

Army Sci Conf
1972

SESSION A

A-I-1

25
TITLE: Experimental Verification of Theoretical Predictions of Self-Induced Beam Distortion for High Power Density Laser Beam
AUTHORS: RHODE and BUSER
Fort Monmouth

ABSTRACT: Experimental and theoretical results obtained during the Army's 71 and 72 in-house high power laser propagation program are presented and discussed. Novel Experimental Techniques and operational procedures lead to the following conclusions: Most reliable method for the determination of beam quality is beam translation or slewing; existing theoretical models translated into propagation engineering nomograms are well predicting the observed propagation effects.

C-V-1

RG HM H
TITLE: Discharge of Helicopters by Electronically Controlled Emission of Charge Carrying Liquid Droplets
AUTHORS: BUSER, KAUNZINGER and INSLEMAN
Fort Monmouth

ABSTRACT: A new concept for an electronically controllable discharge of surface charges which may accumulate on helicopters and present a considerable hazard to personnel is explored. It uses mechanical transport of charges by liquid droplets. Theory of nozzle produced sprays operating in electric field gradients is developed and criteria for efficient charge transport are established. Experimental results for single nozzles and multiple nozzle clusters are presented, and the application of these results to the Army's ongoing Heavy Lift Helicopter design study given. Nozzle clusters with a current capacity of 100 μ A have been tested.

ASC-1972
C V 2

FILE NO. 61466

AUTHOR (S)

Buser, R.G., and Rahilly, W.P.

TITLE

Ablative Light Sources

ORGANIZATION PREPARING DOCUMENT

Army Electronics Command, TR-ECOM-2842

DATE OF DOCUMENT

June 1967

CONTRACT NO.

SUMMARY

AD 656 459

FILE HEADINGS

1. LIGHT SOURCES
2. FLASH TUBES
3. TUBES, DISCHARGE
4. Title
5. & 6. Authors
7. Ser.

LOCATION

PHYSICS

EVANS COPY

HEXAGON COPY

ROUTE SHEET NR.

MSSEL-RD Form
Dec 66

4101A

TECHNICAL DOCUMENTS CENTER
INDEX

FILE NO. 86249

AUTHOR (S)

Buser, R. G. and Sullivan, J. J.

TITLE

Construction and Performance of High Current Air-Gap
Switches

ORGANIZATION PREPARING DOCUMENT

Army Electronics Labs., Army Electronics Command TR 2484

DATE OF DOCUMENT

July 1964

CONTRACT NO.

SUMMARY

FILE HEADINGS

1. SPARK GAPS
2. SWITCHES, AIR-GAP
3. Title
4. & 5. Authors
6. Ser.

LOCATION

EVANS COPY

HEXAGON COPY

ROUTE SHEET NR.

SELFM Form
1 Jul 63

1174 A ELEC & ELEC EQUIP

(Replaces FMSC-8629 A, which may be used)

TECHNICAL DOCUMENTS CENTER
INDEX

FILE NO. 61114	FOR OFFICIAL USE ONLY		FILE HEADINGS
AUTHOR (S) Buser, R.G. and Born, G.K.			1. LASERS 2. PROPAGATION, ATMOSPHERIC 3. ATTENUATION 4. Title 5. & 6. Authors 7. Ser.
TITLE Review of the Army's Program in the Field of Laser Propagation			
ORGANIZATION PREPARING DOCUMENT Army Electronics Command - TR ECOM-2791			
DATE OF DOCUMENT January 1967	CONTRACT NO.		
SUMMARY			

LOCATION	EVANS COPY	HEXAGON COPY	ROUTE SHEET NR.
ELSC Form Feb 65 1064A Replaces SELFM 1174A, which may be used)	FOR OFFICIAL USE ONLY		TECHNICAL DOCUMENTS CENTER INDEX

FILE NO. 63506			FILE HEADINGS
AUTHOR (S) Noon, J.H., and Buser, R.G., et al.			1.-9. Title 10. & 11. Authors 12. Ser. 13. Contract 14. Rensselaer Poly-technic Institute, Electrophysics Div
TITLE Electron Radiation Temperatures and Optical Gain Measurements in a CO ₂ Laser Amplifier			
ORGANIZATION PREPARING DOCUMENT Army Electronics Command - ECOM-3037			
DATE OF DOCUMENT October 1968	CONTRACT NO. DAAB07-67-C-0533		
SUMMARY			

AMSEL-XL-S			
LOCATION ELECTRONIC EQUIPMENT	EVANS COPY	HEXAGON COPY	ROUTE SHEET NR.
AMSEL-RD Form 1 Dec 66 4101A	FOR OFFICIAL USE ONLY		TECHNICAL DOCUMENTS CENTER INDEX

FILE NO. 63530		FILE HEADINGS	
AUTHOR (S) Noon, J.H., and <u>Buser, R.G.</u>		1.-8. Title	
TITLE Argon Ion Laser Utilizing a Hollow Cathode Gas-Fed Arc		9. Author	
ORGANIZATION PREPARING DOCUMENT Army Electronics Command - TR-ECOM-3032		10. Ser.	
DATE OF DOCUMENT October 1968		11. Contract	
CONTRACT NO. DAAB07-67-C-0533		12. Rensselaer Poly- technic Institute	
SUMMARY		13. Author	
AMSEL-XL-S			
LOCATION MASERS AND LASERS	EVANS COPY	HEXAGON COPY	ROUTE SHEET NR.
AMSEL-RD Form 1 Dec 66	4101A	TECHNICAL DOCUMENTS CENTER INDEX	

100 238

1. ORIGINATING ACTIVITY (Corporate author) US Army Electronics Command Fort Monmouth, New Jersey 07703		2a. REPORT SECURITY CLASSIFICATION Unclassified	
3. REPORT TITLE Laser Action from a Dynamically Compressed Xenon Plasma		2b. GROUP	
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Technical Report			
5. AUTHOR(S) (First name, middle initial, last name) A. Papayouanou, <u>R. G. Buser</u> , and I. Gumeiner			
6. REPORT DATE June 1972	7a. TOTAL NO. OF PAGES 36	7b. NO. OF REFS 25	
8a. CONTRACT OR GRANT NO.	8b. ORIGINATOR'S REPORT NUMBER(S) ECOM-3592		
8. PROJECT NO. 1S6 62705 A 056	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report) AMSEL-TL-Q		
- Task No. -03			
d. Work Unit No. -291			
10. DISTRIBUTION STATEMENT			

Approved for public release; distribution unlimited

FILE NO. 62419			FILE HEADINGS 1. LASERS 2. LIGHT 3. Title 4.&5. Authors 6. Ser.
AUTHOR (S) Papayocanou, A. and Buser, R.G.			
TITLE High-Power Incoherent Light Sources			
ORGANIZATION PREPARING DOCUMENT Army Electronics Command	ECOM-2899		
DATE OF DOCUMENT November 1967	CONTRACT NO.		

SUMMARY

LOCATION PHYSICS, GEN.	EVANS COPY	HEXAGON COPY	ROUTE SHEET NR.
AMSEL-RD Form 1 Dec 66 4101A			TECHNICAL DOCUMENTS CENTER INDEX

FILE NO. 85042			FILE HEADINGS 1. VACUUM, ULTRA-HIGH 2. HELIUM 3. Title 4. & 5. Authors 6. Ser.
AUTHOR (S) Buser, R. G., and Sullivan, J. J.			
TITLE Design and Use of Diffusion Fill Devices in Ultra-High Vacuum Applications			
ORGANIZATION PREPARING DOCUMENT Army Electronics Research and Development Laboratories. Tech. Rept. 2420			
DATE OF DOCUMENT February 1964	CONTRACT NO.		

SUMMARY

LOCATION	EVANS COPY	HEXAGON COPY 1	ROUTE SHEET NR.
----------	------------	-------------------	-----------------

AMELFM Form 1 Jul 63 1174 A (Replaces FMSC-8629 A, which may be used)		TECHNICAL DOCUMENTS CENTER INDEX
---	--	-------------------------------------

FILE NO. 89388		FILE HEADINGS 1. PRESSURE MEASUREMENTS 2. VACUUM, ULTRA-HIGH 3. Title 4. and 5. Authors 6. Ser.
AUTHOR (S) Buser, R. G. and Sullivan, J. J.		
TITLE Pressure Bursts in Bakeable Ultra-High Vacuum Valves During Opening and Closing		
ORGANIZATION PREPARING DOCUMENT Army Electronics Command - TR-ECOM-2638		
DATE OF DOCUMENT September 1965	CONTRACT NO.	

SUMMARY

LOCATION GASDYNAMICS	EVANS COPY	HEXAGON COPY	ROUTE SHEET NR.
ELSC Form Feb 65 1064A Replaces SELFM 1174A, which may be used)			TECHNICAL DOCUMENTS CENTER INDEX

100 223

1. ORIGINATING ACTIVITY (Corporate author) US Army Electronics Command Fort Monmouth, New Jersey 07703	2a. REPORT SECURITY CLASSIFICATION Unclassified
3. REPORT TITLE Controlled Helicopter Discharge	2b. GROUP NA
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Technical Report	
5. AUTHOR(S) (First name, middle initial, last name) Rudolf G. Buser Helmuth M. Kaunzinger Irwin Gumeiner	
6. REPORT DATE May 1972	7a. TOTAL NO. OF PAGES 30
	7b. NO. OF REFS 11
8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S) ECOM - 3575
b. PROJECT NO. ITO 61102 B31A	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report) AMSEL-TL-Q
c. Task No: 01	
d. Work Unit No: 345	
10. DISTRIBUTION STATEMENT Approved for public release and sale, distribution unlimited	

FILE NO. 67 386		FILE HEADINGS 1-2. Authors 3. Title 4. Series
AUTHOR (S) Buser, R. G./Kainz, J. J.		
TITLE Time and Space Resolved Measurement of the Gas Temperature and its Decay in Afterglow Discharges		
ORGANIZATION PREPARING DOCUMENT Army Electronics Command, ECOM-3467		
DATE OF DOCUMENT September 1971	CONTRACT NO.	

SUMMARY

AMSEL-TL-Q

LOCATION	EVANS COPY	HEXAGON COPY	ROUTE SHEET NR.
AMSEL-RD Form 1 Dec 66 4101			TECHNICAL DOCUMENTS CENTER INDEX

100 252

1. ORIGINATING ACTIVITY (Corporate author) U.S. Army Electronics Command Fort Monmouth, New Jersey 07703		2a. REPORT SECURITY CLASSIFICATION Unclassified	
		2b. GROUP	
3. REPORT TITLE On-Line Mass Spectrometric Determination of Gas Constituents in Gas Dynamic Power Amplifiers			
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Technical Report			
5. AUTHOR(S) (First name, middle initial, last name) R.G. Buser H.V. Guetzlaff J.J. Kainz R.S. Rohde			
6. REPORT DATE August 1972	7a. TOTAL NO. OF PAGES 24	7b. NO. OF REFS 5	
8a. CONTRACT OR GRANT NO.		8b. ORIGINATOR'S REPORT NUMBER(S) ECOM - 4012	
b. PROJECT NO. 1T5 63611 D459			
c. Task No: 00	8c. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)		
d. Work Unit No: 011			
10. DISTRIBUTION STATEMENT Distribution limited to U.S. Government agencies only; Classified References; 1 August 72. Other requests for this document must be referred to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-CT-L, Fort Monmouth, N.J. 07703			