

إتصالات الألياف البصرية

المهندس



Optical Fibers

Fiber Optics

(Ga As)

(heterodyne)

Wavelength Division Mul -(WDM) tiplxing

(Er)

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((Amplifiers (EDFA,s bium Doped Fiber

EDFA,s

(Solitons)

Perspective Historical .)

Fibers Optical

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Optical Fibers System

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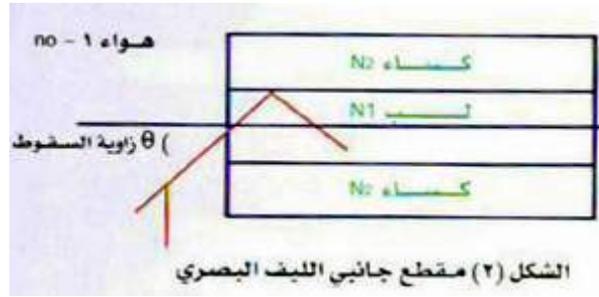
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Snell,s Law

. Total Internal Reflection .

Advantages of Optical Fibers ()

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SEA-ME-

WEY,FLAG

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. Information Carrying Capacity

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CROSSTALK

dielectrics

.Interfernce

induction

Repeaters .

Optical Fibers Types of -

Multimode Step Index Fibers - -

Multimode graded Index

- -
Fibers

Single Mode Fibers - -

evanescent

Properties of Optical Fibers

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Apertur Numerical

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Sine

$$\sin \Phi \sqrt{n_1^2 - n_2^2} = n_2 \theta = NA$$

n_1

n_2

θ

Attenuation

-

Absorption

Scattering

(OH)

(OH)

Dispersion

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Intermodal dispersion

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waveguide dispersion

() dispersion material

System Components

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Spectral

- :

Width

. Laser Diodes

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. APD

PIN

Fiber Applications Optical

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Telephone Communications

1-0

Light Emitting

avalanche photodiodes

Pulse code

Diodes

modulation

Communications TV

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Cable

(television (CATV

Power Stations

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Data

. control

transmission

Networks Local Area

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Military Applications

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Data transmission

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Undersea Cables ()

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TATΛ

TAT-12/13

FLAG

SEA-ME-WEY

ARFICA ONE

Auture Directions

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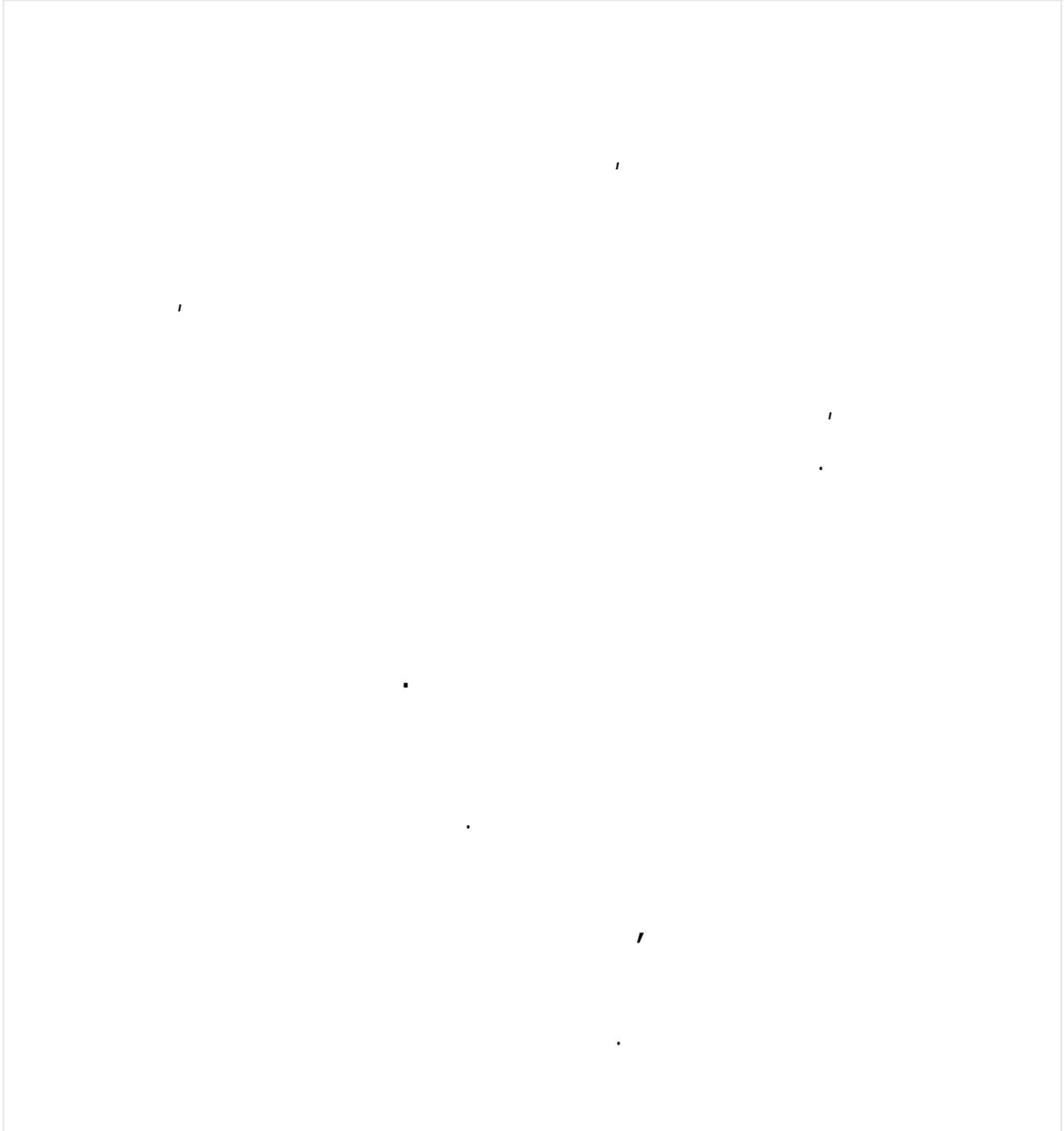
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Comparison of Fiber Optics

and Copper Wire



Developed New Kind of Optical Fiber

Penn State

John Badding

University

Advanced

Materials

Badding

- DVDs

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high-pressure chemical-deposition technique

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Justin Sparks

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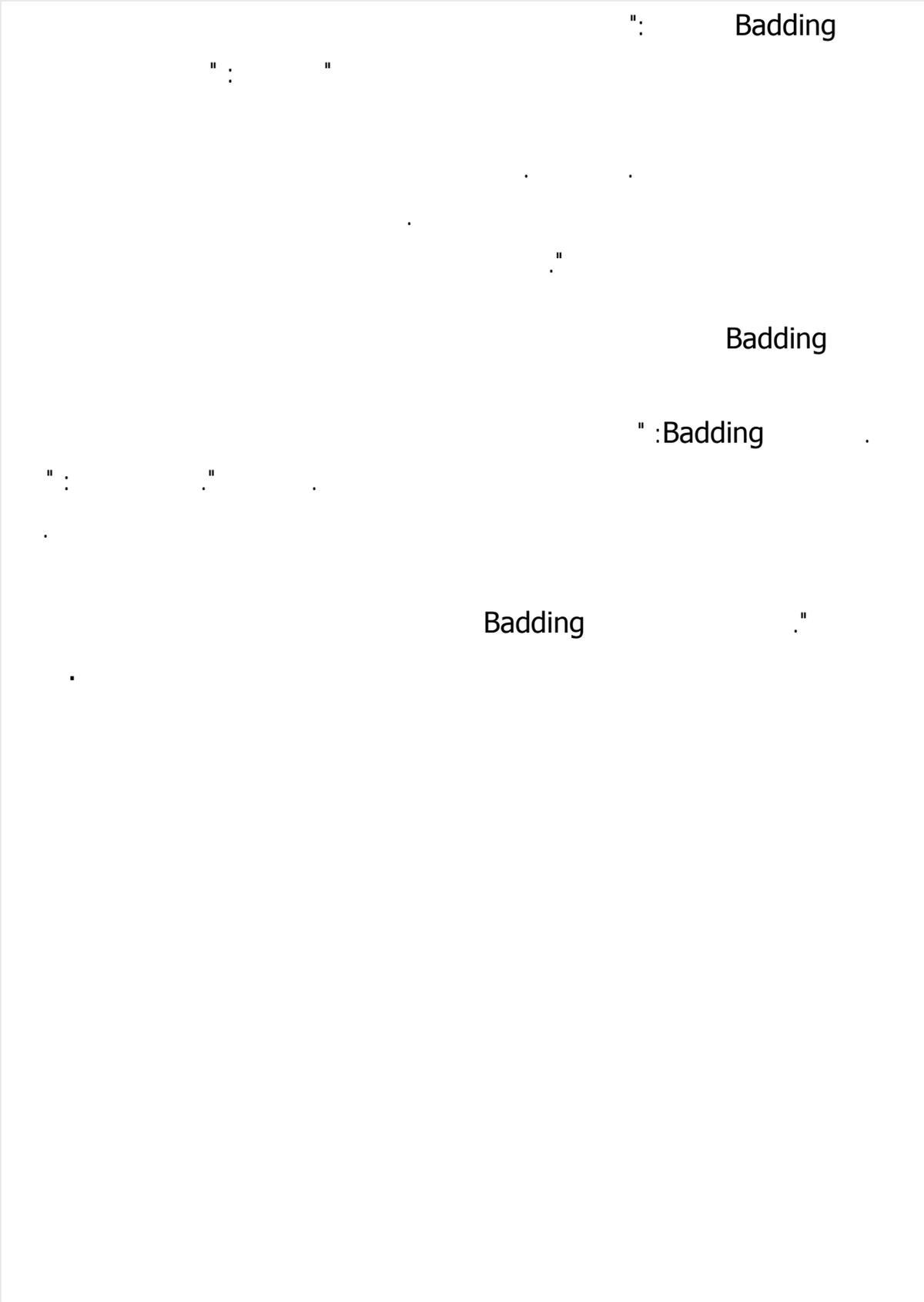
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. < الألياف البصرية وثورة المعلوماتية > الدكتور محمد أحمد عبداللطيف، القاهرة
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