

ISSN 0022-3727

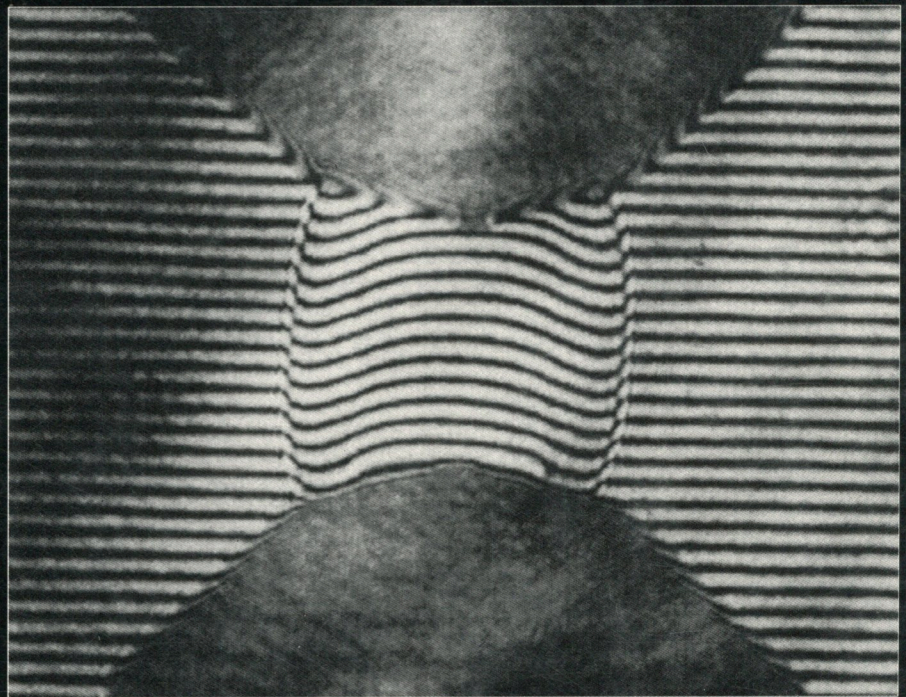
**IOP**

# Journal of Physics D **Applied Physics**

Volume 30 Number 7 7 April 1997

Online: <http://www.iop.org>

A Journal Recognized by  
The European Physical Society



Institute of **Physics** PUBLISHING



# Journal of Physics D: Applied Physics

Volume 30

Number 7

7 April 1997

## PAPERS

### APPLIED INTERFACES AND SURFACES

- 1055 **The influence of surface charge upon flash-over of particle-contaminated insulators in SF<sub>6</sub> under impulse-voltage conditions**  
Xie Jun and I D Chalmers
- 1064 **Structural properties of N-rich a-Si-N:H films with a low electron-trapping rate**  
G Dupont, H Caquineau, B Despax, R Berjoan and A Dollet
- 1077 **Comparing the surface activities of compounds using an elemental adsorbate**  
S M Mukhopadhyay

### APPLIED MAGNETISM AND MAGNETIC MATERIALS

- 1083 **Magnetic properties of electrodeposited nanowires**  
G P Heydon, S R Hoon, A N Farley, S L Tomlinson, M S Valera, K Attenborough and W Schwarzacher
- 1094 **Reconstruction of three-dimensional magnetic stray fields for magnetic heads using reflection electron beam tomography**  
Jun Yin, S Nomizu and J-i Matusda

### FUNDAMENTAL AREAS OF PHENOMENOLOGY (INCLUDING APPLICATIONS)

- 1103 **Improvement of self-regeneration of gas mixtures in a convection-cooled 1.2 kW CO<sub>2</sub> laser**  
A Cenian, A Chernukho, P Kukiełto, R Zaremba, V Borodin and G Śliwiński
- 1111 **On the application of a generalized form of Miller's  $\delta$  coefficient to nonlinear refractive indices in partially ionic crystals**  
P Górski, M Kin and W Kucharczyk

### PHYSICS OF GASES, PLASMAS AND ELECTRIC DISCHARGES

- 1115 **Theory of a collision-dominated space-charge sheath on an emitting cathode**  
M S Benilov
- 1120 **Heat transfer in a liquid droplet hanging at the tip of an electrode during arc welding**  
V A Nemchinsky
- 1125 **Temporal investigation of a fast spark discharge in chemically inert gases**  
R Reinmann and M Akram
- 1135 **Ion-assisted electron emission from a cathode in an electric arc**  
C Spataru, D Teillet-Billy, J P Gauyacq, P Testé and J P Chabrierie

### CONDENSED MATTER: ELECTRONIC STRUCTURE, ELECTRICAL, MAGNETIC AND OPTICAL PROPERTIES

- 1146 **Activation energy of thermoluminescence glow curves in a hyperbolic heating scheme**  
W Shambhunath Singh, S Dorendrajit Singh, N C Deb and P S Mazumdar

### CROSS-DISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY

- 1151 **Nulling ellipsometry in the study of chemically treated Si surfaces**  
T Easwarakhanthan

*Continued on inside back cover*

- 1157 **The electrical impedance of a continuously scaled fractal transmission line**  
M Ishida and R M Hill

**COMMENT**

- 1165 **Dielectric properties of  $Ba_{1-x}Sr_xTiO_3$  ceramics**  
Z-Y Cheng and R S Katiyar

**REPLY TO COMMENT**

- 1166 **Dielectric properties of  $Ba_{1-x}Sr_xTiO_3$  ceramics**  
A D Hilton and B W Ricketts