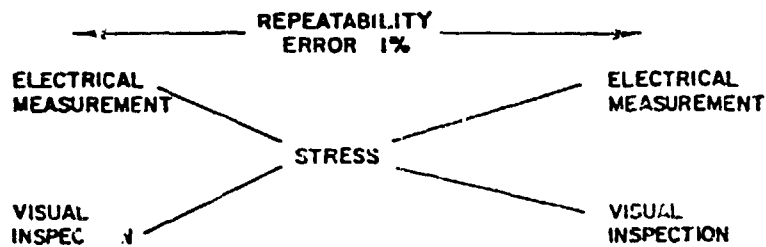


N85-32451

# ACCELERATED STRESS FACTORS AND FAILURE/DEGRADATION MECHANISMS IN TERRESTRIAL SOLAR CELLS

CLEMSON UNIVERSITY

Jay W. Lathrop



**ELECTRICAL PARAMETERS**

$V_{oc}$   $I_{sc}$   $R_s$   $V_m$   $I_m$   $P_m$

**INSPECTION**

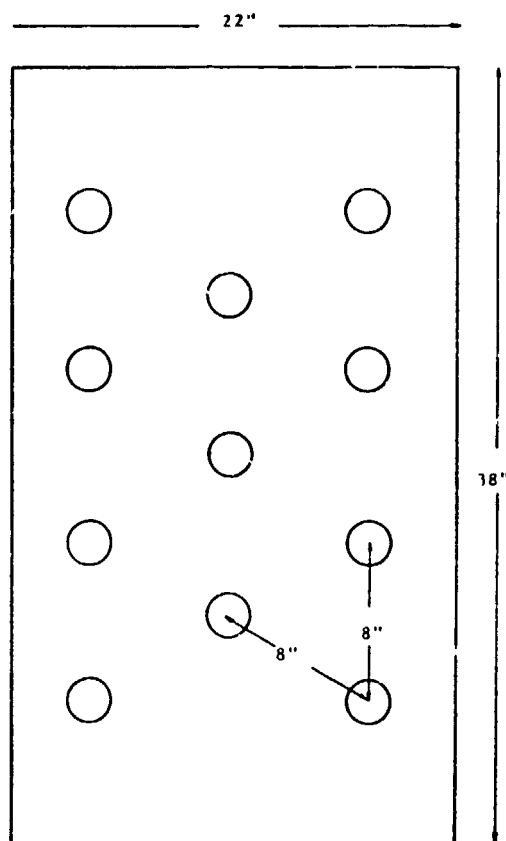
LOW POWER MAGNIFICATION  
PHOTOGRAPHY

## Planned Development of Amorphous-Cell Accelerated Test Measurement Instrumentation

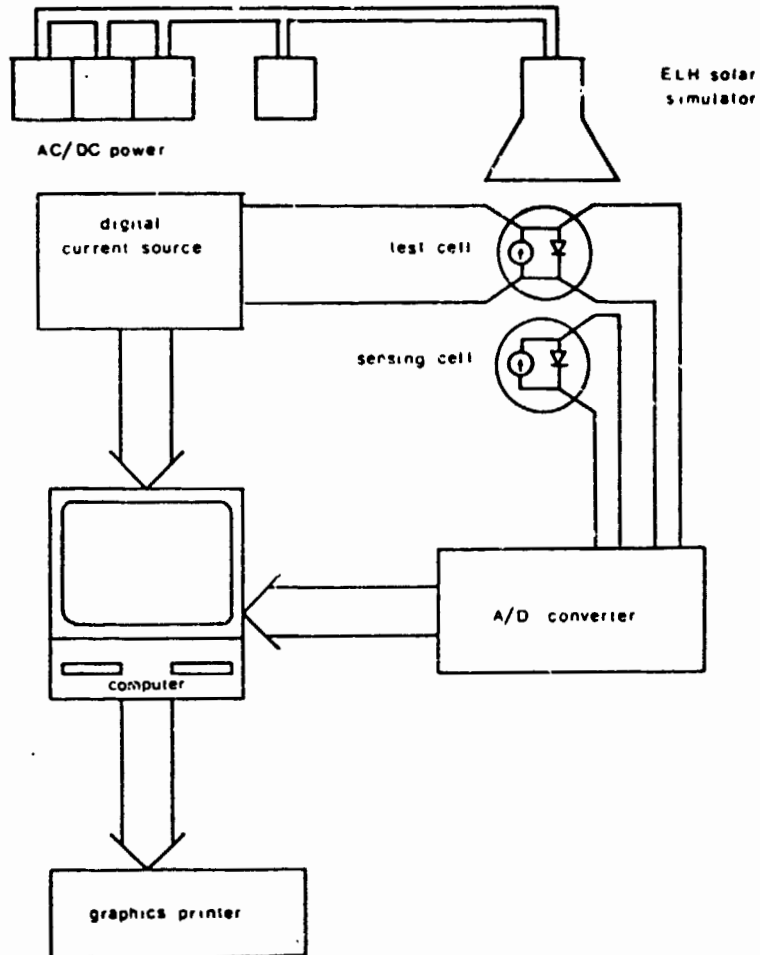
	PHASE 1	PHASE 2	PHASE 3
LIGHT SOURCE	4-LAMP ELH 4-INCH DIAM D SHUTTERED	11-LAMP ELH 12-INCH SQ AC SHUTTERED DIFFUSER	ADDED UV 11-LAMP ELH 12-INCH SQ AC SHUTTERED CONTINUOUS DIFFUSER
REFERENCE CELL	CONVENTIONAL SILICON CELL	SIMULATED AMORPHOUS	SIMULATED AMORPHOUS
ELECTRICAL CONNECTION	KELVIN METAL PROBE	KELVIN LINEAR ELASTIC	KELVIN LINEAR PLASTIC
TEMPERATURE CONTROL	CONTROLLED AIR FLOW	CONTROLLED AIR FLOW	CONTROLLED AIR FLOW SOFTWARE CORRECTION
CHARACTERISTIC	POWER QUAD	POWER QUAD FAR-FORWARD	POWER QUAD FAR-FORWARD REVERSE

MODULE DEVELOPMENT AND ENGINEERING SCIENCES

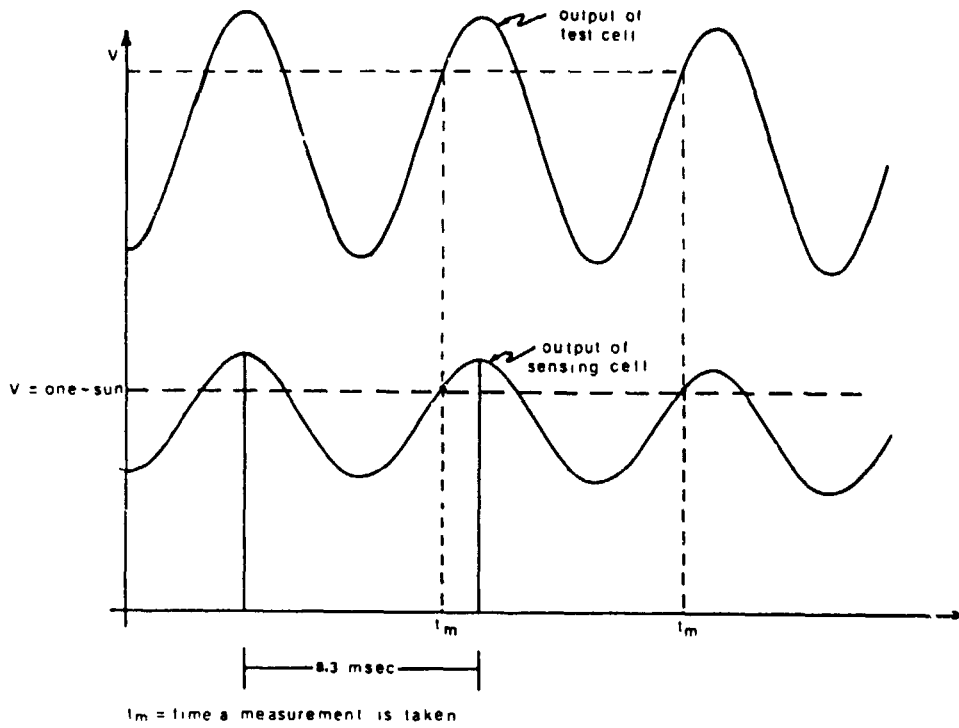
11-Lamp ELH Solar Simulator



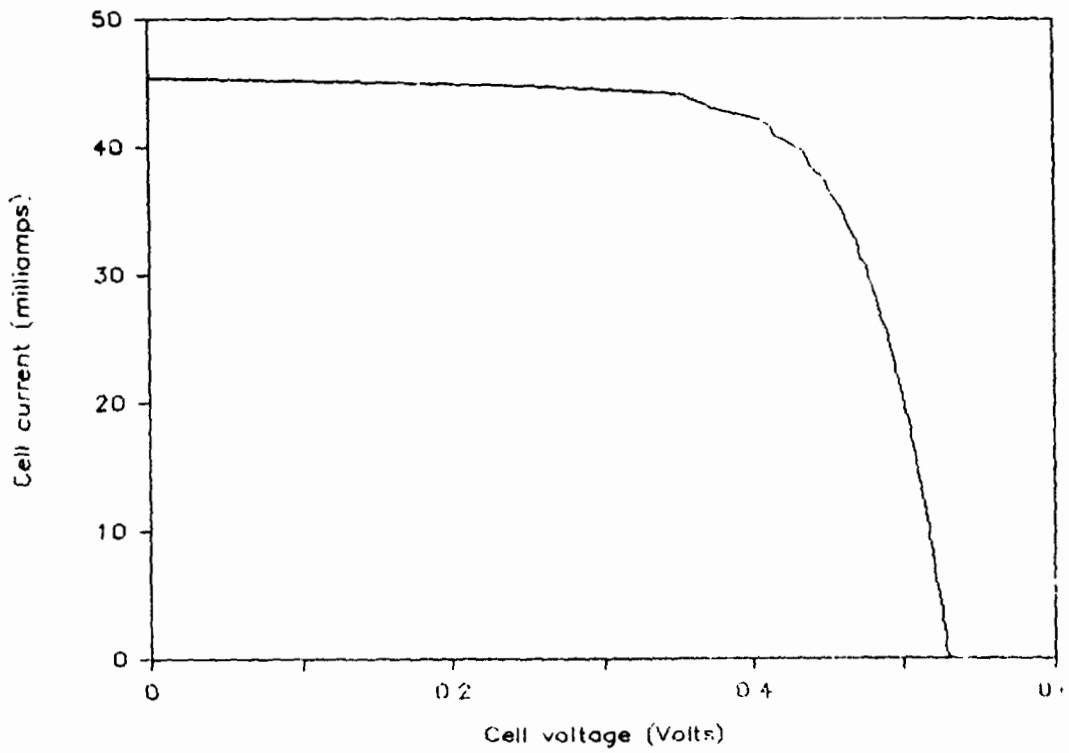
### Ac Light-Source Instrumentation



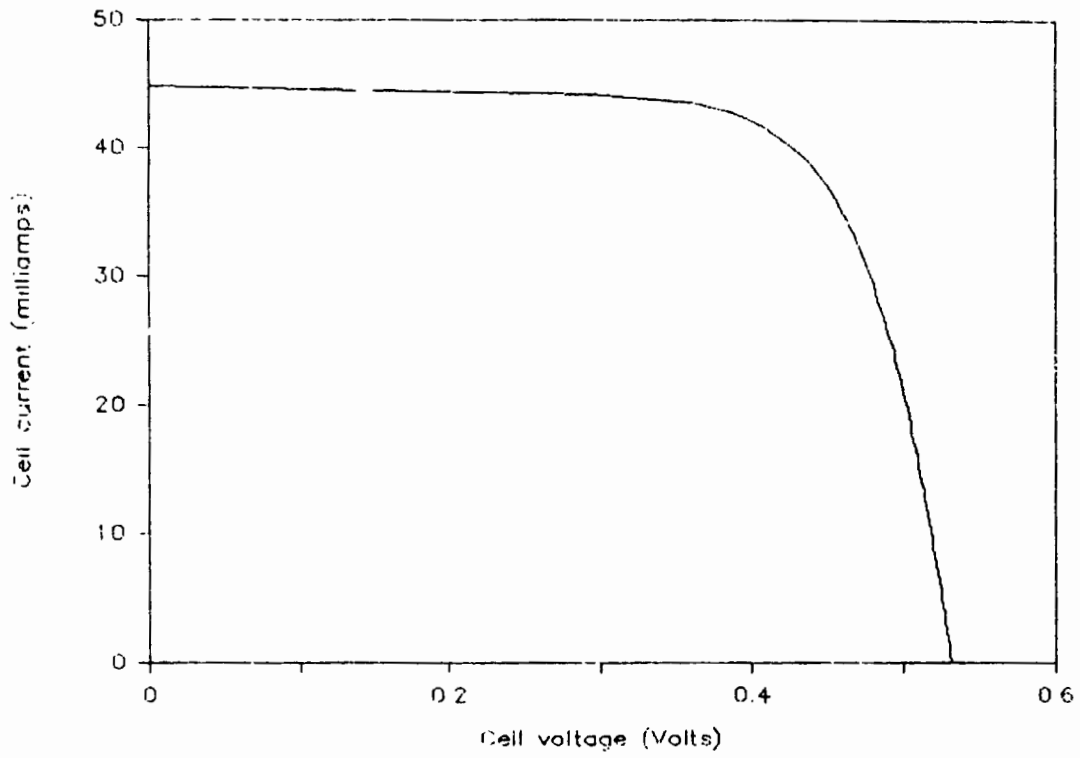
Timing of Measurements When Ac Light Source Is Used



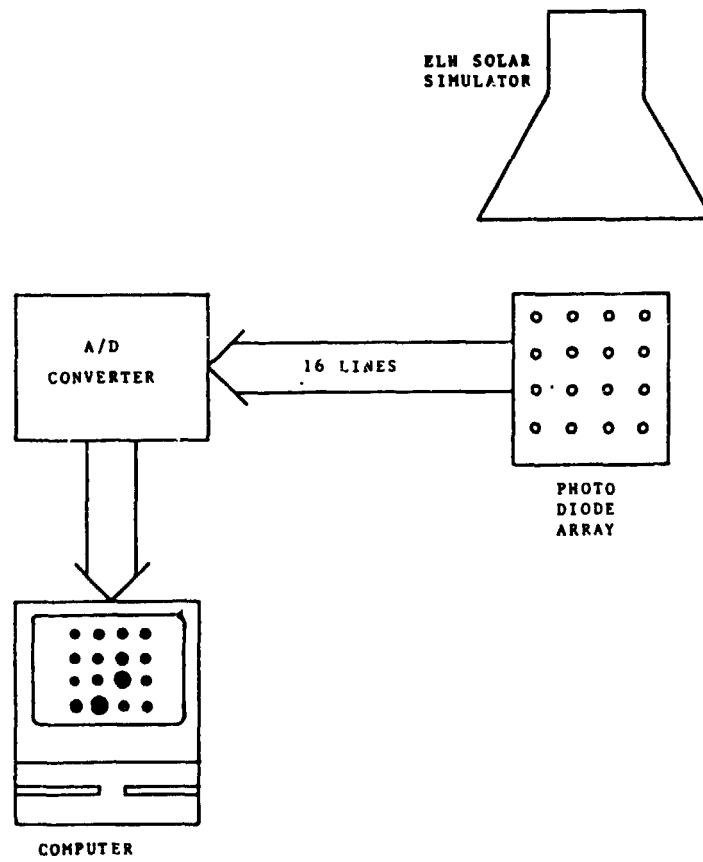
Crystalline Silicon Cell: Dc Analysis



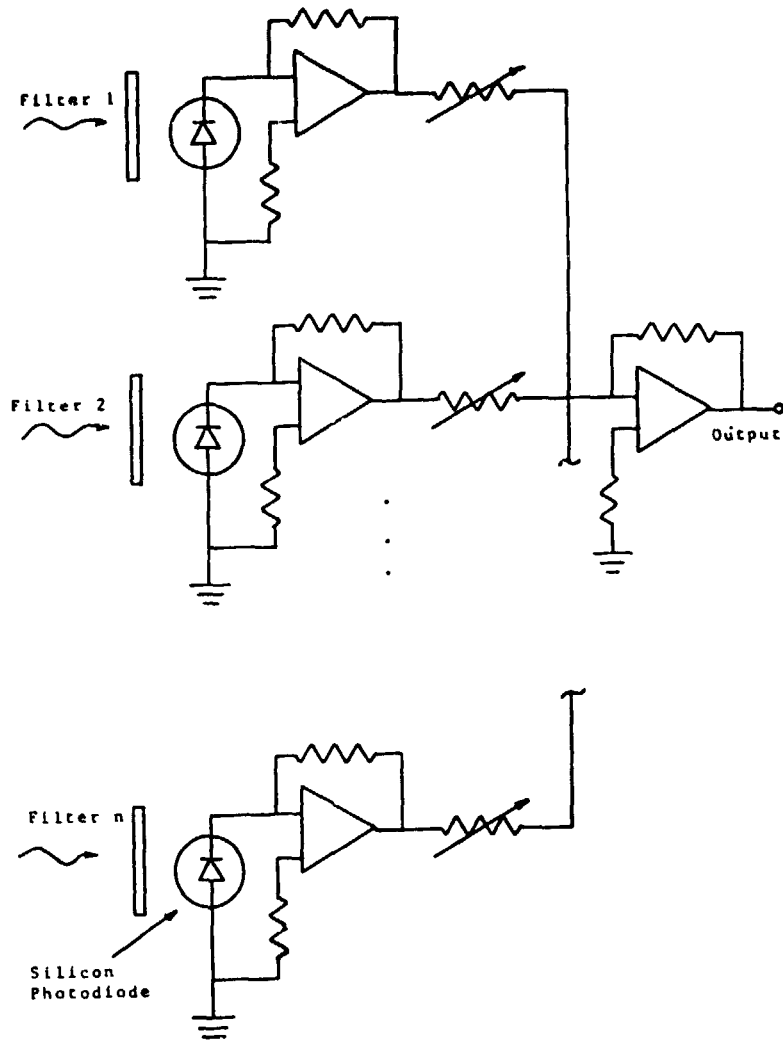
Crystalline Silicon Cell: Ac Analysis



Intensity Monitoring and Adjustment



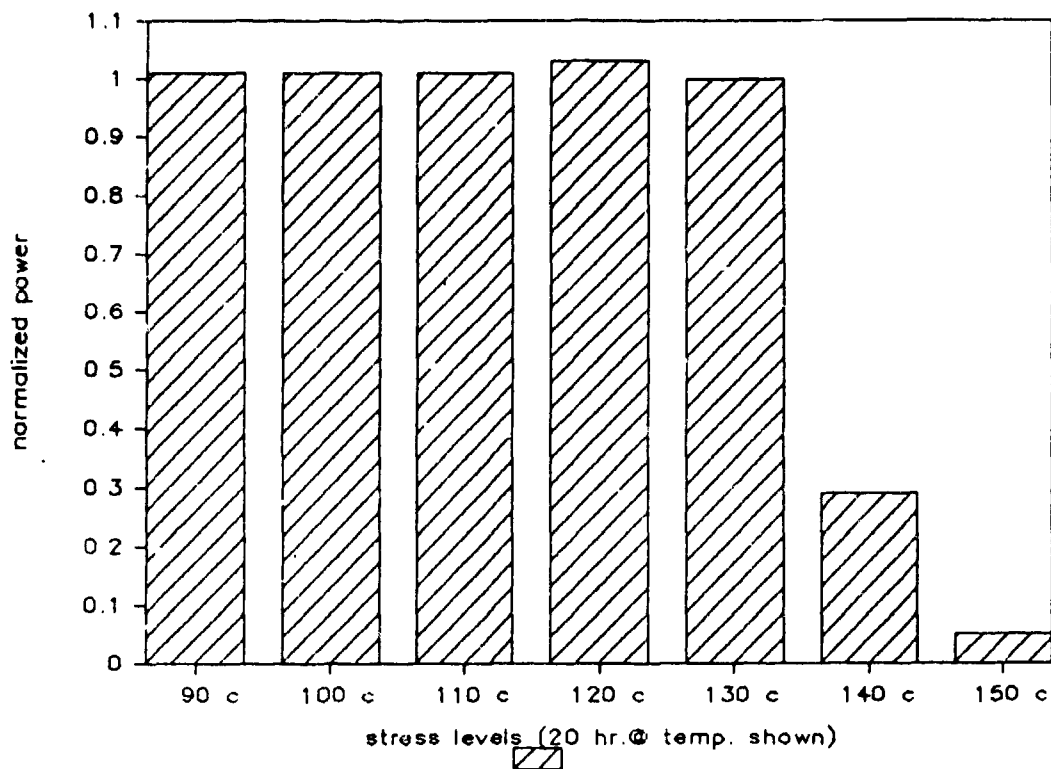
Simulated Amorphous Reference Cell





Temperature Step Stress

ORIGINAL PAGE IS  
OF POOR QUALITY



MODULE DEVELOPMENT AND ENGINEERING SCIENCES

a-Si at 75°C

