## MICROLENS ARRAYS

Editor: M C Hutley

Proceedings of a one-day seminar organised by the National Physical Laboratory in conjunction with The Institute of Physics and the Royal Photographic Society 1 May 1991 Teddington UK

Co-sponsored by the Institution of Electrical Engineers

Physikalische Bibliothek

Fachbereich 5 Technische Hechschule Darmstadt Hochschuletraße 4

D - 6100 Darmstadt

1/4011

IOP Short Meetings Series No 30 Institute of Physics

## **Contents**

## Preface

- 1 The generation of lens arrays using photothermal techniques N F Borrelli
- 17 Planar microlens by ion-exchange K Nishizawa and M Oikawa
- 23 The manufacture of microlenses by melting photoresist D Daly, R F Stevens, M C Hutley and N Davies
- 35 The computer controlled generation of microlens arrays K Bird and T J Hall
- 41 The fabrication of holographic lenslet arrays in dichromated gelatin
  I R Redmond, B A Robertson and A C Walker
- 53 Optimization of holographic lenslets and their measurement O Falkenstörfer, H Kobolla, U Krackhardt, N Lindlein, J Schwider, N Streibl, R Völkel and H Weißmann
- 61 Theoretical and practical problems of lenticular screens B Jèquier
- 67 The testing of microlens arrays M C Hutley, D Daly and R F Stevens
- 83 Holographic microlens arrays as spatially variant optical interconnects E J Restall, B Robertson, M R Taghizadeh and A C Walker
- 91 Microlens arrays for solar astrometry G Artzner
- 97 An array of lenses for coupling light into a spectrometer R G Bingham, N J Fernyhough, D W Gellatly, A Weise and S P Worswick

- 103 Singlemode fibre interconnect with microlenses J S Leggatt
- 109 The use of microlens arrays in integral photography
  N Davies and M McCormick
- 123 Integral photography in practice G S B Street
- 129 Dimensional stability in instant integral stereoscopy
  D G Burder
- 133 Direct transfer to holoscopic images using microlens elements M McCormick, N Davies and H W Lau
- 147 The formation of integral images by afocal pairs of lens arrays ("superlenses")

  M C Hutley and R F Stevens