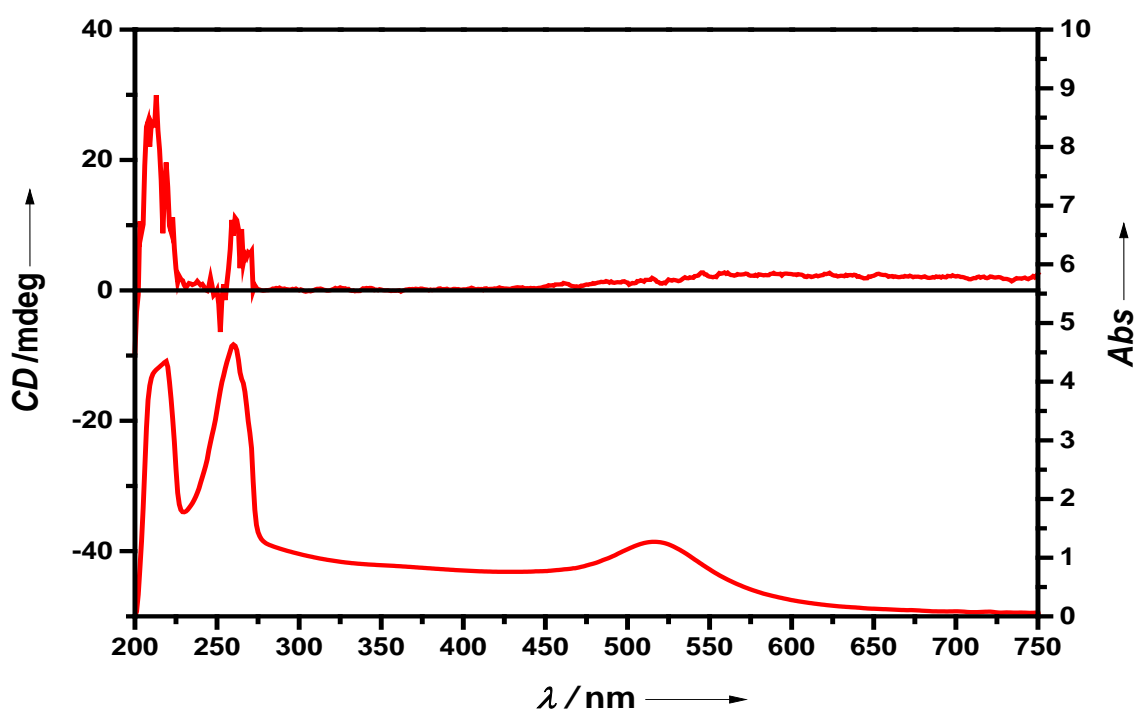


## The preparation of AuNPs in THF

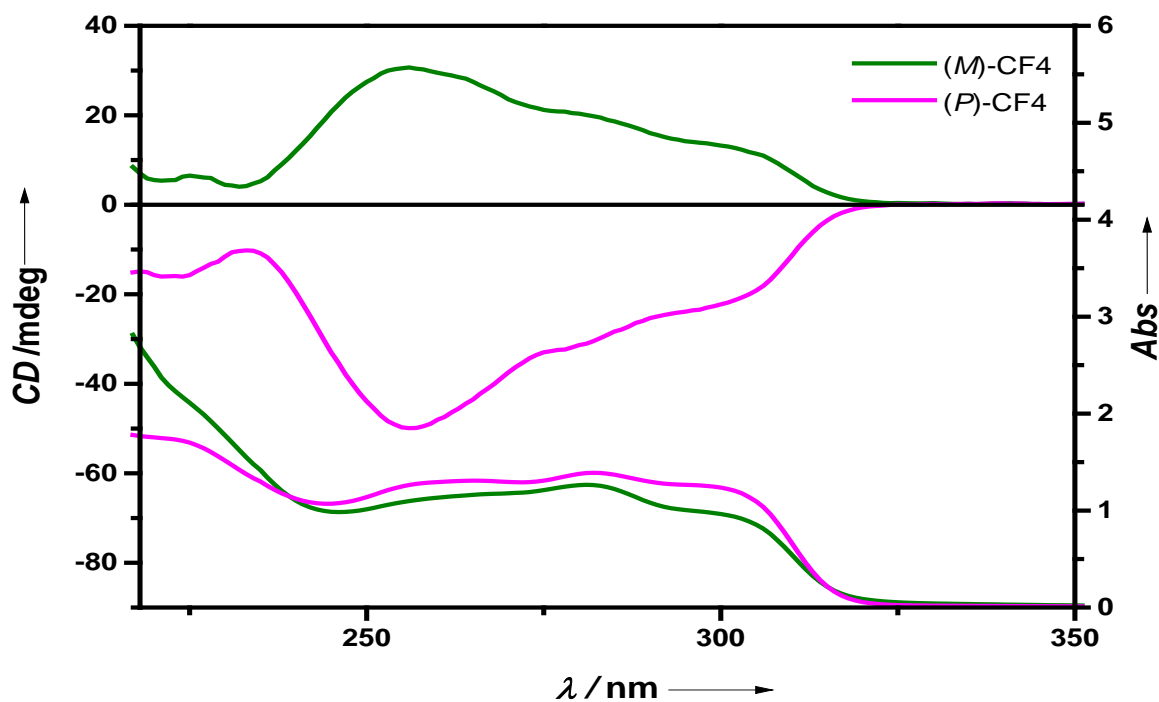
The toluene solution of oleylamine stabilized AuNPs (10-13 nm) was washed twice. The procedure involved addition of 0.5 mL of the mentioned solution and 1 mL of EtOH into an ependorf (mostly used for aggregation of AuNPs in toluene). After addition, metallic purple colour was observed which is typical for the aggregated NPs. Subsequently, centrifugation was performed (3min, 6500rpm). The supernatant was removed and 0.5 mL of THF and 1mL of EtOH was added. The centrifugation conditions were set differently (8 min, 6500 rpm). After addition of 0.5 mL of THF, UV and CD spectra of the resulting solution (red) were recorded.



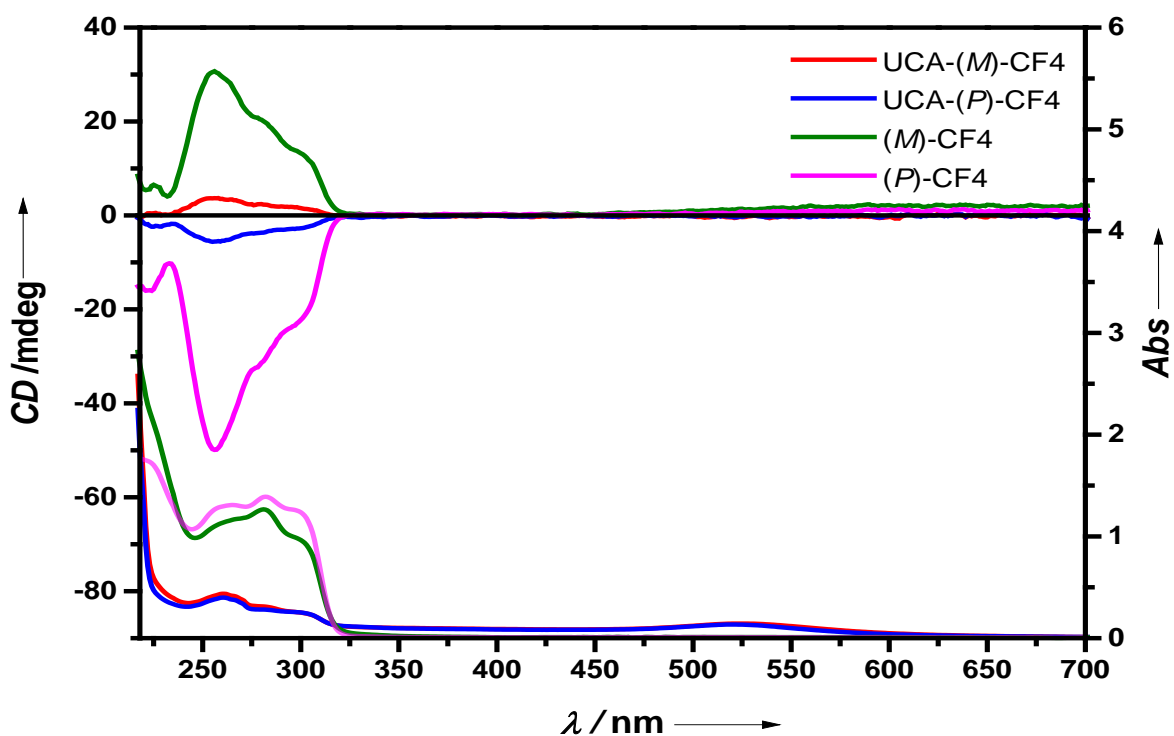
**Figure 1:** ECD (top) and UV/Vis (bottom) spectra of AuNPs (2x washed) in THF (1mm cuvette). The calculated concentration of AuNPs:  $3.3 \times 10^{-3}$  M ( $\epsilon_{400} = 2400$  cm/L).

## The formation of Up-standing Chiral Architectures

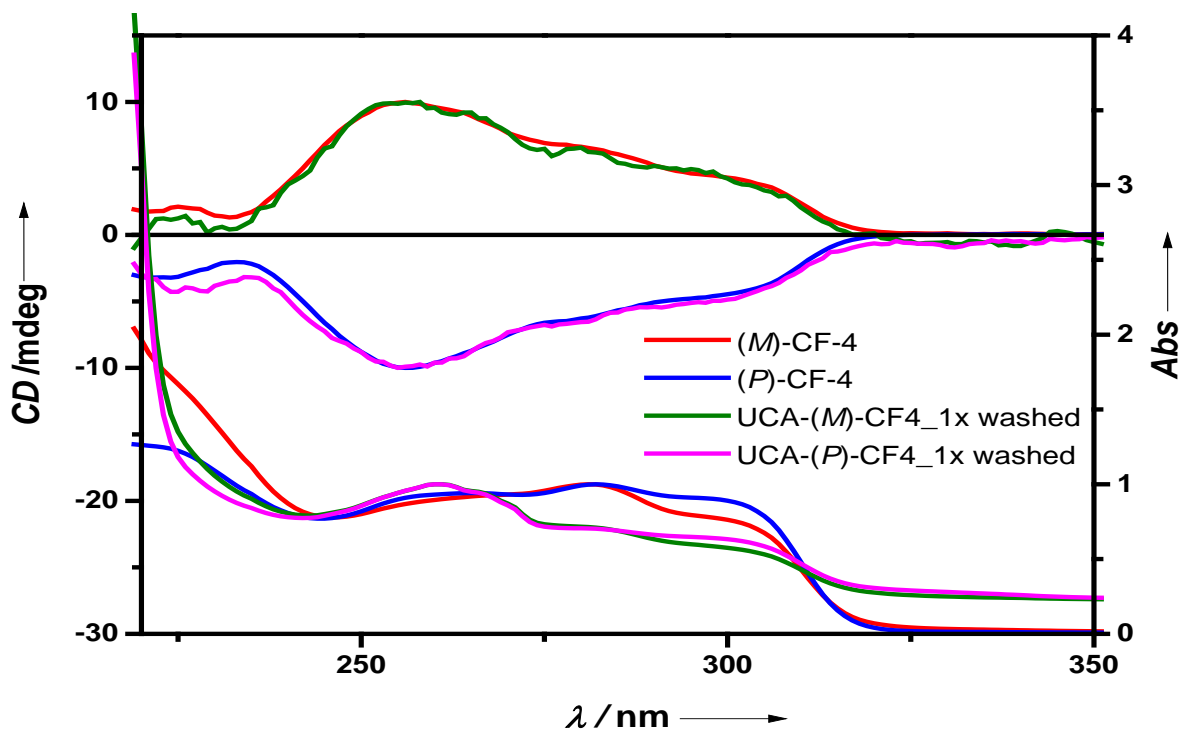
The formation of Up-standing Chiral Architectures (UCA-(*P*)-CF-4 and UCA-(*M*)-CF-4) involved addition of 1 mL of  $3.3 \times 10^{-3}$  M THF solution of AuNPs to the 3 mL of THF solution of the corresponding chiral frameworks dropwise. The resulting mixture was stirred for 16 hours at room temperature. Finally, the solution of UCAs was washed once (0.5mL for each ependorf and centrifugation of supernatant, addition of 0.5mL of THF) in order to remove the CFs and oleylamine from solution. The colour observed for each enantiomer of UCAs was red.



**Figure 2:** ECD (top) and UV/Vis (bottom) spectra of AuNPs (2x washed) in THF (1mm cuvette). The calculated concentration of AuNPs:  $3.3 \times 10^{-3}$  M ( $\epsilon_{400} = 2400$  cm/L). Concentrations: (*P*)-CF-4 ( $4.9 \times 10^{-4}$  M) and (*M*)-CF-4 ( $4.0 \times 10^{-4}$  M). Calculated from  $\epsilon_{400} = 27547.6$  cm/L.

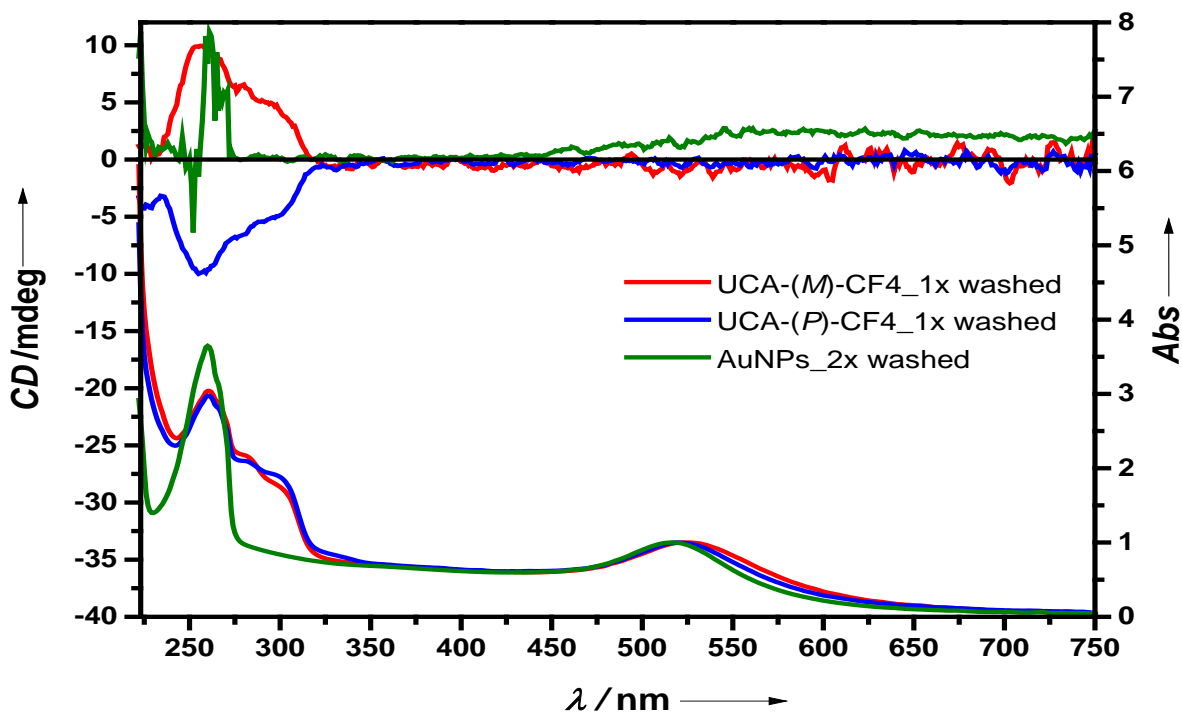


**Figure 3:** Comparison of both enantiomers of UCA-4 (1x washed) with CF-4 (Non-normalized data).



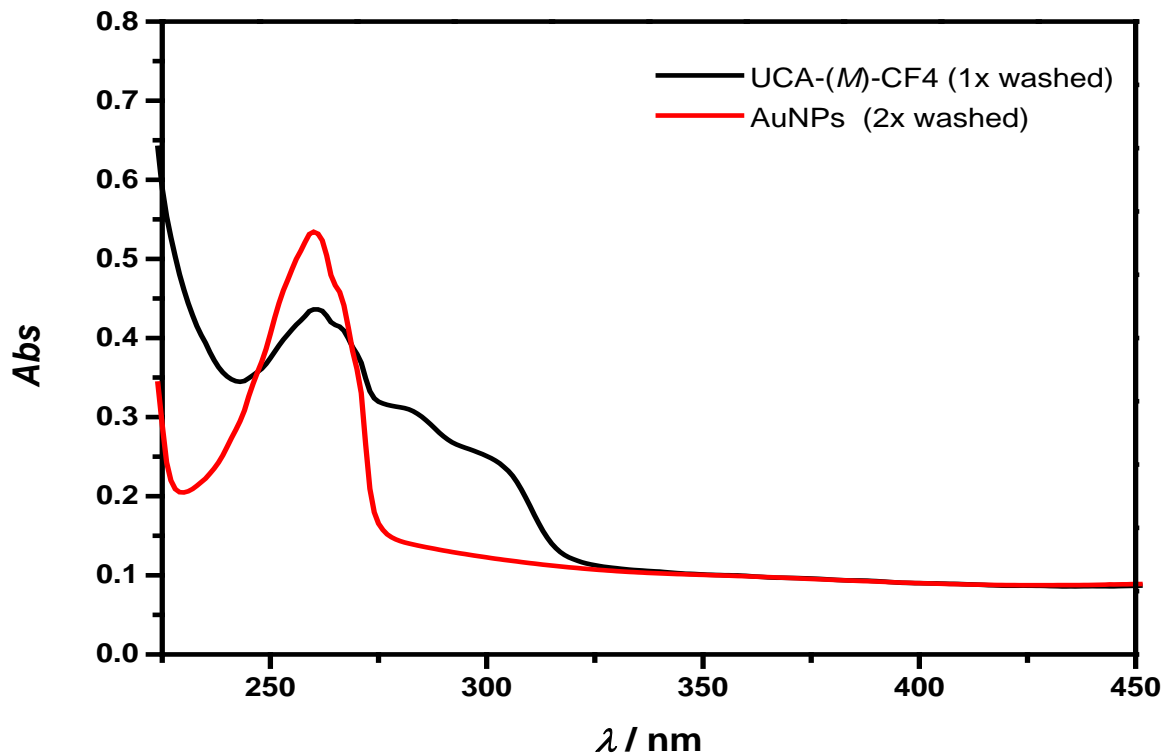
**Figure 3:** Comparison of both enantiomers of UCA-4 (1x washed) with CF-4 (Normalized data, absorption max was set to 1 where CD max set to 10).

Considering the figure 4,  $\lambda_{\max} \equiv 260$  nm was likely the contribution from oleylamine in solution. Additionally no significant change was observed in CD spectra where slight shift to red was observed in absorption spectra.

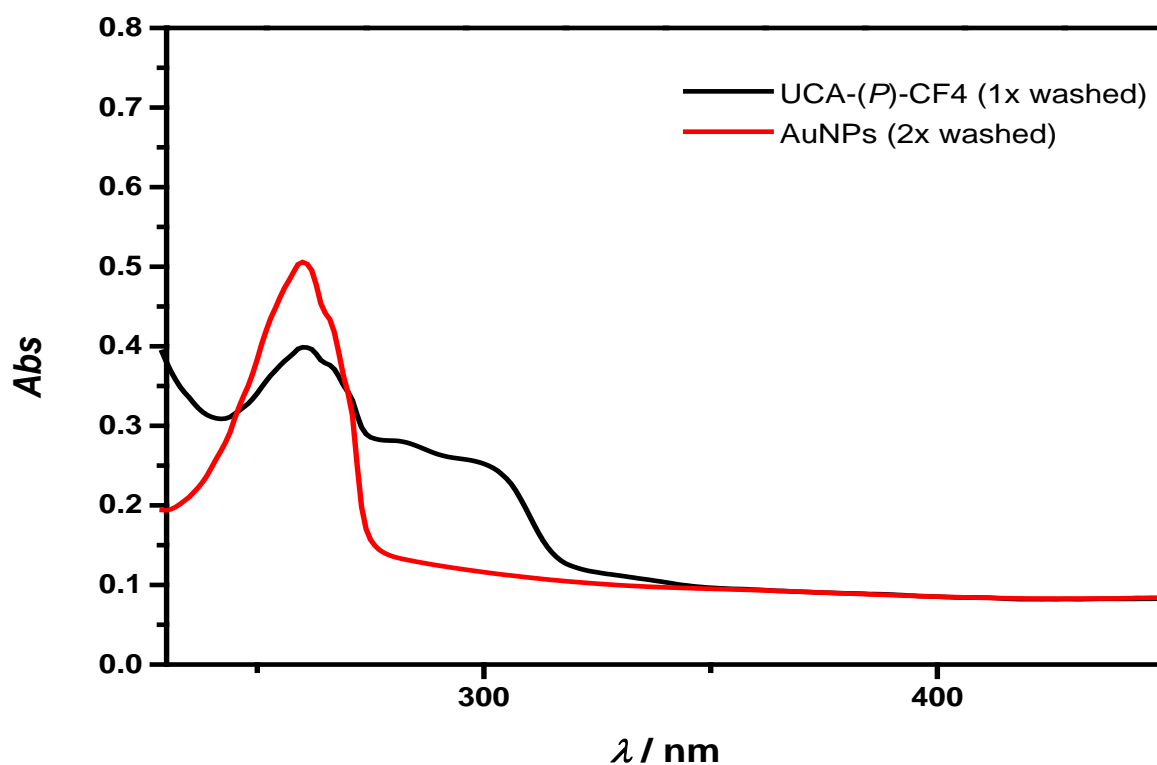


**Figure 4:** Comparison of both enantiomers of UCA-4 (1x washed) with AuNPs (2x washed) in THF (Normalized data, plasmon max was set to 1 Abs where CD max was set to 10 for both enantiomers of UCAs).

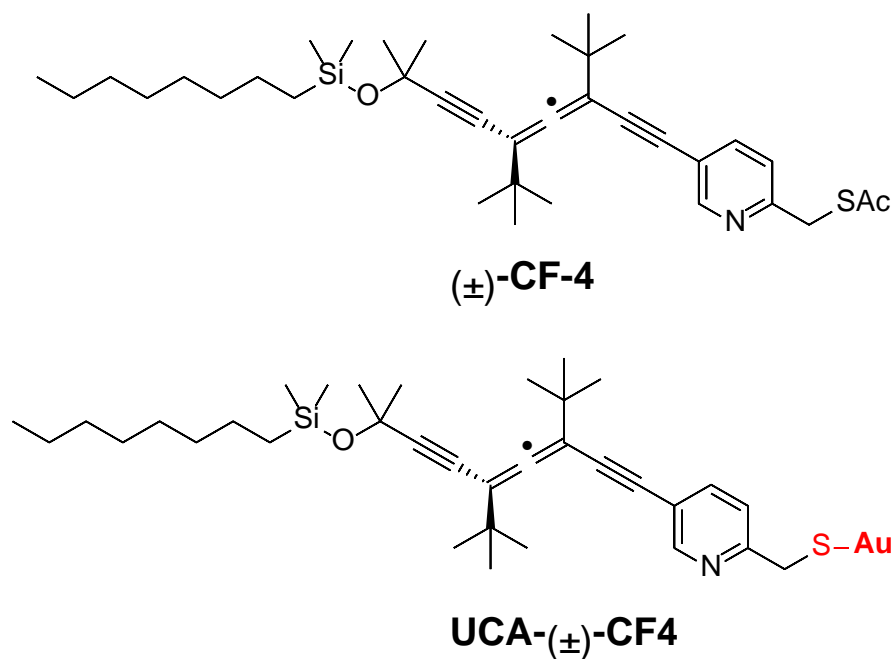
Regarding to Figure 4, the shifts were observed for both enantiomers of UCA-4 (UCA-(*P*)-CF4  $\lambda_{\max}$  = 519 nm and UCA-(*M*)-CF4  $\lambda_{\max}$  = 524 nm) compared to AuNPs ( $\lambda_{\max}$  = 516 nm). Consequently, the formation of UCAs was proven. (TEM results are pending).



**Figure 5:** UV/Vis spectra of AuNPs (2x washed) and UCA-(*M*)-CF4 (1x washed) after normalization. The calculated concentration of the absorption from (*M*)-CF4 or UCA-(*M*)-CF4 is 0.13 ( $5.3 \times 10^{-5}$  M).



**Figure 6:** UV/Vis spectra of AuNPs (2x washed) and UCA-(*P*)-CF4 (1x washed) after normalization. The calculated concentration of the absorption from (*P*)-CF4 or UCA-(*P*)-CF4 is 0.14 ( $5.6 \times 10^{-5}$  M).



**Figure 7:** Structures of CF4 and UCA4.