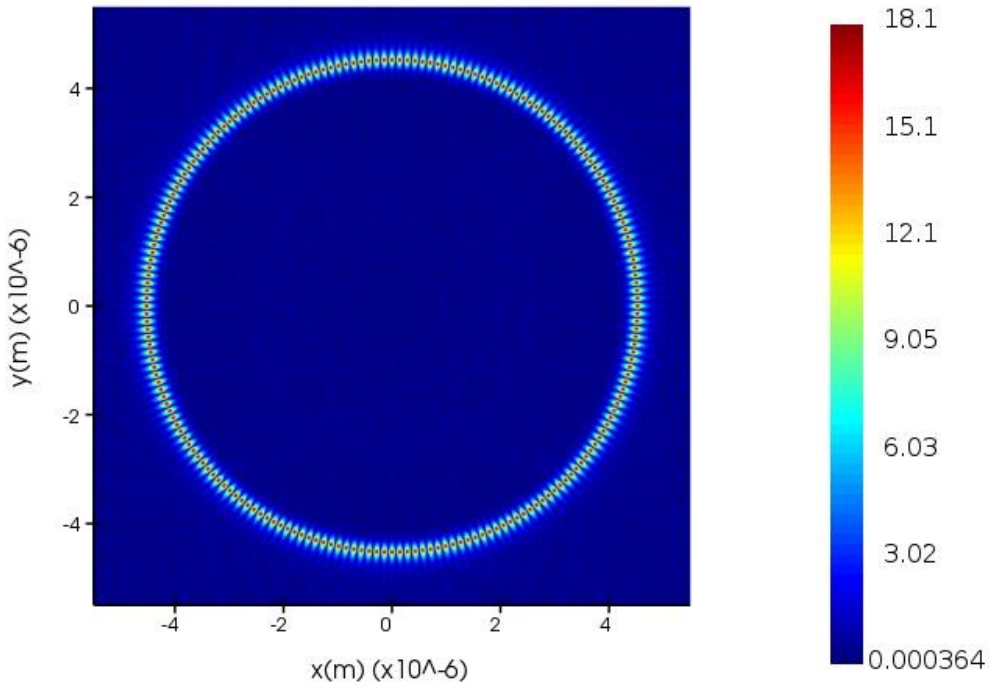

Figure 101: Heatmap of the resonance mode obtained from a toroidal cavity of 9 µm diameter. The resonance mode is at wavelength 432 nm.

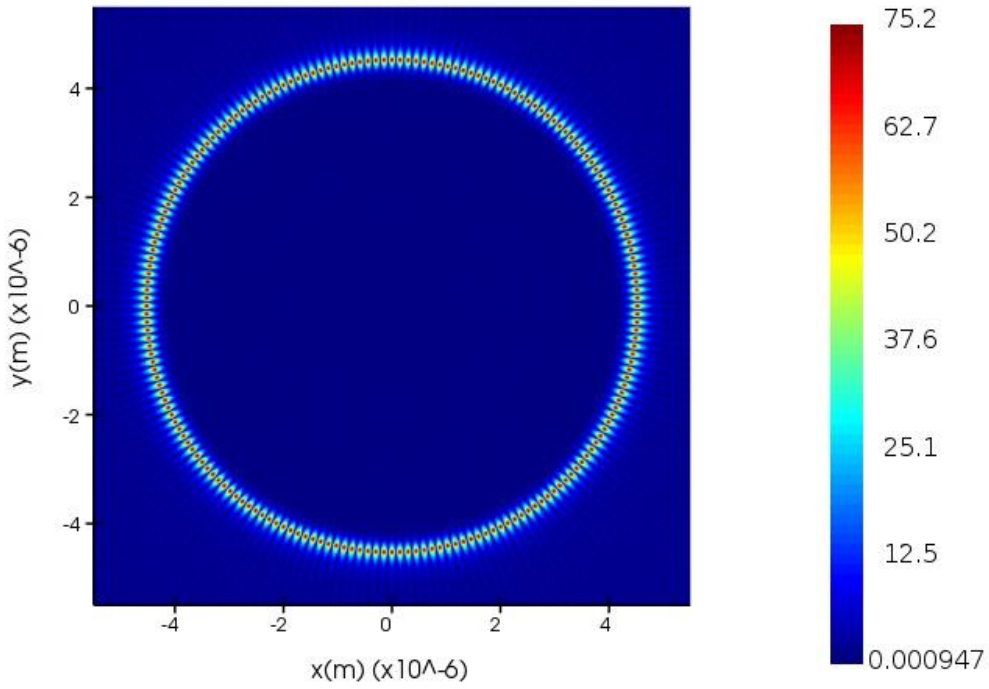

Figure 102: Heatmap of the resonance mode obtained from a toroidal cavity of 9 µm diameter. The resonance mode is at wavelength 448 nm.

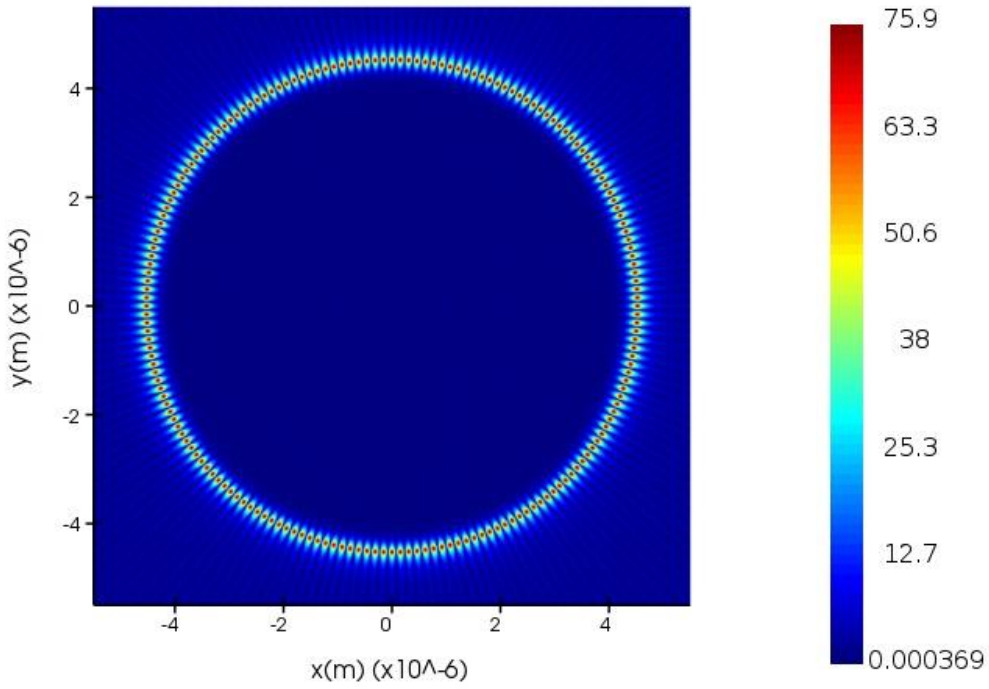

Figure 103: Heatmap of the resonance mode obtained from a toroidal cavity of 9 µm diameter. The resonance mode is at wavelength 465 nm.

3. For 8 μm diameter toroidal cavity:

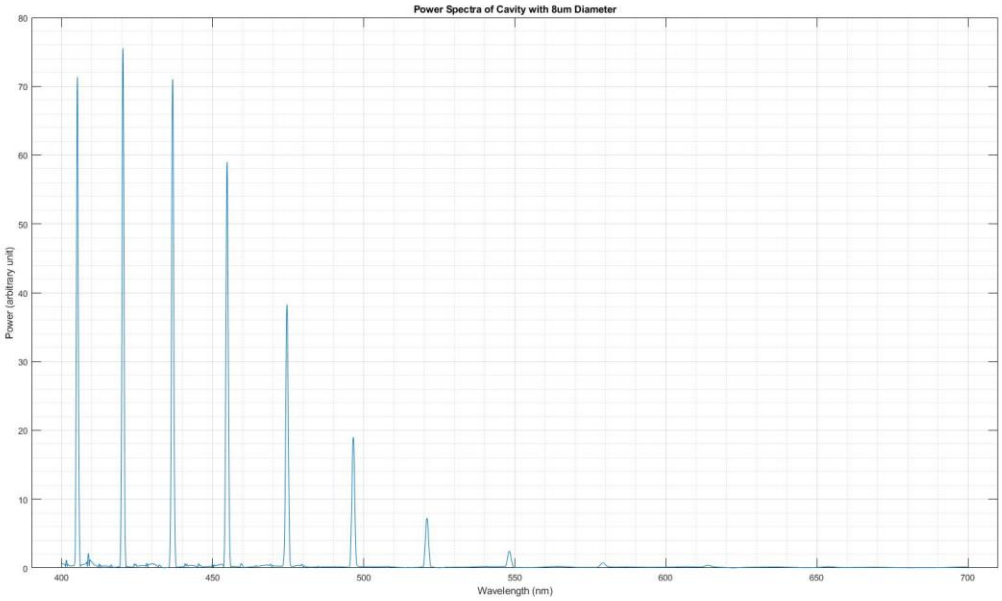

Figure 104: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 2.0.

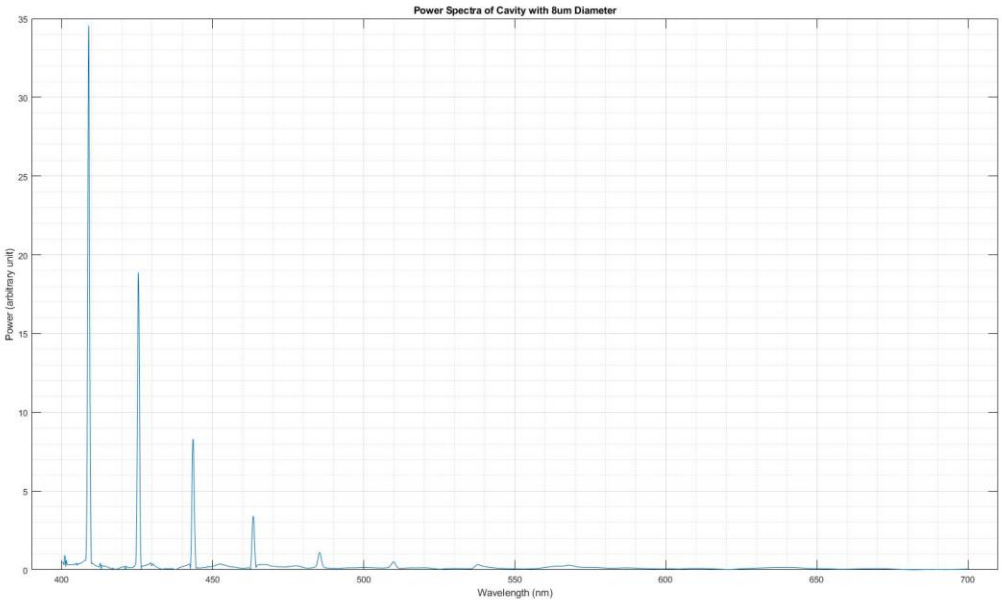

Figure 105: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 1.9.

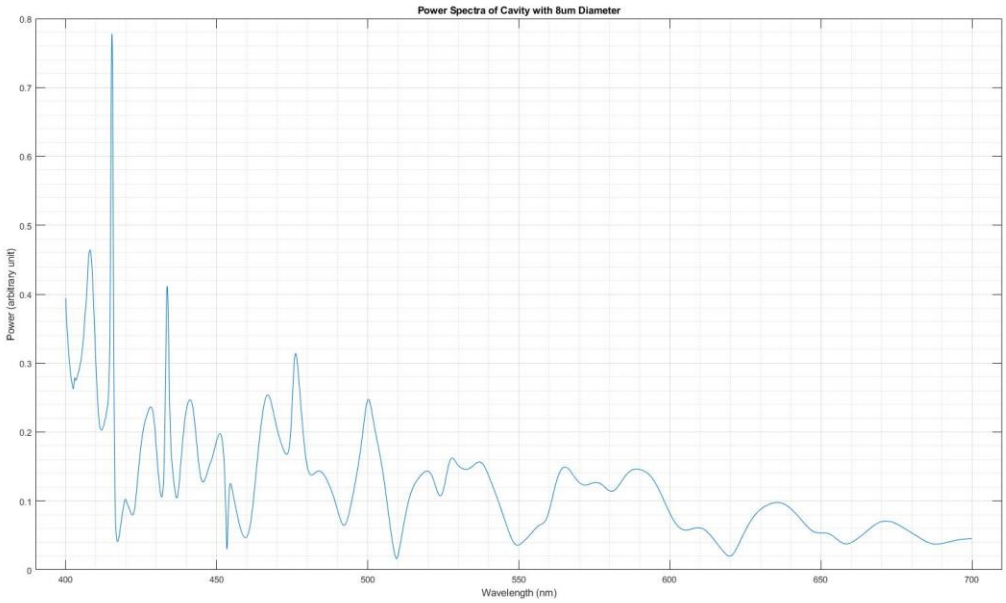

Figure 106: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 1.8.

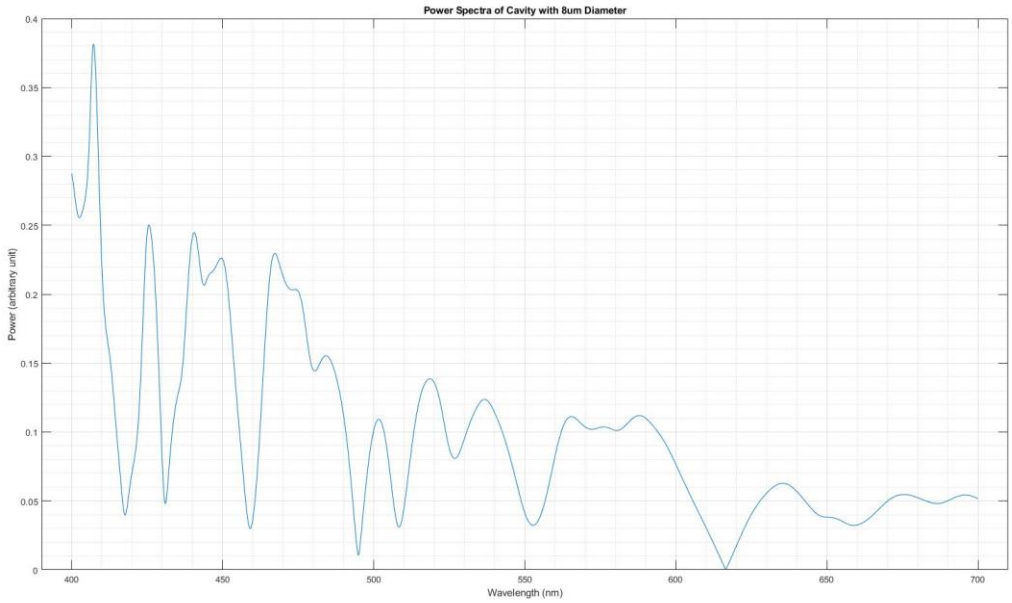

Figure 107: Power spectra of cavity with 8 μm diameter. Refractive index of the membrane in this model is 1.7.

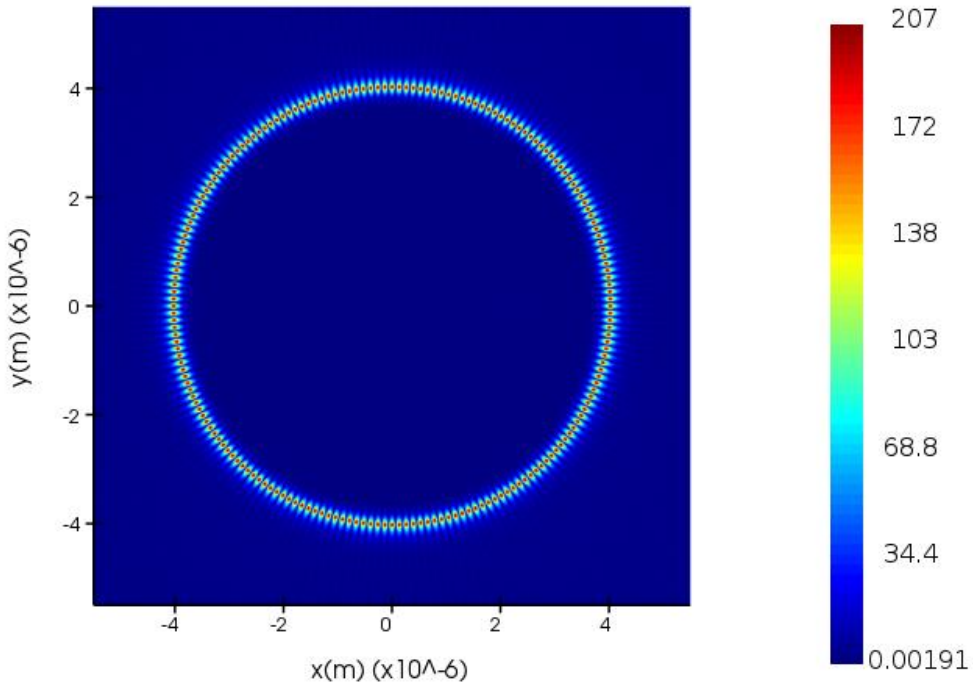

Figure 108: Heatmap of the resonance mode obtained from a toroidal cavity of 8 μm diameter. The resonance mode is at wavelength 405 nm.

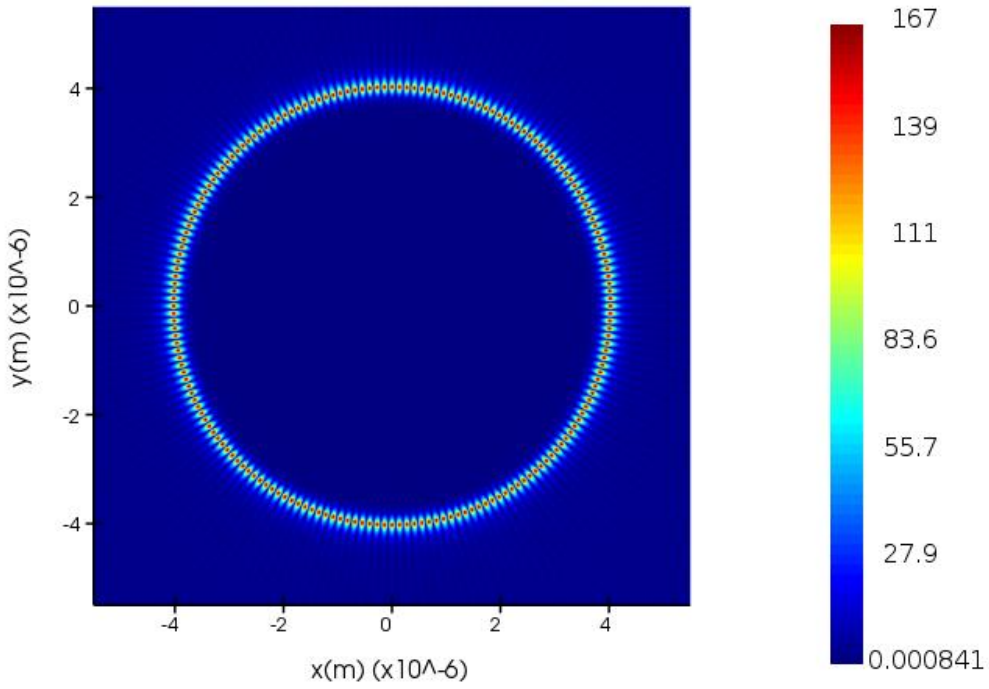

Figure 109: Heatmap of the resonance mode obtained from a toroidal cavity of 8 µm diameter. The resonance mode is at wavelength 420 nm.

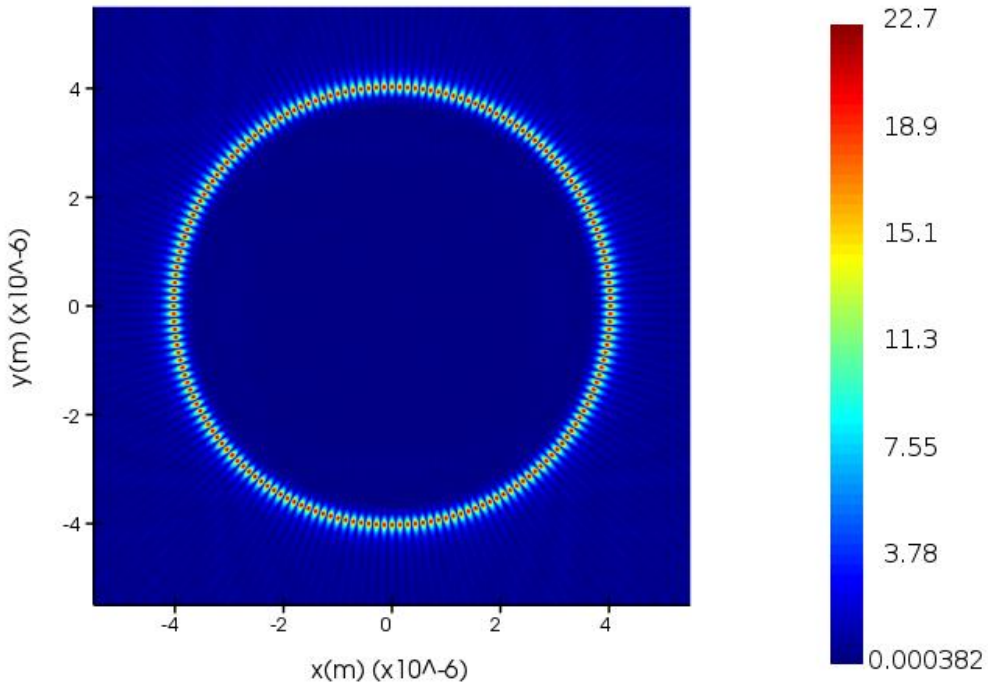

Figure 110: Heatmap of the resonance mode obtained from a toroidal cavity of 8 µm diameter. The resonance mode is at wavelength 436 nm.

4. For 7 μm diameter toroidal cavity:

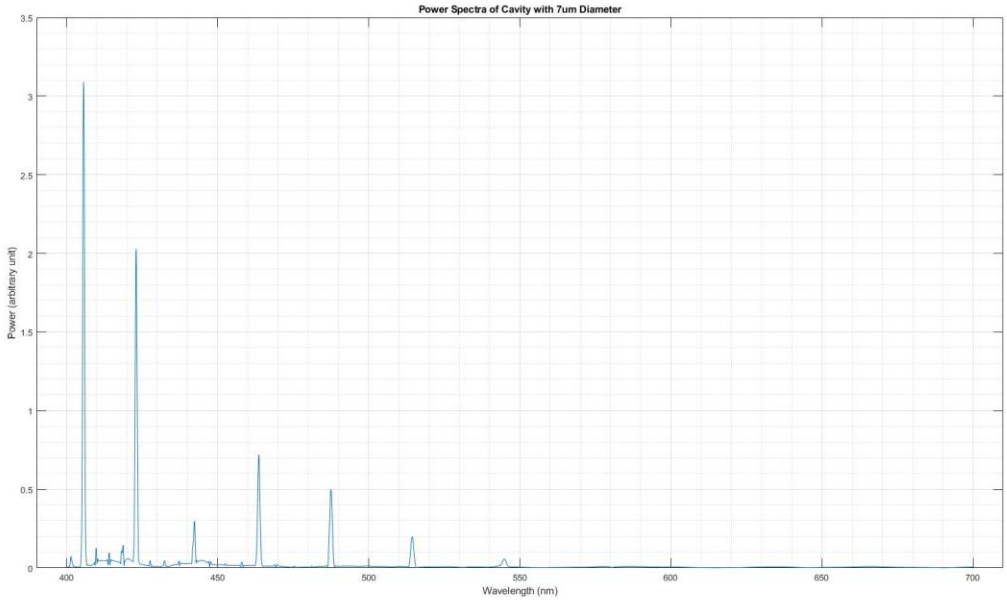

Figure 111: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 2.0.

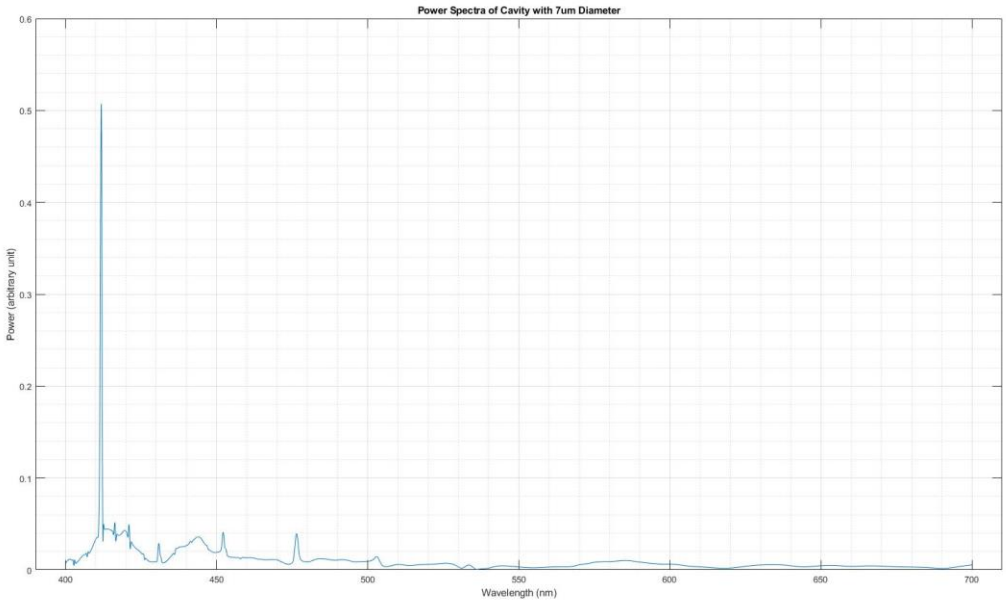

Figure 112: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 1.9.

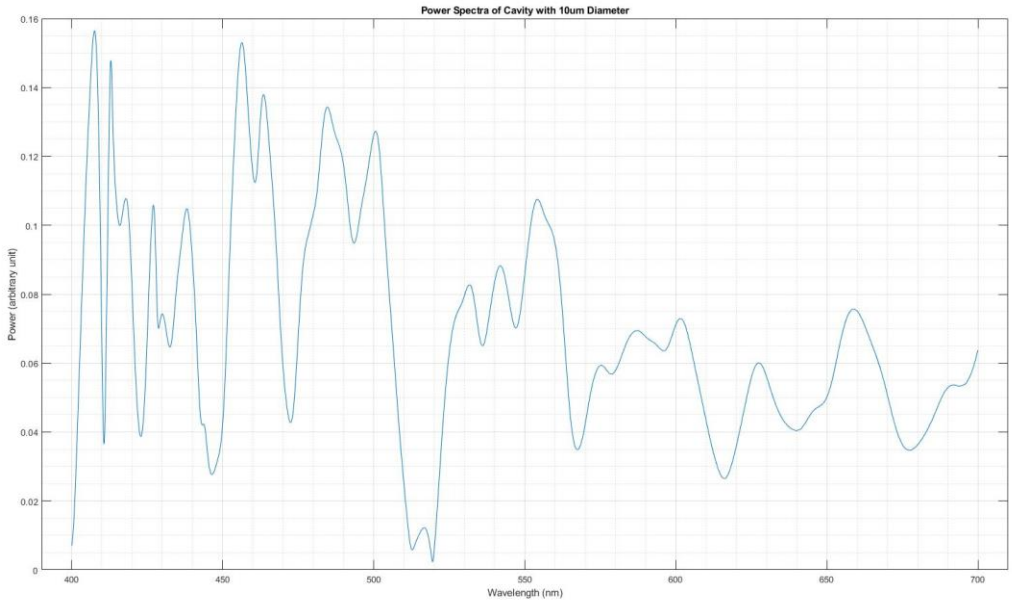

Figure 113: Power spectra of cavity with 7 μm diameter. Refractive index of the membrane in this model is 1.8.

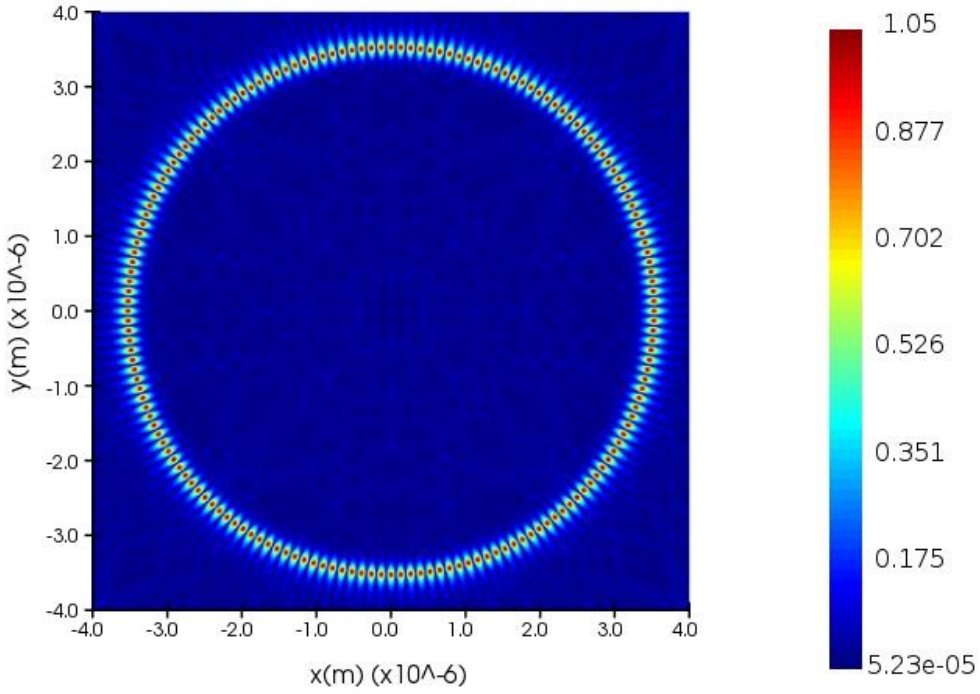

Figure 114: Heatmap of the resonance mode obtained from a toroidal cavity of 7 µm diameter. The resonance mode is at wavelength 405 nm.

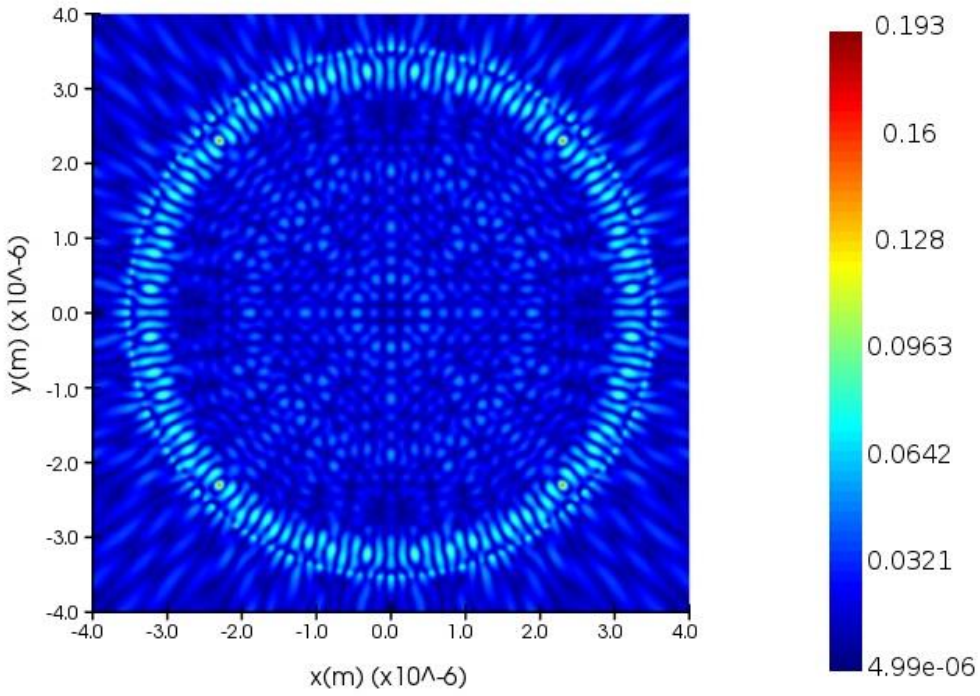

Figure 115: Heatmap of the resonance mode obtained from a toroidal cavity of 7 µm diameter. The resonance mode is at wavelength 422 nm.

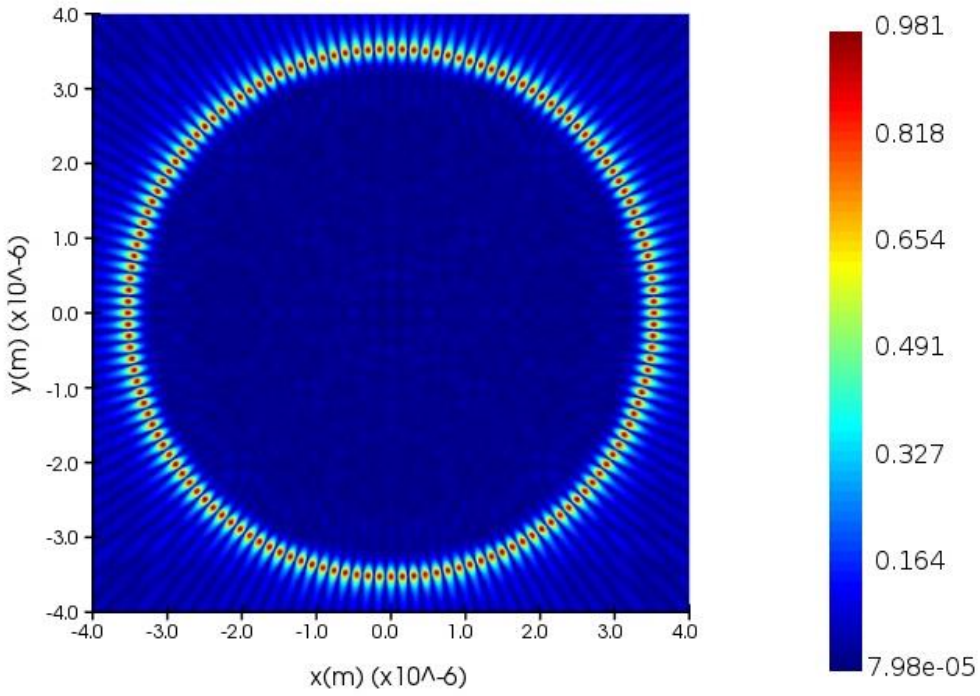

Figure 116: Heatmap of the resonance mode obtained from a toroidal cavity of 7 µm diameter. The resonance mode is at wavelength 463 nm.

5. For 6 μm diameter toroidal cavity:

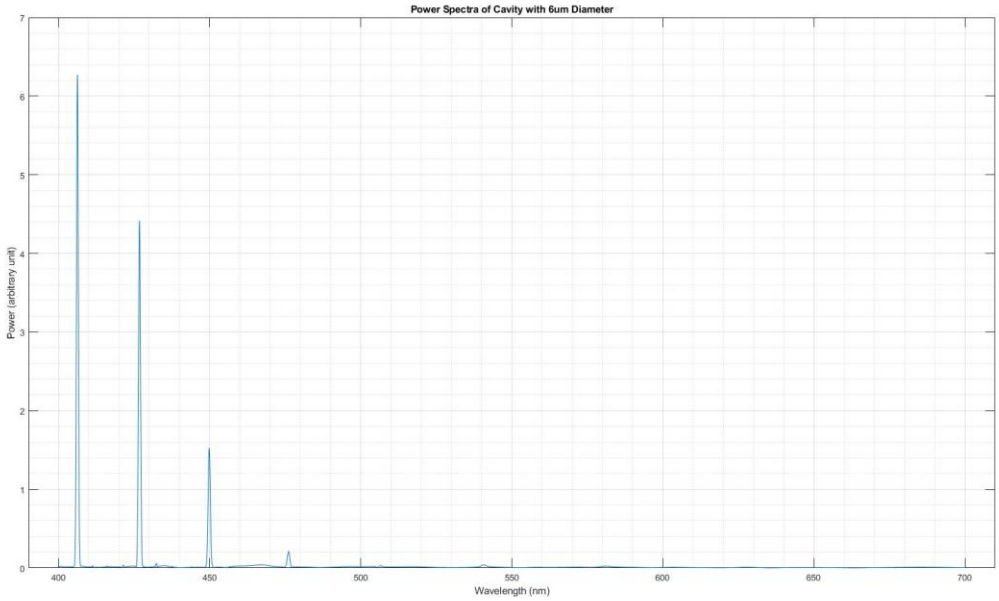

Figure 117: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 2.0.

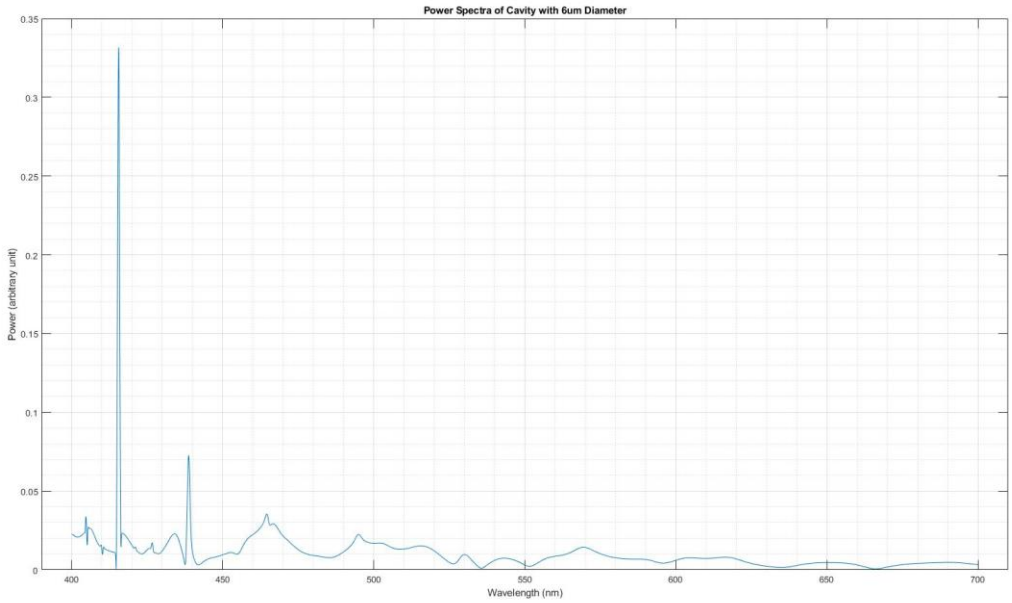

Figure 118: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 1.9.

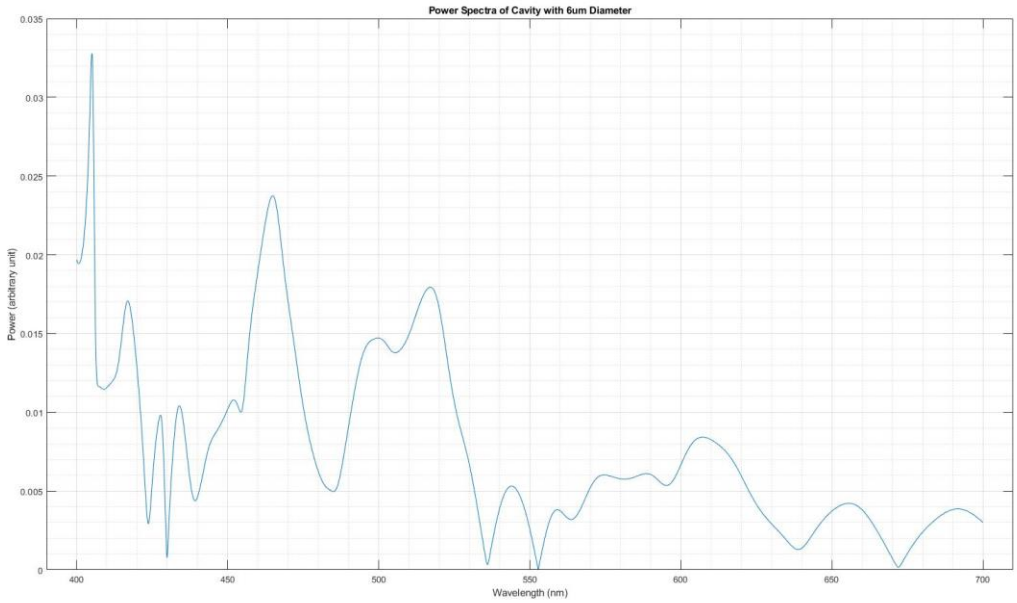

Figure 119: Power spectra of cavity with 6 μm diameter. Refractive index of the membrane in this model is 1.8.

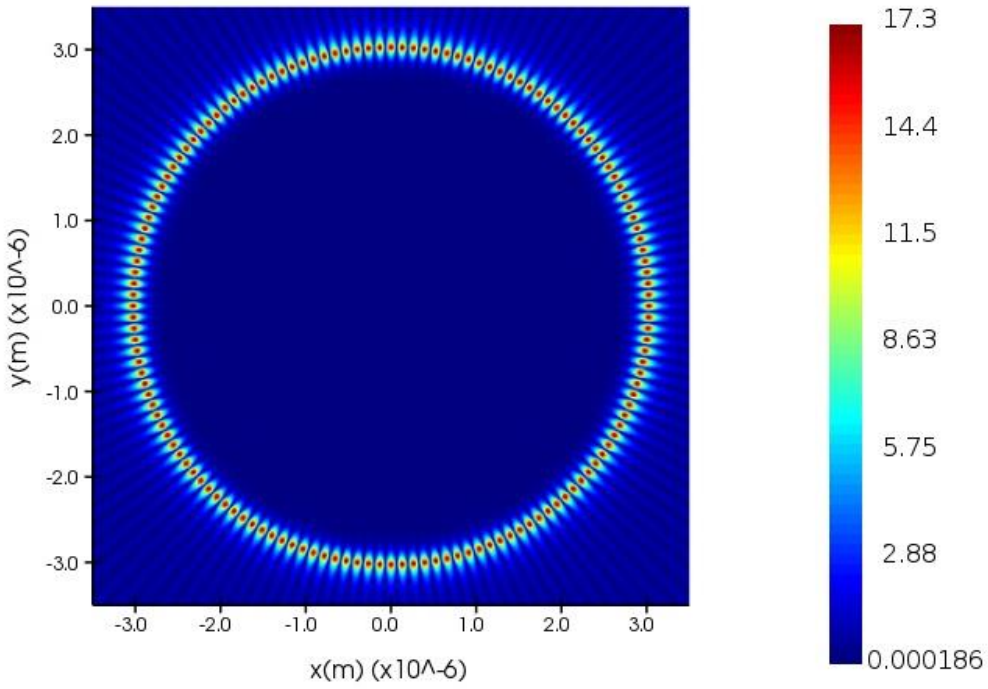

Figure 120: Heatmap of the resonance mode obtained from a toroidal cavity of 6 µm diameter. The resonance mode is at wavelength 406 nm.

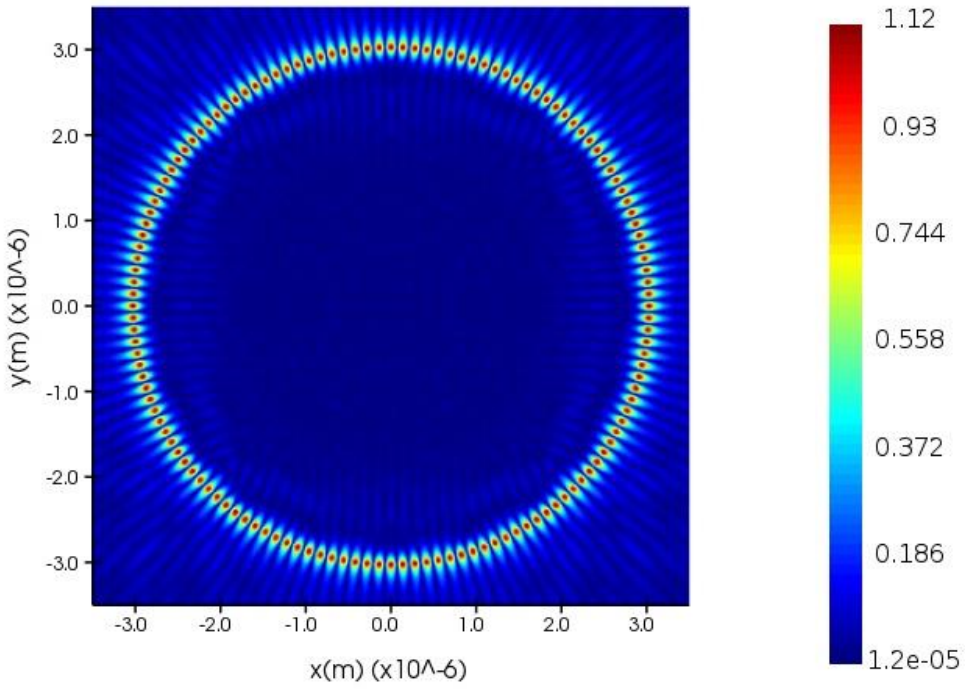

Figure 121: Heatmap of the resonance mode obtained from a toroidal cavity of 6 µm diameter. The resonance mode is at wavelength 426 nm.

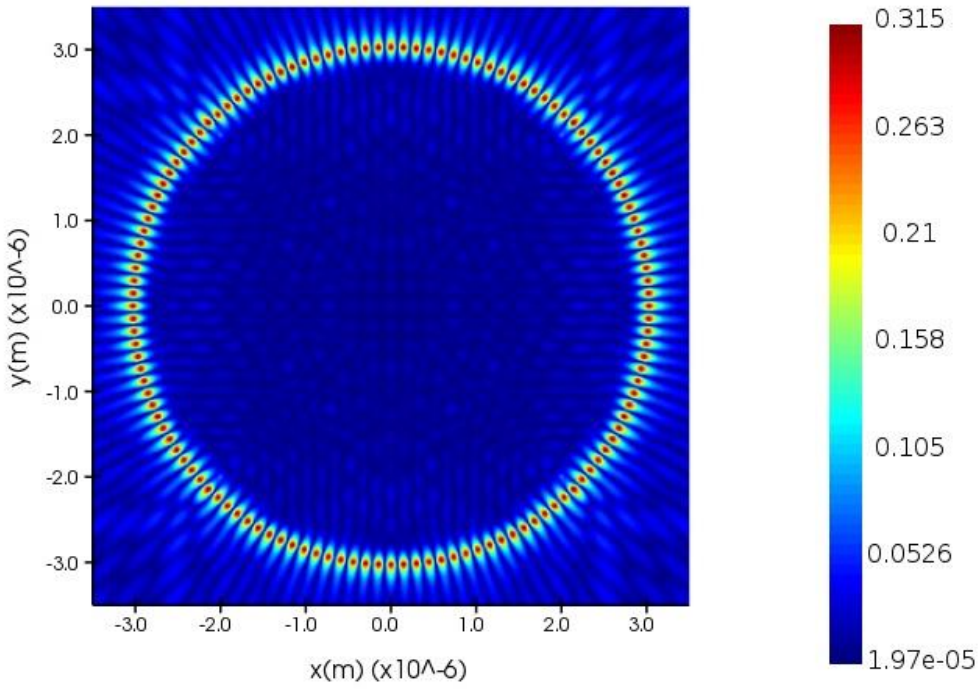

Figure 122: Heatmap of the resonance mode obtained from a toroidal cavity of 6 µm diameter. The resonance mode is at wavelength 449 nm.

6. For 5 μm diameter toroidal cavity:

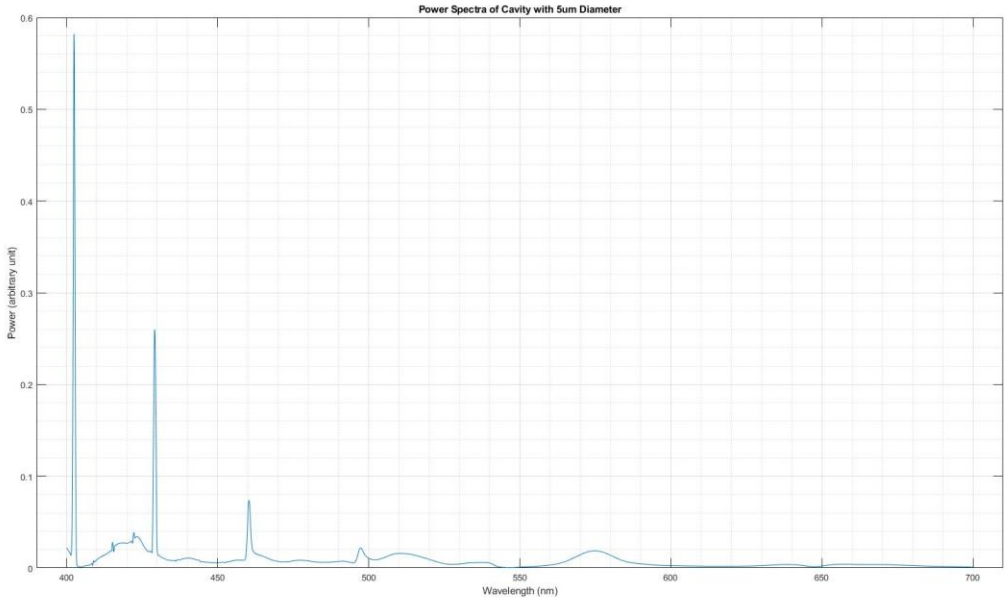

Figure 123: Power spectra of cavity with 5 μm diameter. Refractive index of the membrane in this model is 2.0.

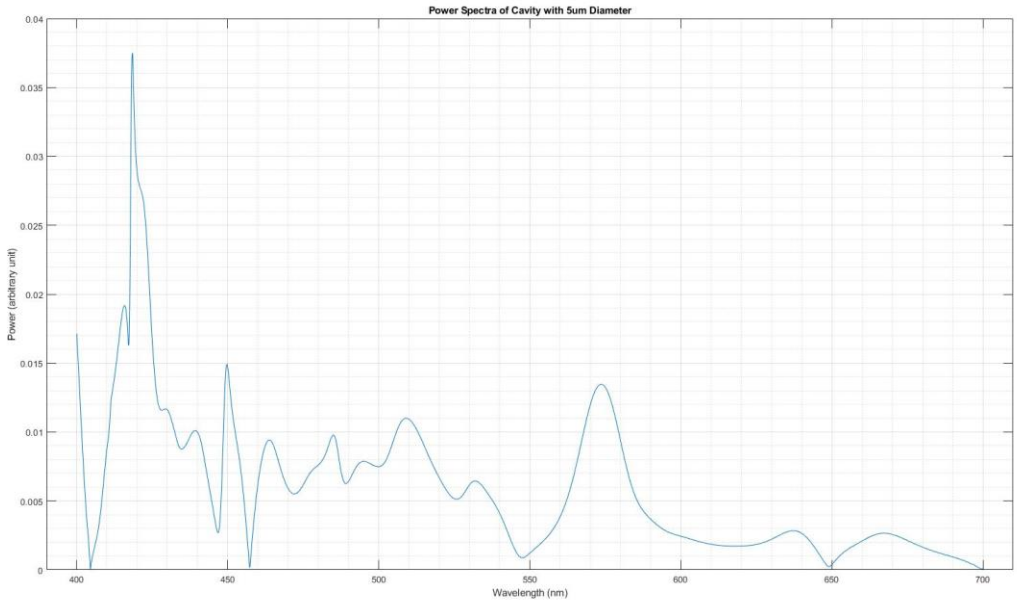

Figure 124: Power spectra of cavity with 5 μm diameter. Refractive index of the membrane in this model is 1.9.

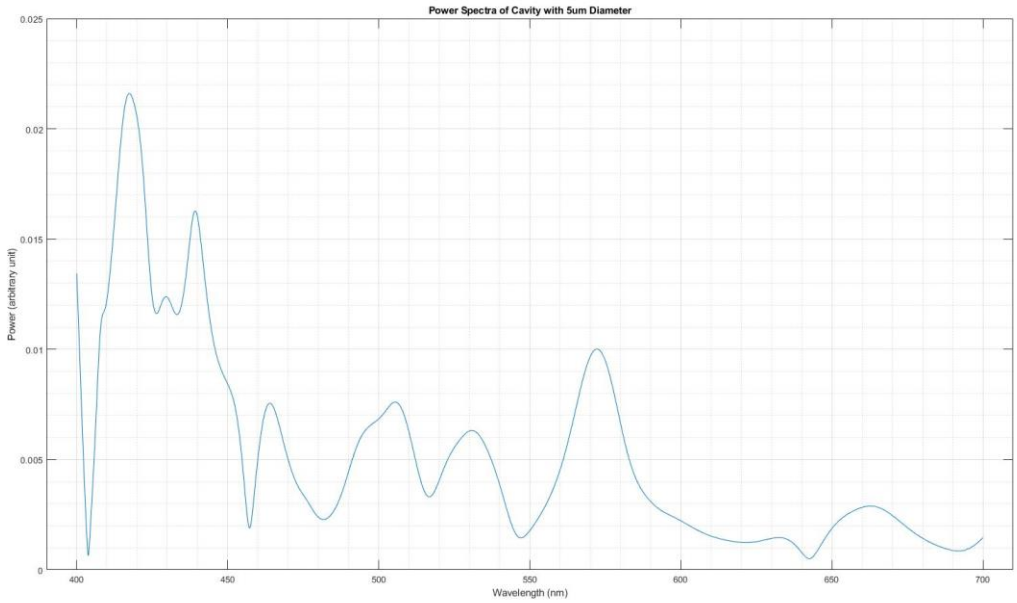

Figure 125: Power spectra of cavity with 5 μm diameter. Refractive index of the membrane in this model is 1.8.

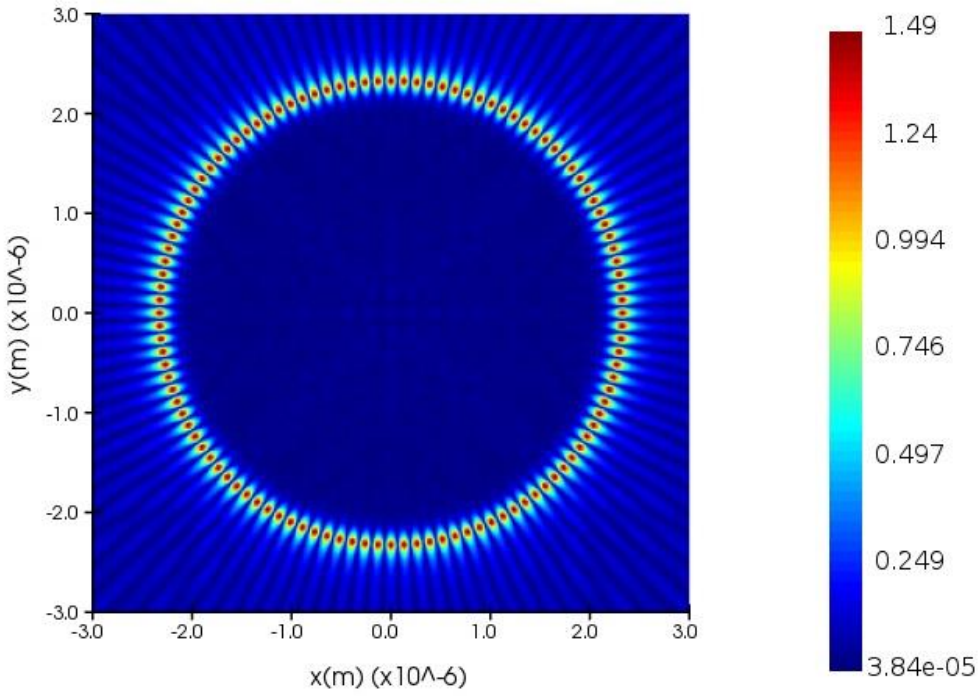

Figure 126: Heatmap of the resonance mode obtained from a toroidal cavity of 5 µm diameter. The resonance mode is at wavelength 402 nm.

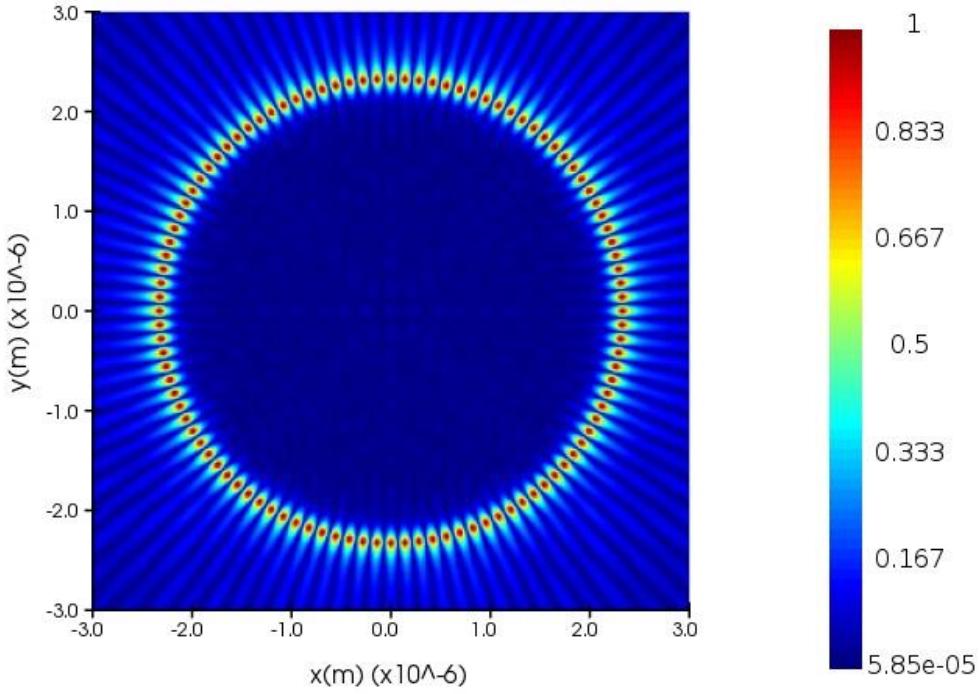

Figure 127: Heatmap of the resonance mode obtained from a toroidal cavity of 5 µm diameter. The resonance mode is at wavelength 429 nm.

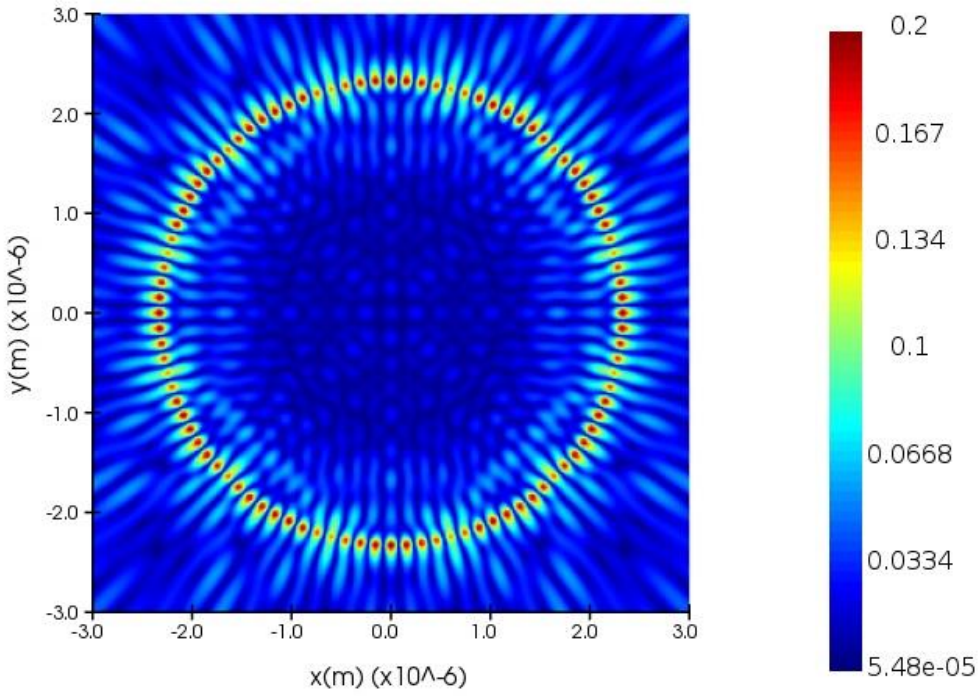

Figure 128: Heatmap of the resonance mode obtained from a toroidal cavity of 5 μm diameter. The resonance mode is at wavelength 460 nm.

7. For 4 μm diameter cavity:

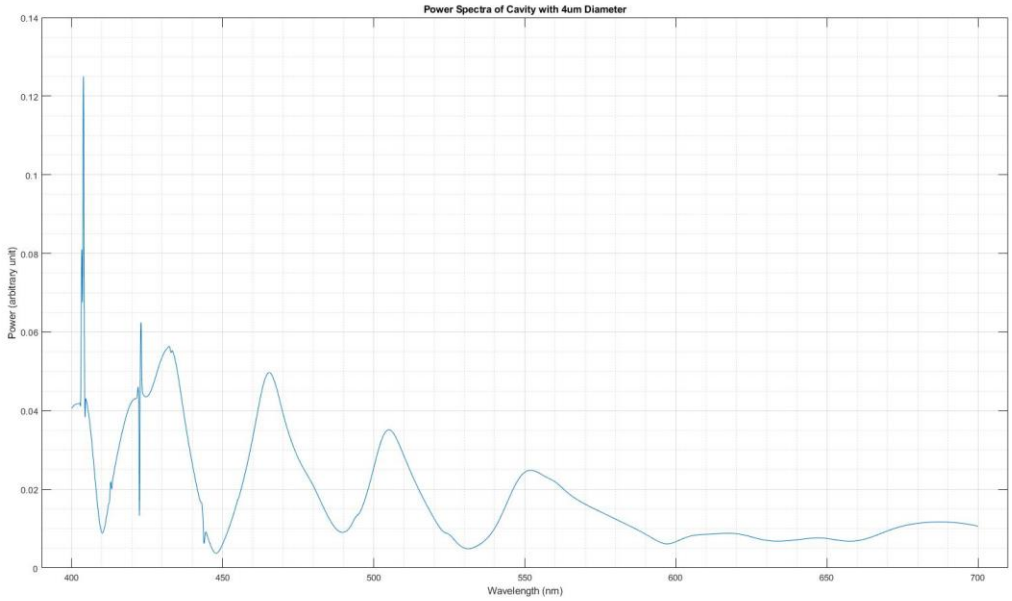

Figure 129: Power spectra of cavity with 4 μm diameter. Refractive index of the membrane in this model is 2.1.

8. For 3 μm diameter cavity:

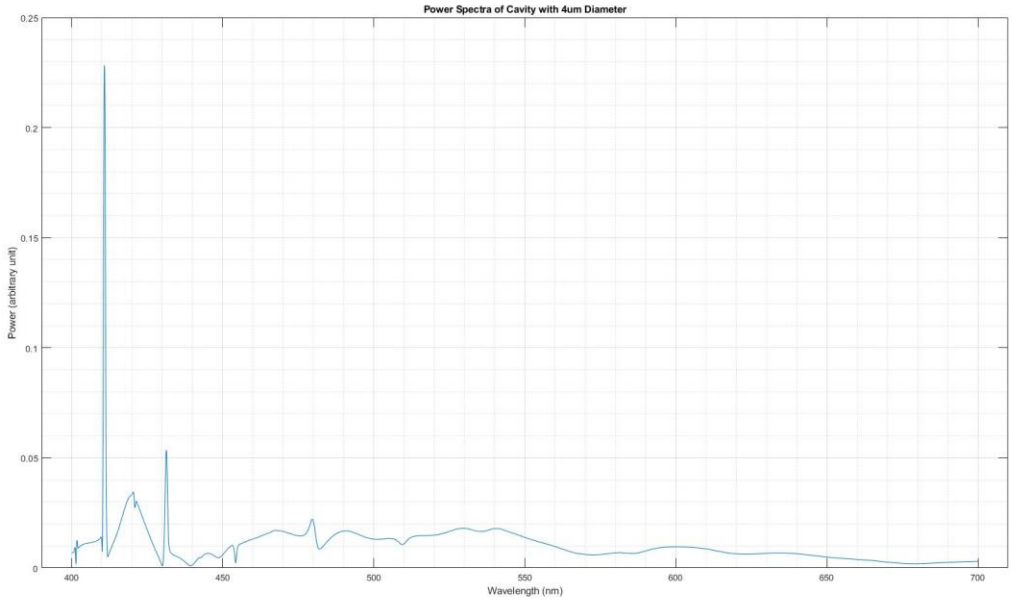

Figure 130: Power spectra of cavity with 3 μm diameter. Refractive index of the membrane in this model is 2.1.

9. For 2 μm diameter cavity:

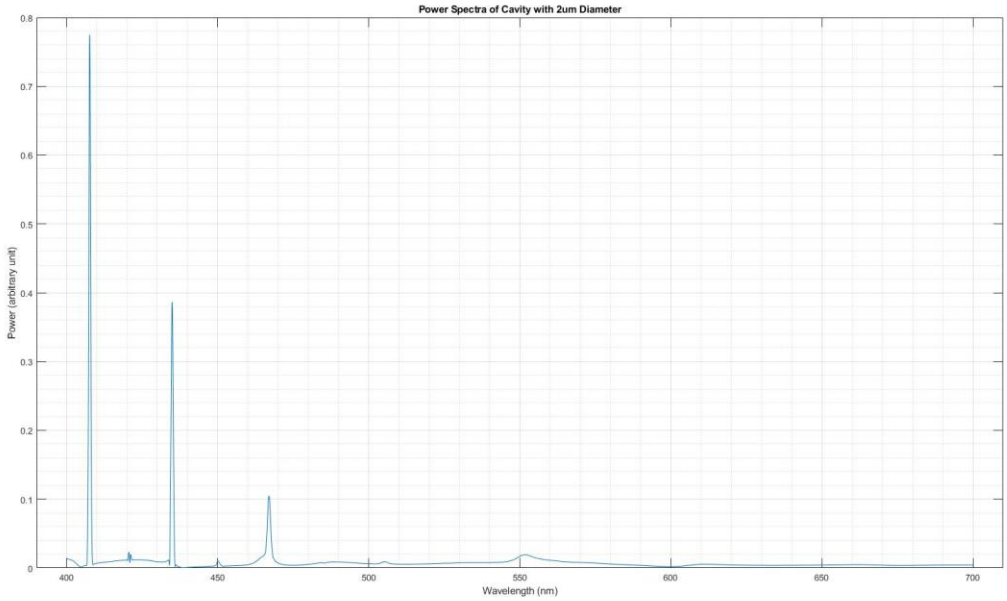

Figure 131: Power spectra of cavity with 2 μm diameter. Refractive index of the membrane in this model is 2.3.