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set of optimum conditions for annealing amorphous silicon has been demonstrated. The effects of laser annealing were examined by measuring the sheet resistance, the I-V characteristics of the p-n junction, observation of stacking faults(OSF) in the recrystallized layer, analysis of scanning electron microscope(SEM) photographs, transmission electron microscope(TEM) images, and transmission electron diffraction(TED) patterns. It is found that the direction of the amorphous silicon regrowth on the (100) substrate is [100], while that of amorphous silicon on SiO₂ is $[\bar{1}14]$, $[\bar{2}23]$ or $[\bar{1}10]$ by observation of OSF figures and TED patterns in the recrystallized layer.

J-15

Pd₂Si Silicide Formation of Ion Beam Mixed Pd/Si Bilayer. B.S. Choi*

(Chunju Univ.), J.H. Chu, C.N. Whang, C.C. Lee(Yonsei Univ.), R.Y. Lee(Dankook Univ.), H.S. Choe, K.H. Kim(Kyungsang Nat'l Univ.). The evaporated Pd films of 450 Å onto Si(111) were irradiated to various doses in the range of $1 \times 10^{15} \sim 1.5 \times 10^{16}$ ions/cm² at 78 keV Ar⁺ ions for silicide formation. The Pd₂Si silicide formation were investigated using RBS, AES, TEM and X-ray diffraction analysis. From the AES analysis, the Pd₂Si phase formation temperature is found to be about 250°C for the unmixed sample, 94°C for the one mixed with 3×10^{15} Ar⁺/cm², and room temperature for the one mixed with 1×10^{16} Ar⁺/cm², respectively. X-ray diffraction pattern and TEM show also same results.

K

K-1

Singularity Spectrum for Period n-tupling in Area-Preserving Maps.

Sang-Yoon Kim (KNU) and Bambi Hu (University of Houston). The singularity spectrum $f(\alpha)$ and the generalized dimension $D(q)$ of the critical orbit is numerically obtained to study the global scaling behavior of period n-tupling ($n=2,3,4$) in area-preserving maps. It is found that $f(\alpha)$ becomes quite different as n is changed, and the generalized dimension $D(q)$ increases for all q . The global scaling behavior of

conservative systems is different from that of dissipative systems. Moreover, for conservative systems, the global scaling behavior depends on dimensionality.

K-2

二重확산(double diffusion)과 鹽指(salt-finger) 현상에 관한 연구. 문희태⁺, 이선구(한국과학기술대학). 확산 속도가 낮은 용액이, 좀더 빠른 확산 속도를 가지며 또한 무거운 다른 용액위에 놓이게 되면, 그 사이에, 이른바 '鹽指'현상이 일어난다. 이 현상은 비결정고체들이 응고할 때든지, 혹은 바닷물에서의 수온과 염분의 분포에 영향을 미치는 등 여러분야에서 나타나며, 理解를 要하는 중요한 현상^{*}이다. 여기서는 重力의으로 안정된 유체에 확산속도가 서로 다른 두가지의 物性인 온도와 염도가, 상호 충분히 비선형적으로 경쟁할 때 나타나는, 일종의 대류운동인 鹽指의 발생 및 구조에 관하여 연구한다. 온도 및 염도 변화에 따른 밀도 변화와의 상관관계는 Boussinesq Approximation을 따르며, 얻어진 예비결과를 실험실에서 얻은 결과와 비교하여 報告하기로 한다.

+ 이 연구는 과학재단 일반연구(SG-87-00250)지원을 받음.

* J. Taylor and G. Veronis, Science 231, 39(1986).

K-3

Dynamical Properties of the Strongly Coupled One-Component Plasmas. Cheolkyu Kim and J. Hong (S.N.U.) and M. h. Lee (Univ. of Georgia). Dynamical properties of the strongly coupled one-component plasmas following classical statistics are studied in terms of the dynamically convergent calculation method developed recently. The dynamical structure factors are obtained by calculating the frequency-dependent local-field corrections. Theoretical results approach molecular dynamics data quite fastly by increasing approximation order of the method.

K-4

Exact Dynamical Behavior of the Transverse Ising Model Near the Critical Point. C. Lee and S. I. Kobayashi (Nagoya Univ.) and J. Hong (S.N.U.) We exactly calculate the time evolution, the admittance, and the random force of the magnetization, and also those of the partial energy of the one-dimensional transverse Ising model near the critical point. The results of the above two cases are shown to be exactly the same. Those are explicitly represented by