

构建多模式全光谱暗场显微镜用于纳米单颗粒局域表面等离子共振实时动力学研究

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Multi-Mode Full Spectrum Dark Field Microscope for Single Nanoparticle Localized Surface Plasmon Resonance Dynamics Study

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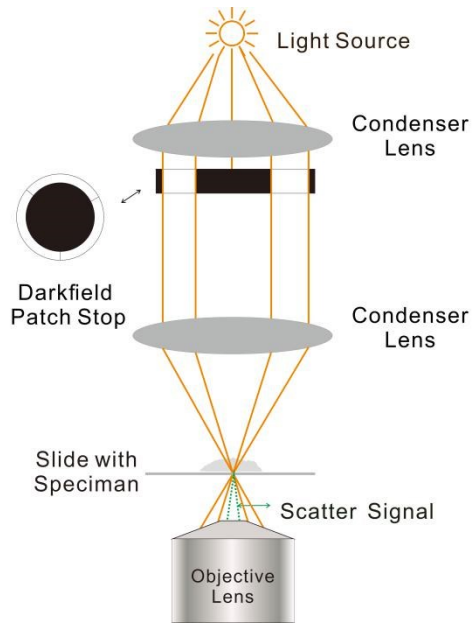


图 S1 商业化暗场显微镜成像原理示意图

Fig. S1 Schematic diagram of the Commercial DFM.

成像图像中的点信号信噪比计算公式¹:

$$R_{\text{SNR}} = 10 \lg \frac{I_{\text{max}} - B}{\sigma_n}$$

其中: I_{max} 中为电源信号强度, B 为图像背景均值, σ_n 为背景的标准差。

表 S1 50 nm 金颗粒暗场成像背景信号

Table S1 The dark field imaging background signal of 50 nm gold particles.

	laser	lamp
the Average Value of Background (B)	4.5726	7.3836
Standard Deviation (σ_n)	0.127	0.5317

表 S2 50 nm 金颗粒暗场成像点信号信噪比统计表

Table S2 Signal to noise ratio statistics of dark field imaging of 50 nm gold particles.

laser	lamp	SNR-laser	SNR-lamp
221	12	32.31508521	9.38636772
215	8	32.19298568	0.641959697
225	10	32.39461857	6.920374801
151	14	30.6181863	10.94955093
100	7	28.7586937	0
234	15	32.56841563	11.56083084
210	8	32.08854649	0.641959697
187	17	31.57286348	12.57345859
128	7	29.8760786	0
105	8	28.98048498	0.641959697
207	13	32.02465576	10.2379137
91	7	28.32847727	0
224	7	32.37487136	0
140	7	30.2790282	0
139	8	30.24684078	0.641959697
224	38	32.37487136	17.60287463
208	17	32.04605727	12.57345859
208	17	32.04605727	12.57345859
218	18	32.25446453	13.00310613
220	8	32.29497219	0.641959697
232	19	32.53039065	13.39404898
217	7	32.23406813	0
221	7	32.31508521	0
216	8	32.21357548	0.641959697
154	7	30.70626519	0
226	15	32.4142764	11.56083084
214	9	32.1722978	4.828821815
222	7	32.33510552	0
224	7	32.37487136	0
217	12	32.23406813	9.38636772

References

- (1) Barshalom, Y. *IEEE Transactions on Automatic Control* **2003**, *23*, 618. doi:10.1109/TAC.1978.1101790