

simple geometries obtained using this program are compared with existing analytical and simple numerical solutions.

### **Determination of Equilibrium Shapes and Optimal Volume of Solder Droplets in the Assembly of Surface Mounted Integrated Circuits**

By *L.M.RACZ, et al.*

The equilibrium shape of a liquid meniscus at a liquid-gas phase boundary of a system in which solid, liquid and gaseous phases coexist is given by a balance of forces acting on the system. A method of calculation was

introduced in Part I of this series for determining this equilibrium shape. Here, this method is used to calculate the equilibrium shapes of solder joints surrounding gullwing and j-bend type lead wires present in surface mounted integrated circuits. A study is also done to determine the optimal volume needed to produce a good solder joint. Criteria are established, dimensionless calculations are done for gullwing and j-bend leads, and a method is outlined for applying these results to lead wires with different geometries.

## **Call for Papers of ISIJ International Special Issues**

### **① Surface Modification of Materials**

A special issue on surface modification of materials is planned for publication in September or October 1993. Recent progress in CVD, PVD, thermal spraying and related techniques used to deposit monolayer, multilayer and multi functional thin/thick films and coatings on metal or ceramic substrate has been reported for a number of applications including wear, erosion, corrosion and thermal protections.

The Editorial Board is calling for original and review papers relating to all aspects of surface modification of metals and ceramics. The issue covers the following subjects:

- 1) CVD or PVD
- 2) Surface treatment by laser or plasma
- 3) Surface treatment by molten salt
- 4) Spraying
- 5) Ion implantation or ion beam enhanced dynamic mixing
- 6) Hotdipped coating, electroplating or electroless plating

Authors wishing to submit a paper for publication in the special issue are asked to send the manuscript before **March 31, 1993**

### **② Physical Metallurgy of Ultralow Carbon Interstitial Free Steels**

A special issue on physical metallurgy of ultralow carbon interstitial free steels is planned for publication in January 1994. The production and the range of use of the so-called interstitial free (IF) steels are remarkably increasing with the advancement of steel making and subsequent continuous manufacturing processes. This special issue is planned for the purpose of understanding the present state of research and technology of IF steels with emphasis on the microstructure and its relationship to mechanical properties.

The Editorial Board is calling for original and review (invited) papers dealing with the following subjects related to the heat treatment, mechanical working, thermomechanical processing *etc.* of IF steels:

- 1) Recrystallization, precipitation, phase transformation and microstructure formation.
- 2) Deformation, grain boundary characterization and mechanical properties.
- 3) Thermodynamics and thermodynamic properties.

Authors wishing to submit a paper for publication in the special issue are asked to send the manuscript before **April 20, 1993**.

この件に関する問合せ先：社団法人 日本鉄鋼協会 編集・業務室 欧文会誌係