

# From Self-Assembled Monolayers to Polymer Brushes

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LITERATURE

INTRODUCTION

Organization of Molecules - Supramolecular Aggregates

Self - Assembly (Definition)

PREPARATION OF ULTRATHIN FILMS ON SOLIDS

LANGMUIR-BLODGETT FILMS

SELF-ASSEMBLED MONOLAYERS

CHARACTERIZATION TECHNIQUES OF ULTRATHIN FILMS

Ellipsometry

Wetting Experiments - Surface free energy

FTIR Spectroscopy (ATR, ER)

Scanning Probe Microscopy Techniques

SAMs OF THIOLS

PREPARATION

Chemistry

Physics

Adsorption Kinetics

PROPERTIES OF SAMs

Morphology

Film Stability

VARIOUS TYPES OF SAMs

Variation of the End Groups / Substrates

Variation of the Head Groups / Surface Engineering

Variation of the Mesogene / Impact upon the Film Formation and Long Term Stability

Functionalized n-Alkylthiols

Functionalized Biphenylthiols - A new class of SAMs

MIXED SAMs - SURFACE ENGINEERING

Homogenous Mixed SAMs

2D - STRUCTURING

Microcontact Printing

SPM Patterning

Lithographic Patterning

Chemical Lithography

2D - GRADIENTS

SAMs OF SILANES

Chemistry

Morphology

Stability

Multilayers

POLYMER BRUSHES

Properties

Preparation : 'Grafting onto'

Preparation : 'Grafting from'

Amphiphilic Polymer Brush Systems

Patterned Polymer Brushes

Gradient Polymer Brushes