

## **SOME INDUSTRIAL MATHEMATICS PROBLEMS WITH A SMALL PARAMETER**

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We consider the mathematical modelling of a number of problems arising from industrial applications and develop approximate solutions while retaining the essential features of interest. The models considered all comprise systems of differential equations and include industrial coating problems on flat and curved substrates, "smart" bandages, waves in bubbly liquids. The equations are solved using a variety of asymptotic (matched asymptotic expansions, WKB) and numerical techniques.