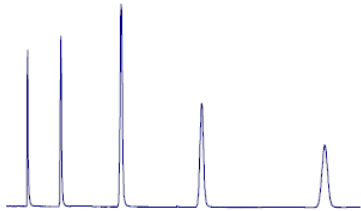
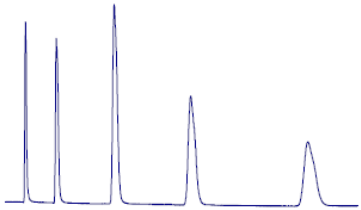




## عیب یابی در HPLC

### مشکل شماره ۱۰: پهن شدگی پیک‌ها

Problem	Probable cause	Troubleshooting
<b>Problem No. 10: Broad peaks</b>		
Regular: 	<ol style="list-style-type: none"><li>1. Mobile phase composition changed.</li><li>2. Mobile phase flow rate too low. Not in the optimum of van Deemter curve.</li><li>3. Leak, especially between column and detector. Peaks will be broad with lower peak height!</li><li>4. Detector settings incorrect.</li><li>5. Extra-column effects:</li></ol>	<ol style="list-style-type: none"><li>1. Prepare new mobile phase.</li><li>2. Adjust flow rate.</li><li>3. Check system for loose fittings. Check pump for leaks, salt build-up and unusual noises. Change pump seals if necessary.</li><li>4. Adjust settings</li><li>5. Comments:</li></ol>
Problem: 	<ol style="list-style-type: none"><li>a Column overloaded. Peaks will be broad with high peak height.</li><li>b Detector response time or cell volume too large.</li><li>c Tubing between column and detector too long or ID too large.</li><li>d Response time of the software too high.</li></ol> <ol style="list-style-type: none"><li>6. Buffer concentration too low. Peaks will be broad without tailing etc.</li><li>7. Guard column contaminated.</li><li>8. Column contaminated/worn out.</li><li>9. Void at column inlet.</li><li>10. Peak represents two or more poorly resolved compounds.</li><li>11. Column temperature too low.</li></ol>	<ol style="list-style-type: none"><li>a Inject smaller volume or dilutions of sample (e.g. 1:10, 1:100).</li><li>b Reduce response time or use smaller cell.</li><li>c Use as short a piece of 0.007 – 0.010" ID tubing as practical.</li><li>d Reduce response time.</li></ol> <ol style="list-style-type: none"><li>6. Increase concentration.</li><li>7. Replace guard column.</li><li>8. Replace column with new one of same type. If new column provides symmetrical peaks, flush old column and retest.</li><li>9. Replace column.</li><li>10. Change column type to improve separation.</li><li>11. Increase temperature. Do not exceed recommended temperature (45 °C for Eurospher and 90 °C for Eurokat).</li></ol>