Preface

This book brings together a series of lectures presented to the Summer School "Multicouches Métalliques" held in Aussois (France) in September 1989. The courses were designed to provide an in-depth review of the basic physics of the artificially multilayered metal-metal structures and the latest progress that has been made in the manufacturing, structural characterization, physical investigation and modeling of these novel materials.

Among the various topics covered are electronic and atomic transport, elastic and micromechanical behaviour, magnetic and superconducting properties. Emphasis is laid on the description and understanding of these properties on account of interlayer multiplicity, low dimensionality and nanometer periodicity. The course also offers insight into growth control, monolayer formation and related thermodynamics, together with a presentation of the most recent deposition and characterization techniques.

Hopefully this book will serve both as a stepping stone for those students interested in getting involved with research in this rapidly developing area and a guide for specialists in industry and the academic community.

We would like to thank both the lecturers and participants for having made the school a lively and enriching meeting.

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A. Chamberod
J. Hillairet