

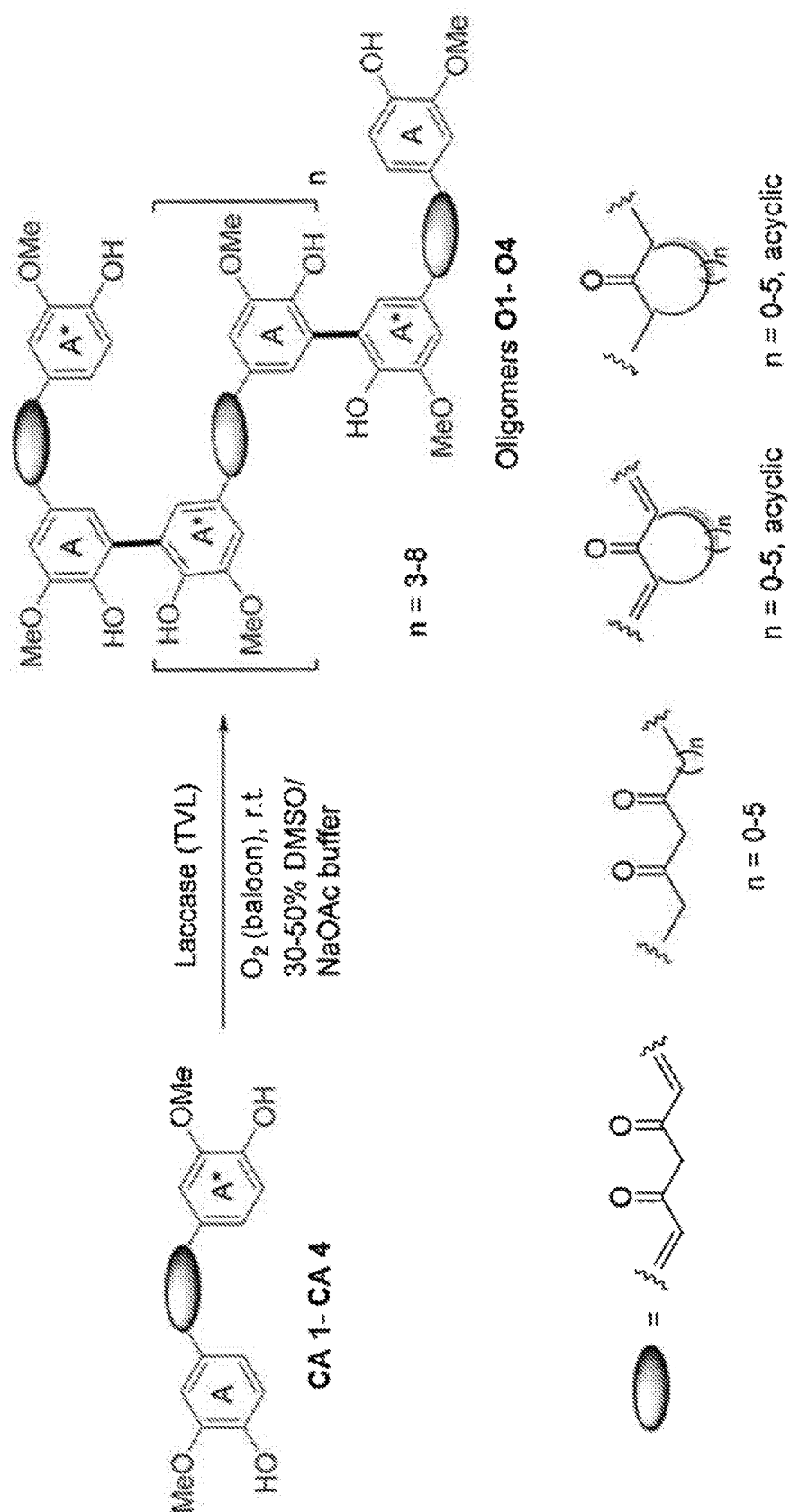


Figure 1



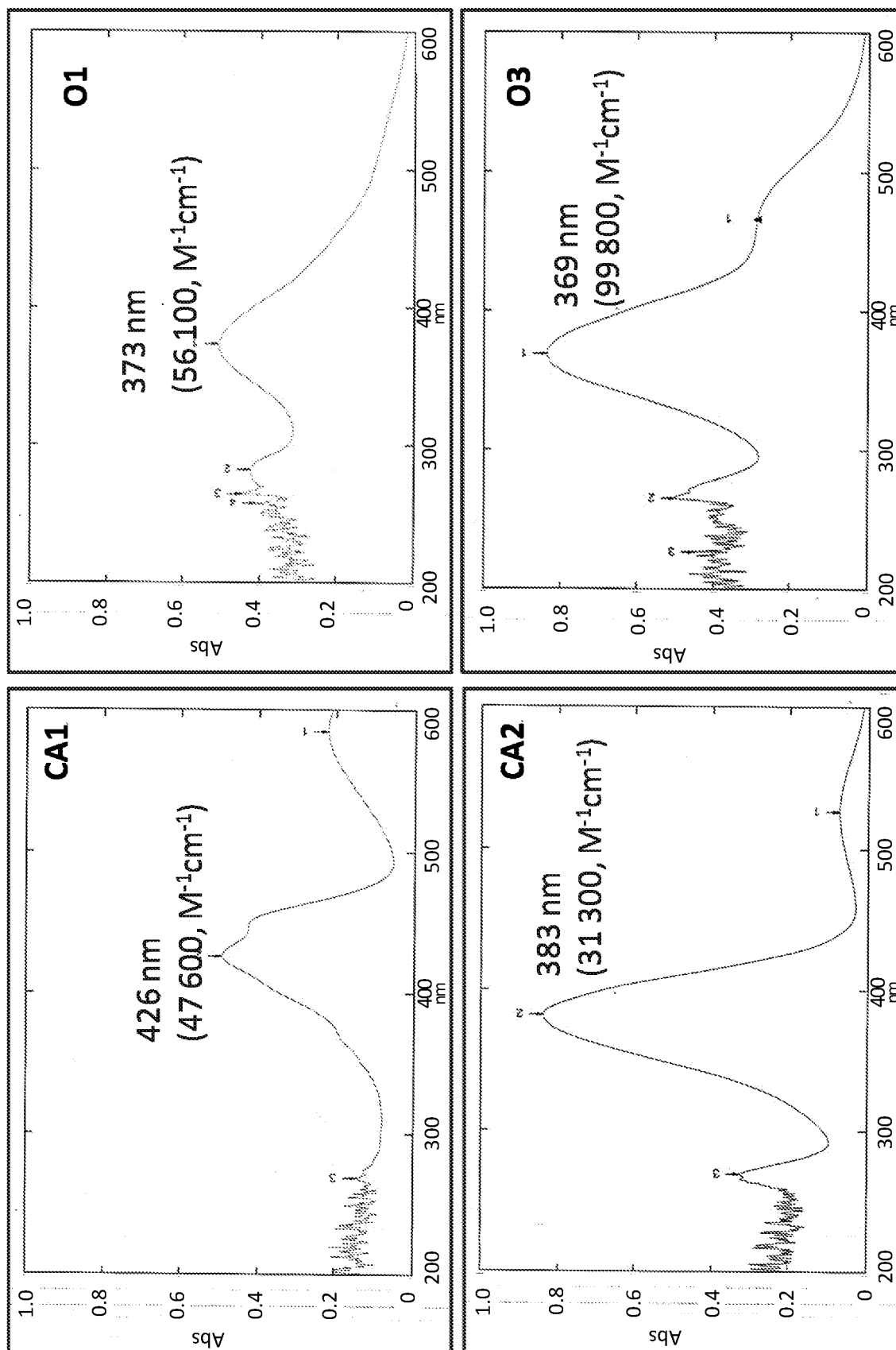
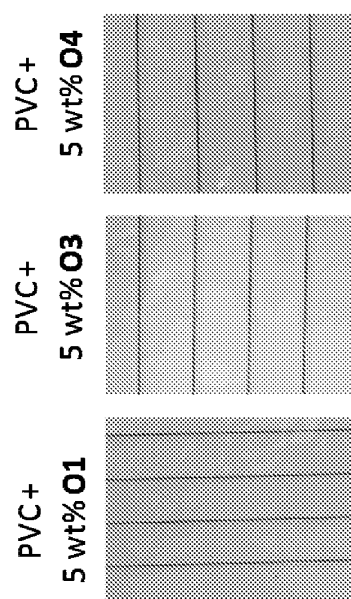
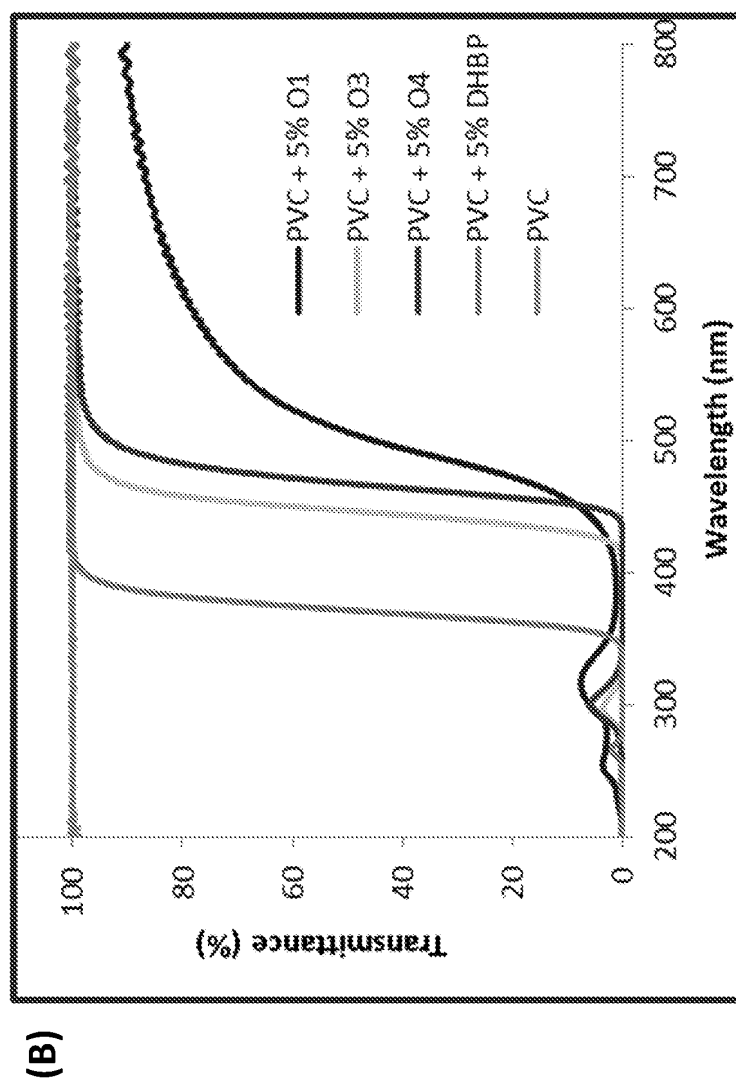


Figure 3

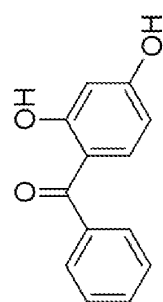


(A)

Oligomers  
**O1-O4** + PVC  $\xrightarrow[\text{method}]{\text{Solvent casting}}$



(B)



2,4-dihydroxy  
benzophenone (**DHBP**)

(Uvinul 3000 - BASF)

Figure 4

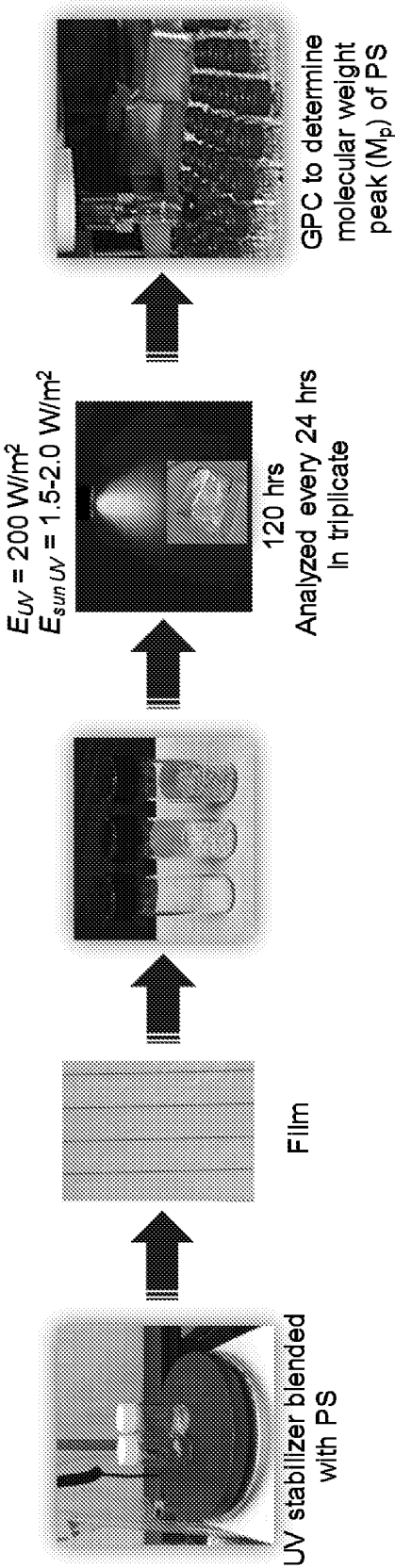


Figure 5

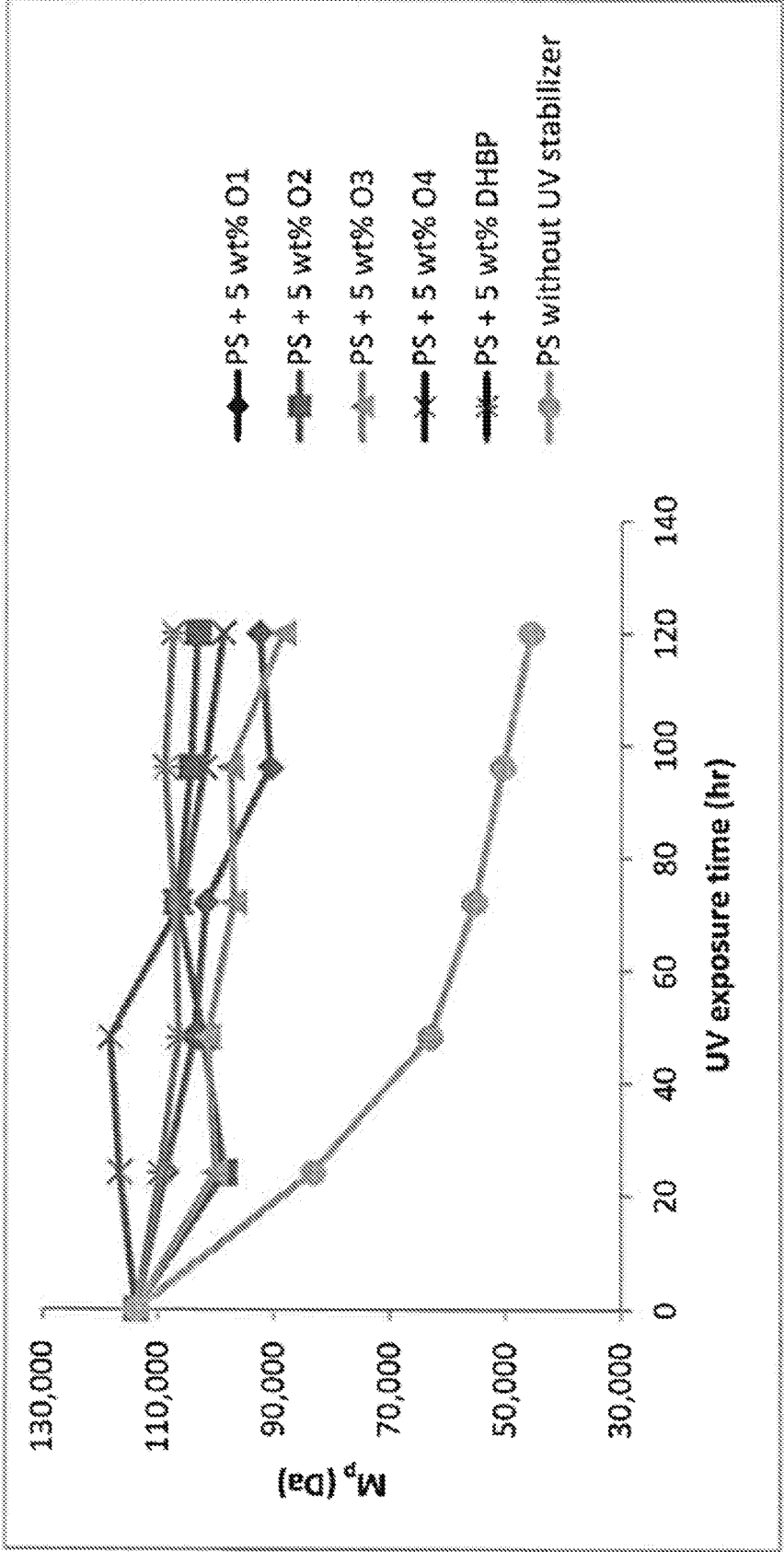
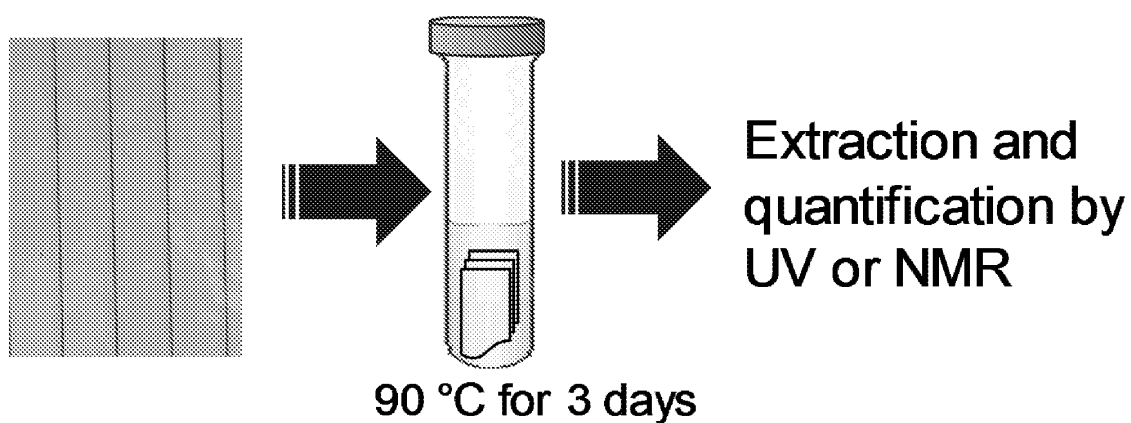
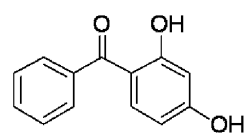


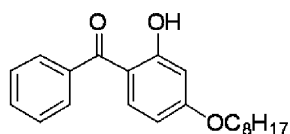
Figure 6



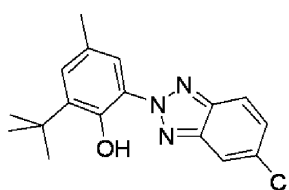
500 mg UV stabilizer embedded  
PS in 10 mL of food simulant



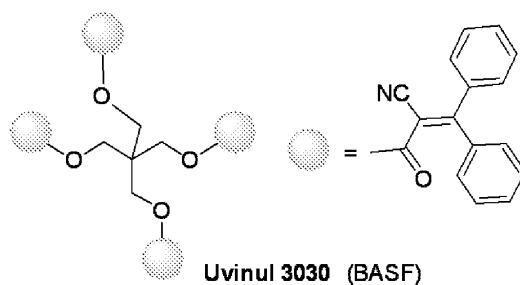
**DHBP**  
Uvinul 3000 (BASF)



**DHOBP**  
Uvinul 3008 (BASF)



**BTAC**



**Figure 7**

Leaching studies for **O1** embedded PS film

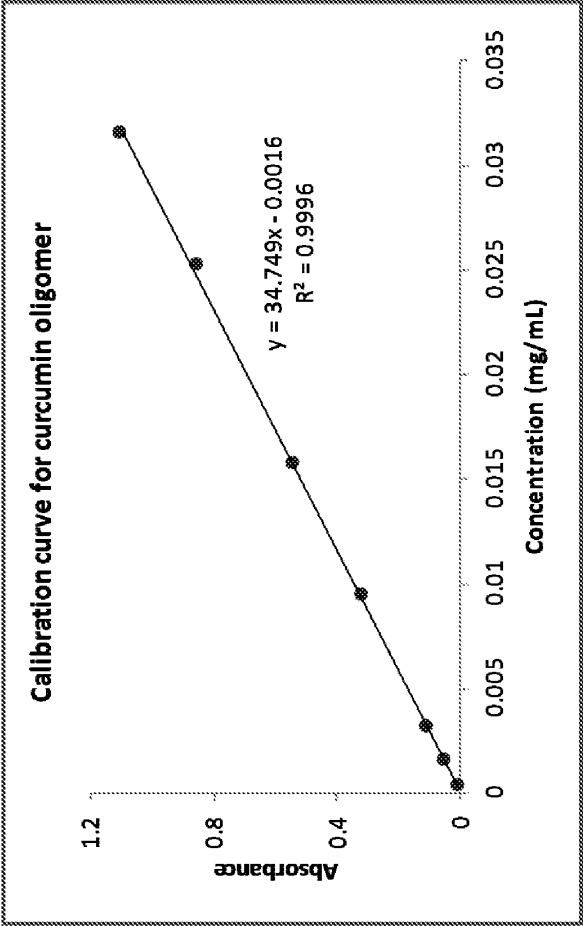
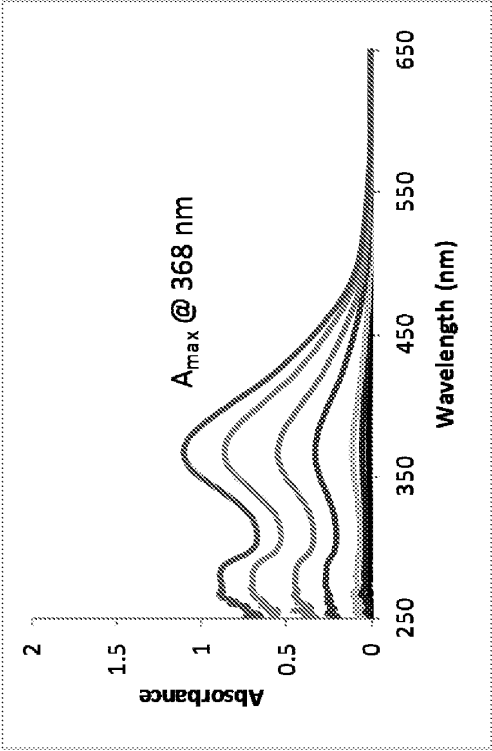
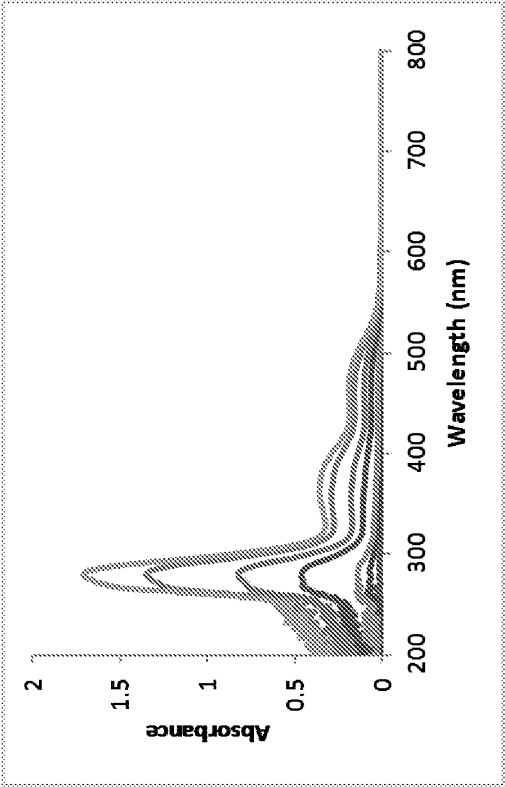
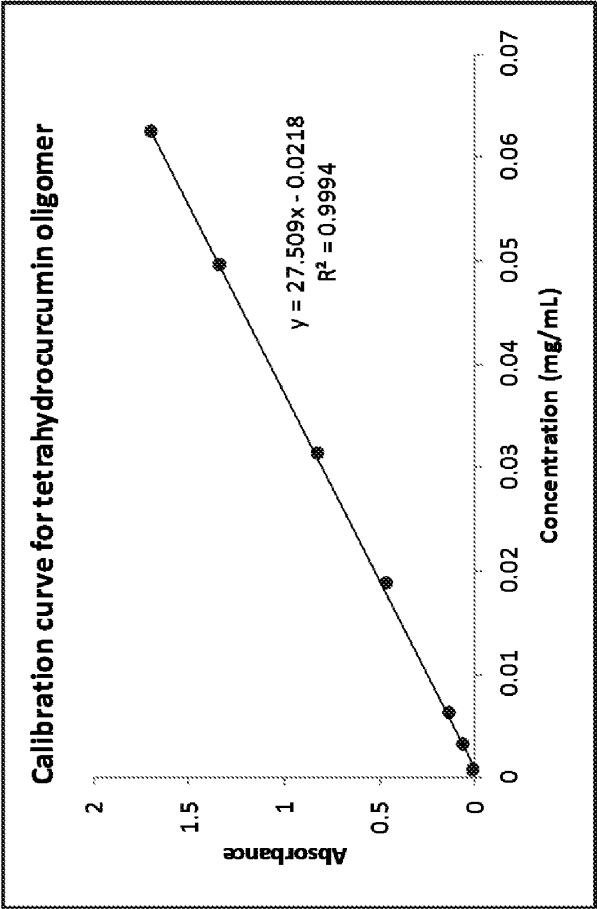


Figure 8



| Entry | % leaching in:   |          |         |          |
|-------|------------------|----------|---------|----------|
|       | H <sub>2</sub> O | 15% EtOH | 3% AcOH | 95% EtOH |
| 1     | 0.1              | 0.2      | 0.0     | 20.1     |
| 2     | 0.0              | 0.2      | 0.0     | 15.2     |
| 3     | 0.0              | 0.2      | 0.0     | 15.8     |
| avg   | 0.0              | 0.2      | 0.0     | 17.0     |



| Entry | % leaching in:   |          |         |          |
|-------|------------------|----------|---------|----------|
|       | H <sub>2</sub> O | 15% EtOH | 3% AcOH | 95% EtOH |
| 1     | 0.2%             | 0.3%     | 0.2%    | 4.8%     |
| 2     | 0.3%             | 0.6%     | 0.2%    | 8.4%     |
| 3     | 0.4%             | 0.6%     | 0.3%    | 8.7%     |
| avg   | 0.3%             | 0.5%     | 0.2%    | 7.3%     |

Figure 9

Leaching studies for O3 embedded PS film

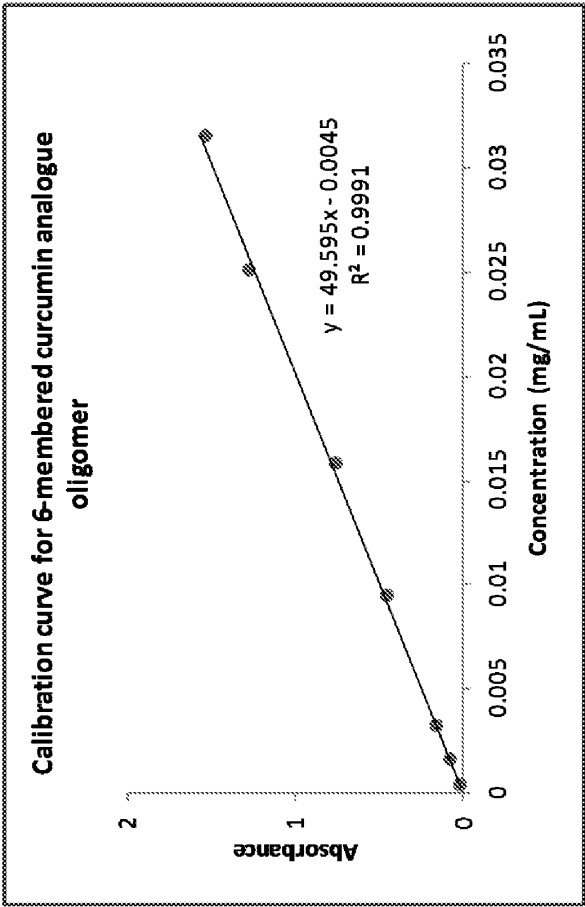
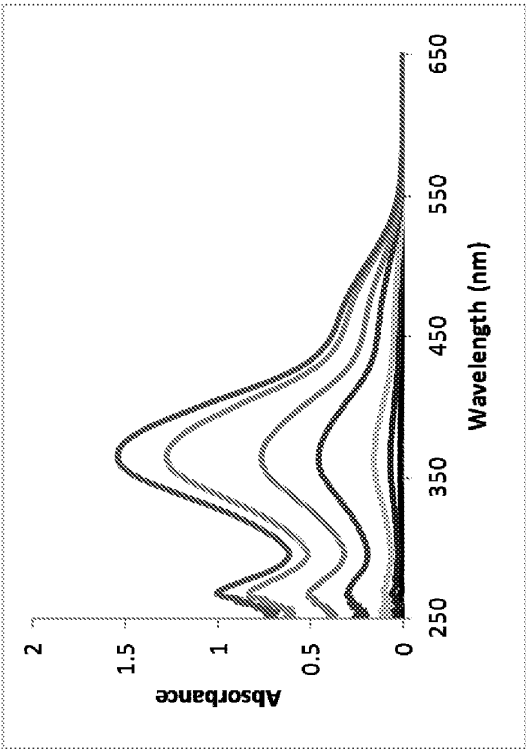


Figure 10



| Entry | % leaching in:   |          |         |          |
|-------|------------------|----------|---------|----------|
|       | H <sub>2</sub> O | 15% EtOH | 3% AcOH | 95% EtOH |
| 1     | 0.0              | 0.1      | 0.0     | 10.6     |
| 2     | 0.0              | 0.2      | 0.0     | 10.8     |
| 3     | 0.0              | 0.2      | 0.0     | 12.7     |
| avg   | 0.0              | 0.2      | 0.0     | 11.4     |

# Leaching studies for O4 embedded PS film

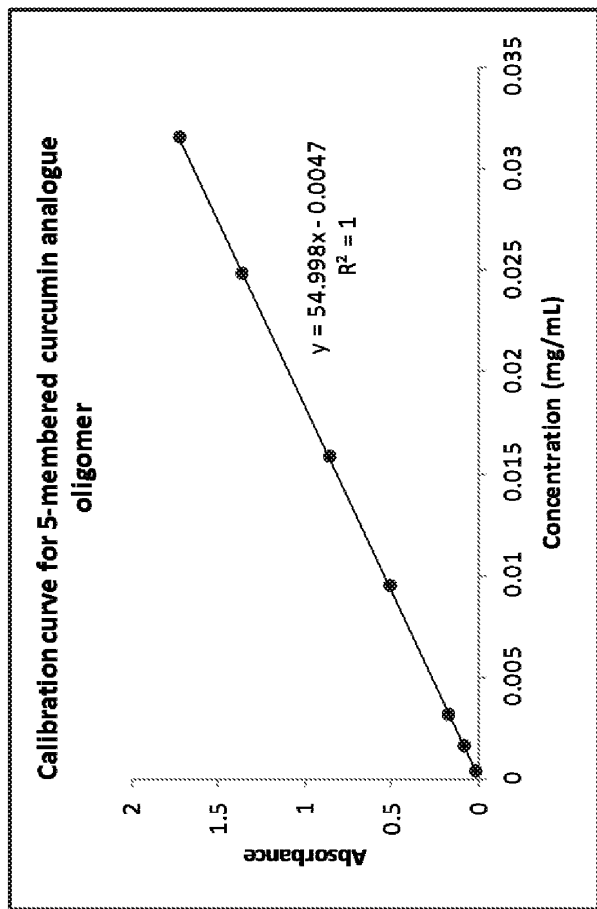
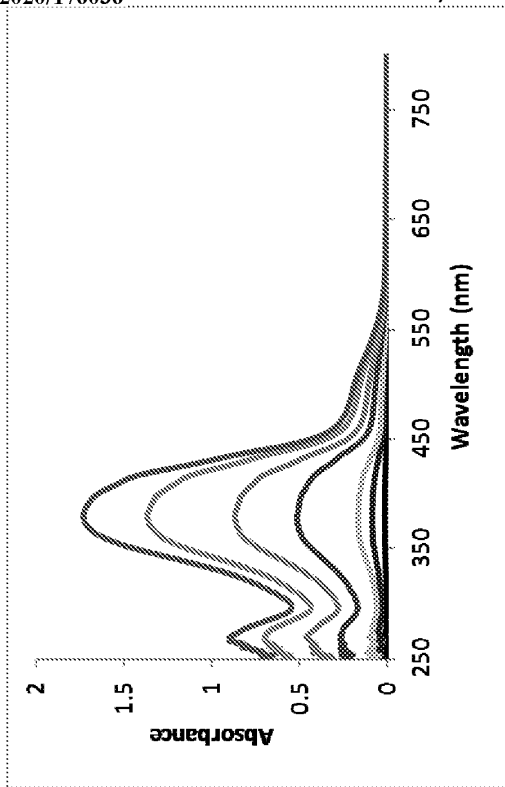


Figure 11



| Entry | % leaching in:   |          |         |          |
|-------|------------------|----------|---------|----------|
|       | H <sub>2</sub> O | 15% EtOH | 3% AcOH | 95% EtOH |
| 1     | 0.0%             | 0.1%     | 0.0%    | 7.9%     |
| 2     | 0.0%             | 0.1%     | 0.0%    | 6.5%     |
| 3     | 0.0%             | 0.1%     | 0.0%    | 8.7%     |
| avg   | 0.0%             | 0.1%     | 0.0%    | 7.7%     |