











**2006**

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179	.98
185	.99
189	100
194	101
198	102

201  
203  
209

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104







technology

techno

logy

Technology

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6000

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8000

6000



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1200

1700

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12

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24

360

570

1938

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12

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200

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1500

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2900

. 17000

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230

90

184

24

. 384

. 348

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. 600

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. 1400

400

205

40000

40.075

560

Selcuk

Ephesus

130

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263

323

.St.Jon Chrysostom

401

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HELIOS

282

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## نقل النتاج العلمي العربي والاسلامي

Sylvester

Constantina Africanus

Rayniord

:

Adelard of Bath, John of Seville, Gerard Cremona  
Stephenson of Saragossa, Michael Scot, Robert of  
Chester, Philip of Tripoli, William of lunis.

70 Gerard

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:

:

## الرياضيات

786

:

( )

850

46

953

1048

836

965

980

1260

908

973

850

1201

47

## علم الفلك

52

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الطب

706

1156

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## علوم الحياة

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الجغرافية

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العلماء العرب والمسلمون

750

776

. 869

جابر بن حيان

Robert

1144

of Chester

873

810

836

61

. 900

ابو جعفر محمد بن موسى الخوارزمي

780

. 850

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":

":

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2402

البتاني

. 929

850

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ابن الهيثم

965

63

. 1020

. 70

الرازي

.923

865

" : " : " : "



الكندي

.873

Witelo & Roger Bacon

ابن سینا

1037

980

" :

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600

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1593

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973

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8 6 5 4 3

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الغزالي

. 1058

1095

ابن رشد

. 1126

عمر الخيام

1044

Gregorian

3330

.Gregorian

3330

365.24219858156

.365.242190

365.242196

ابن النفيس

. 1288

1213

الفارابي

**ابن خلدون**

. 1406

1332

.1812

:



الخاتمة









Robert  
Otto von  
Huguenot

Boyle  
Guericke  
Denis Papin

Thomas Savery

.1712

Thomas Newcomen

1709

Abraham Darby

Meissen

Delft.

1750 1500



John Kay



de Midi

1692

100

150

45

Greenwich

John Dalton

Antoine Lavoisier

1750

1500











.1830 1760  
1850



1688

1850

1721 .  
John Derby  
1746 . Lombe  
Warmley

Thomas

1698

Savery

Miner's Friend

Thomas Newcomen

1712

1729

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110

1733

.1800

1454

1776

Thomas

Newcomen

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Matthew Boulton

1800 1775

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500

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Richard Trevithick

1802

10

Oliver Evans

.Cornish engineer

1880

1884

Charles Parsons



1859

Etienne Lenoir

Nikolous Otto

1878

1880

.Otto

1892

Rudolf diesel

1885

Carl Benz

Sadi

Carnot  
.thermodynamics

.1817

fly-shuttl

James Hargreaves  
1767 spinning Jenny  
16

1793 Eli whitney

1740

.1784

1709

Bessemer and siemens  
Henry .1856 Bessmer

S . G . Thomas and percy Gilchrist

1900

Jamin Franklin

Alessandro volta

Michoel Faraday

1831

thomas Edison

Bouiton and watt

James Nasmyth



John Roebuck

bleaching

.1799

Charles Tennant

1791

Nicolas Leblanc

1856

W.H. Perkin

1842-1825

Thamas Telford

Isambord Kingdom Brunel

John Roebling

stockton &

.1825 Darlington

1830

George Stephenson

.Robert

1775

Robert

1812

.1807

Fulton

1830

I. K. Brunel

1843

J. N. 1826  
Niepce

L. J. M.  
W. H. Fax  
Daguerre

1890  
George Eastman

.1837  
charles wheatsone  
Samuel F. B. Morse  
William cooke

Alexander Graham Bell  
Guglielmo  
.1876  
Marconi

1760









1800

1831

1879

114

Thomas Edison

1882

DC

Charles Nikola Tesla

Steinmetz

1903 Charles Curtis

5000

Carnegie

William J. Bailey

1908

Steel Company

Irving Langmuir .

Tungsten Filament

1913

. 150 000

33

.1917 .

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. 1200

. Irving Moulthrop

Windmills

3

1

1925

Edgar

1931

100

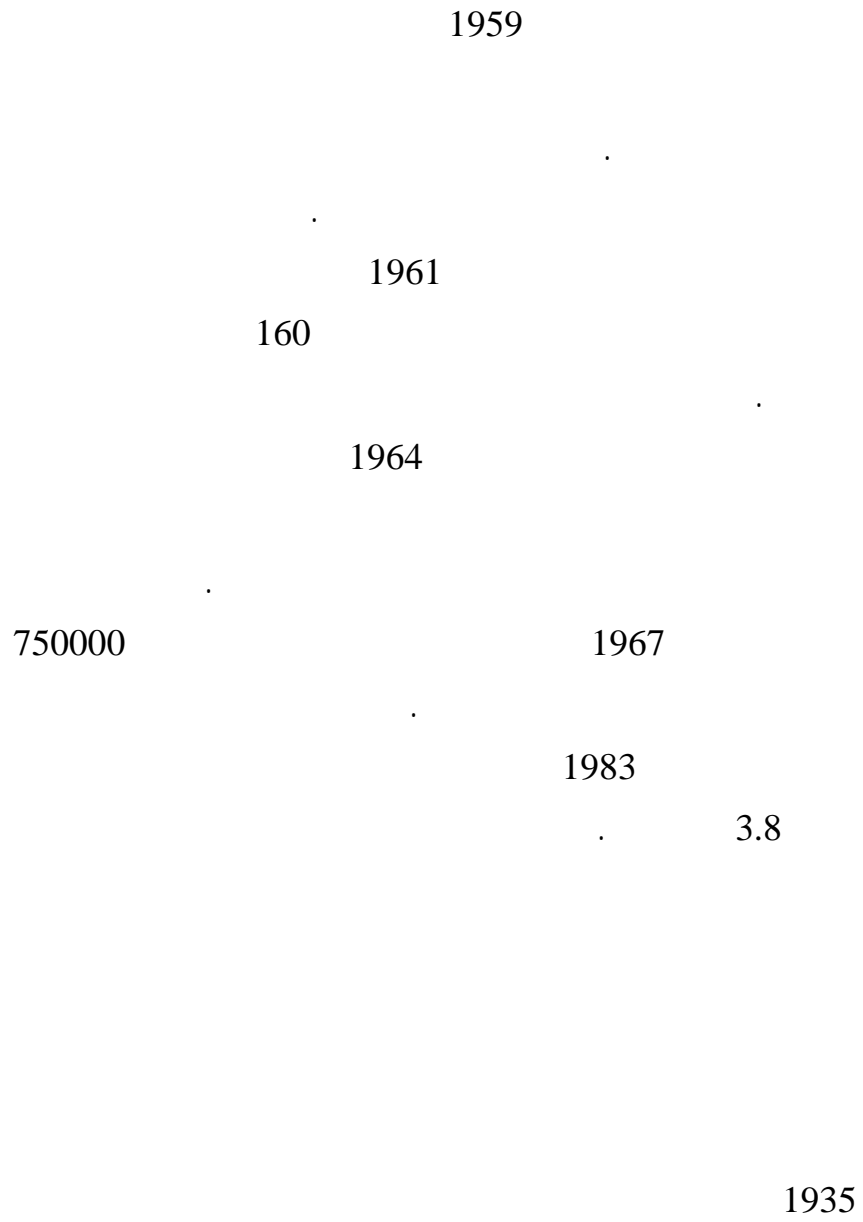
- 200000

1953

1955

Arco

Pitts Burgh



1897

John Ambrose Fleming

.1904 diode

Fleming Thomas Edison

Lee de Forest

1907

. (Triode )

1940

Russell ohl

BELL

Bell

1947

:

William B .

walt H .

B rattain

Jom Bardeen

Shockley

.1956

1952

Texas instruments

. 1954 transistor radio

Gordon Teal

1954

Jack

1959 – 1958

Robert Noyce

Kilby

Fairchild Semiconductor

1958

. integrated circuit



1959

. 1959

steven hofstein ,  
RCA

1962

Frederic Heiman  
/princeton New Jersey  
: (MOSFET)

The metal oxide semiconductor field effect transistor

1971

the

Intel

. 4004 bit Microprocessor  
60000

Stan Mazor, Ted

. Hoff , Frederico Faggin

IBM 1971

200

1998

BELL

1947

1885

1895

Wilhelm Konrod Roentgen

x

William Coolidge

X

1913

1900

. Kodak Brownie

150000

1913 William David Coolidge  
Hot cathode X Ray Tube

1913

Albert Soloman

3000

1927

Paul Langevin

Constantin Chilowsky

Hydrophone

1915

.1933 1931

Ernst Ruska

1935 Robert Watson Watt

John Randall Henry Boot

1939

Resonant-Cavity Magnetron  
Klystron

1940 M.I.T.

1943

1946

Russel Morgan

Edward Chamberlain

John W. Coltman

Rosalind Franklin

DNA

John

Max Perutz

Kendrew

( )

.1962

Hal Anger

.1958

Ian Dnoald

( ) 1959

Walter Tucker

Powell Richards

1960

Brookhaven

Technetium

1968

7

1973

Godfrey Hounsfield

Allan Cormack

1972

Tufts

CAN Scan

1979

1972

MRI

.CAT

MRI

Edward Purcell

Felix Bloch

Poul Lauterbur

1952

.Raymord Damadian

Gerd Binning

IBM

Heinrich Rohrer

.STM

1981

Christoph

Cal Quate

1986

AFM

Gerber

Ernst 1986  
Echo- (EPI) 1987  
Planar Imaging  
Peter EPI  
Mansfield  
.1977  
1993 MRI  
1990  
2000 1990



Albert Einstein

1917

James Gordon

Charles Townes

1954

(

) Herbert Zeiger

Maser

1951

Arthur Schawlow

1958

: Laser

(Light amplification by stimulated emission of radiation

( ) Ali Javan

Donald (William Bennett)  
1960 Herriot

Theodore Maiman  
( Hughes Research Laboratoeies )  
1960  
Gordan Gould

30  
Will Elias Snitzer  
1961 Hicks

1961  
) Charles Compbell  
) Harles Koester ( ( )  
MIT IBM  
1962  
CD

1963 Herberst Kroemer

) Charles Koo George Hockham  
( Standard Telecommunications

1966

Robert Peter Schultz Donald keck  
Maurer  
4 1972

1970

Paul O Conner John Machesney  
1973 ( )

1975

1977

1980

) David Payne

1987

(

1988

40000

(

) Emmanuel Desurvire

) Mears.P.J.

1991

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320000

1997

James Clerk Maxwell

Heinrich Hertz

133

Nikola Tesla

Guglielmo Marconi

1900

1901 Newfoundland  
Cornwall -

2000

John Ambrose Fleming

1904

Lee De

1906 Forest

Ronald Fessenden 1906

Massachusetts

. Audion.

1912

Edwin Howard Armstrong

Amplitude

.(AM)

Modulation

1917

.Pittsburg

KADA

1920

1925

John Logic Baird

Televisor

.Paul Nipkow

30

10

Charles F. Jenkins

( 21) Philo T. Farnsworth

1928 . 1927 .  
1929 .

) Vladimir Zworykin  
(1919

1933

FM

Frequency Modulation

AM

John Bardeen

1947 .

William Shockley

Watter Brattain

1954

. 22



1876      Alexander Graham Bell

1961      Fairchild Semiconductor

1958      Jack S-Kilby

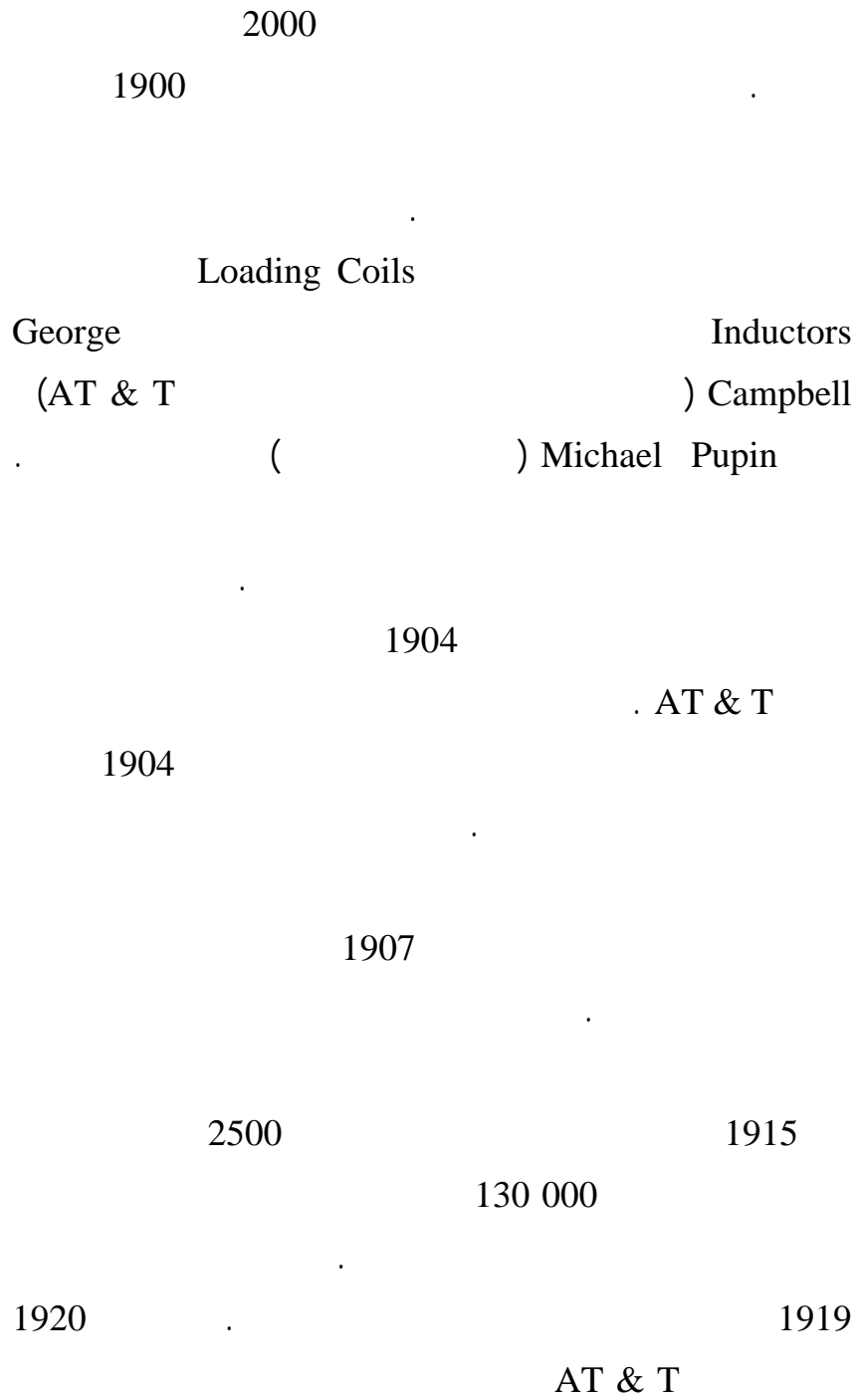
            Robert Noyce

            . Telstar

1996

1988

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) Martin Cooper

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1982

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.2000

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1900

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Willem Einthoven

1903

)Drinker Philip  
1927 Louis Agassiz

1924

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Albert S.

Hyman

Kouwenhoven

.1933

1945 Willem J. Kolff

1948

John Chanley

1951

Charles Hufnagel

1960

Oregon

Lowell Edward

Albert Starr

Paul M. Zoll

Cardiac

1952

Electrodyne

John H.

1953

.Pacemaker

(

) Gibson

Joseph E. Murray

1954

Wilson Greatbatch

1960

William Chardack

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18

1963

Francis L. Esperance

.Arthroscope

1971

. Drahoslav lim

Ott Wichterle

CAT

CT

1972

.X

Grame Clark 1978

cochlear

-

.MRI

1981

1982

Robert

:

. William Kolf

Don Olson

Jarvik

William Devries

112

.1985

Michel Mirowski

Alim Louis Benabid

1987

Grenoble

30000

1990

DNA



1901 H. Cecil Booth  
Earl Richardsan

1903  
1905  
1905      Albert Marsh  
) James Spangler  
1907      (  
Hoover  
General Elec      Frank Shailor  
Toaster      1909      tric  
Walker Brothers      1913  
Hotpoint  
Fred W. Wolf      .1930  
1927      Silex  
Joseph Myers  
John W. Hammes      1927  
John W. Chamberlain

J. Ross Moore

1935

1945

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.1978

1963

Electrolux

1997

1936

Claud Shannon

1939 ( ) George Stibits

Konrad Zuse

Zs

Clifford Berry

John Atanasoff

1939

(ABC)

John Mauchly

.ABC

1941

Colossus

1943

1945

John von

Briton Alan Turing

Neumann

John  
( ) Presper Eckert  
The Electronic (ENIAC) 1946  
. Numerical Integrator and Computer  
30 1500 6000 18000

. : (ADSAC)  
.1949 The Electronic Delay Storage Calculator  
. Maurice Wilkes

Universal : UNIVAC 1951  
Automatic Computer

J. Lyons & Company

. Lyons Electronic Office : LEO

) Grace Murray Hopper

(  
1952 (Mark)

Flow-Matic

. cobol

Reynold IBM

1995 Johnson

IBM 1957

FORTRAN john Backus

ALGOL -:

1958

1959 COBOL

.C/C++ PASCAL SOMULA

1960

PDP 1

1962 PDP1

MIT. Steve Russell

PDP8

Thomas Kurtz John Kemeny

BASIC 1964

1968

Douglas Engelbart  
Computer Mouse

1970 Xerox

WINDOWS

1973

1972

1973

(what you see is what you get) WYS/WYG

1974

Enthernet

1974

Altair 8800

Paul Allen

Bill Gates

Basic

2

Microsoft

1977

Apple II

RAM

Laptop  
 1981  
 MS-DOS  
 64  
 Apple  
 1984  
 Macintosh  
 .  
 CD-ROM  
 1984  
 James T.  
 .1970  
 Russell  
 .  
 450 ) 300000  
 .(  
 1985 .  
 . WINDOWS 1.0  
 . MS-DOS  
 WINDOWS 95 WINDOWS 3.0  
 . 1991 .



1962

M. I. Leonard Klein rock  
queuing networks T.  
Packet switching  
J.C. R. Licklider .technology

ARPA

DARPA

1964 Paul Baran  
Pentagon

1966  
M.I.T ) Larry Roberts  
ARPANET (

Donald Davies

1967

BBC

1968

( Bolt Beranek and new man, Inc. )

.( IMPs )

1969

ARPANET

1970

( )

.( NCP)Network Control Protocol

Kenneth Thompson

Dennis Ritchie

1970

1972

UNIX

BBN

Ray Tomlinson

e-mail

@

	1972	BBN	
1973			40
Vinton Cerf	BBN	Robert Kahn	
			Sussex
( TCP )			
		Transmission Control Protocol	
	IEEE		
			1975
	Larry Landweber		1977
		Theorynet	
	.Telenet		
		-	
. TCP			
	DARPA		1979
(Internet Configuration Control Board			
1980	DARPA		ICCB)
TCp/IP			

(Transmission Control / Protocol / Internet  
.Protocol )

NCF 1981

ARPANET DARPA

BBN

CSNET ARPANET Rand

.TCP/IP Telenet

.1983

TCP/IP

TCP/IP

Microsytems

1983

. Internet

Sun

1983

1984

IP

1985

.mil, com , org, edu.

NSF

1986

.TCP/IP

1987

NSFNET

1988

.TCP/ IP

1989

1.5

CERN

1991

.World Wide Web

1992

1995

.NSFNET

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1903

Knostantin Tsoikousky

Robert Goddard

1915

1926

1942

Wernher von Branun

. v -2 Rocket

1949

244

1957

Sputnik

. Sergei Korolev

184

98

1957

. laika

1958

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Explore

James A .van Allen

Iowa

1960

Tiros

270

42

9200

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1961

Yuri Gagarin

Alan B. Shepard

John Glen 1962

1963

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New Jersey Lakehurst

Edward H. White Jr. 1965

1968

Apollo

Frank Borman ,James A.

.Lovell , William A. Anders

1969 Nile Armstrong

1971

.Salyt 1

1973

.Skylab

1972

pioneer10

160



.1973  
 . Pioner II 1973  
 1974  
 26600  
 Pioner II .  
  
 Pioner 10 . Pioner I0  
 30 2002  
 Voyager1 1977 .  
 . , Voyager 2  
 Columbio 1981  
  
 1990 .  
 .Hubble Space Telescope  
 1998  
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1926

43

10000

1877

Nicholas Joseph Cugnot

Nicholaus Otto

Karl Benz      Daimler Gottlieb

Henry Ford

C. I. Horock

1901

1901

olds

425

1902

Iovis Renault

1908

William Durant

General Motors

1911

Charles Kettering

1912

.Cadillacs

1913

Ford Motor Company

.1914 300000 .

. 1914 Dodge .

1919

power

.1922

.1926 steering system

1934 Citroen .

1935 .

.1939

1940

Jeep

Karl Pabst

360000

) Ralph Teeter

(

1966

1985

Lincoln

.antilock braking system :(ABC)

120 12

15

1896

Samuel Pierpont Langley

1901

15

( ) Wilbur Orville Wright

59

852

1903

1905

Ludwig Prandtl

:

Eugene Ely 1910

1911

Lawrence Sperry

1914

Elmer

Hugo Junkers

1917

Junkers J4

1918

1919

Albert Brown

John Alcock

1926 1925

1927

Charles Lindbergh

3600

1928

Edwin A. Link

DC1

1933

Douglas

12

Arther Raymond

.TWA

1933

247

Boing

Robert Watson Watt

Jet engine

1937

Hans von Ohain

Frank Whittle

1939

Igor Sikorsky

VS-300 Helicopter

540

.1944

1949

Comet



B-52

Ritchard Whitcomb

Area Rule'

1963

Concorde

1976

2003

B-2

Northrop Grumman

F-117

Lockheed

1995

1996

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1902

Alferd Wolff

.1904

1906

) Willis Haviland Carrier

(

.Dew Point Control

.1902 Brooklyn

Edward Williams

70

1906

%50

Frederick Wittenmerier

Congress

1914

1916

Clarence Birdseye

1925

General Electric

1930

Freon

Frigidaire

.(1200 BTUH)

1932

1936

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1893

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470000 1904

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Garrett

1913

Morgan

Portland

1917

1930

1920

1932

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3000

1952

Chesapeake

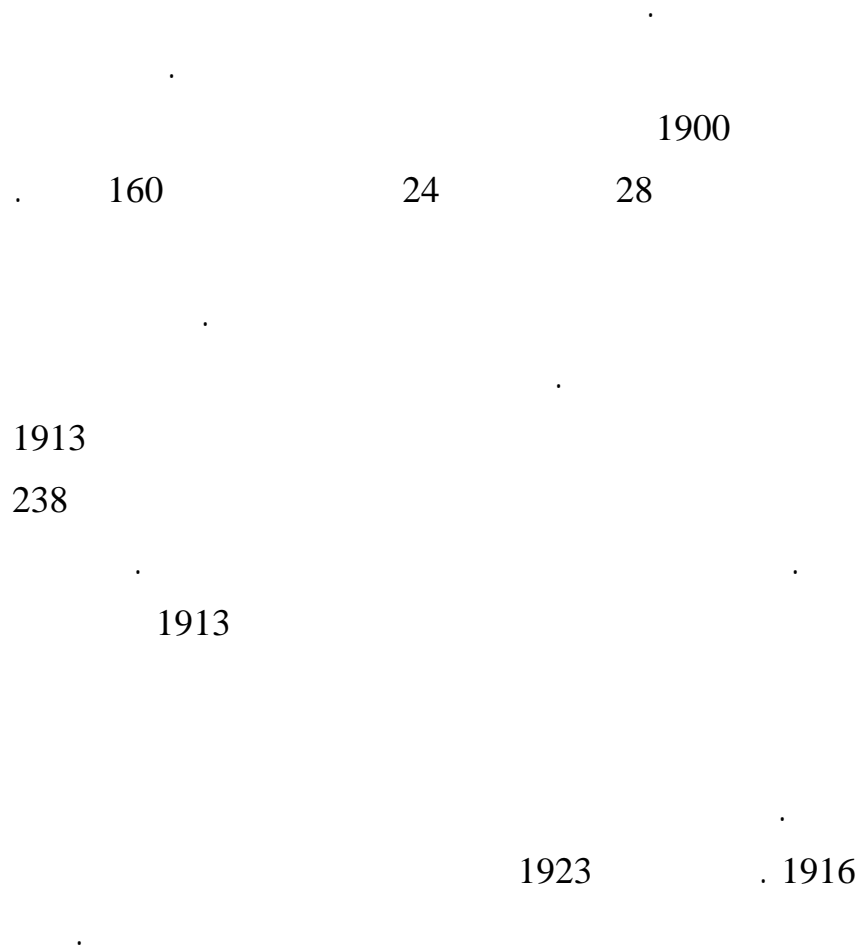
Elbert Dysart Botts

1965

1964

1987

Sunshine Skyway



Harrison Leonard Metcalf  
: ( ) p.Eddy  
American Sewerage  
. Practice ,Volume 1

92 1915

500 4

Abel Wolman

Linn H. Enslow

1930 Hardy Cross

1935



115

1937

19

580

1948

—

10

5,97

James Barnard

Ashok Gadgil

4

%3

1900

%38

Charles Parr

Charles Hart

) Benjamin Holt

1904 (

Henry Ford of Son Corporation .1906

Fordson

%50

Adolph Ronning Andrean

1915

Joseph Weigel

.1892 Iowan Charles C.Fenno

1921

1931

. 1932

Harry Fergwson

1938

1943

1948 Frank Zybach

1956 .

1966 .

1994

1859 Edwin Drak

1901  
 800000  
 65 1859 2000  
 .1901  
 Friedrich Bergius  
 1913  
 carl .  
 1926 Bosch  
 .  
 . 1931  
 William Burton  
 Standard )Robert Humphreys  
 . (Oil  
 .  
 .  
 Fischer- Tropsch Method

1940 1920

:

Polyvinyl Chloride

polystyrene

:

Polyethylene

Charles Kettering

T. A. Boyd

Thomas Midley

1921

1928

Louis Giliasso

Eugene Houdry

1936

1942

1947 Vladimir Haensel

1947 Kerrmegee

1955

500

Amsoil

Mobil Oil

)

183

(



Joseph John

Niels Bohr

Thomas

( )

)

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1905

Albert Einstein

$$E = mc^2 :$$

c

m

E:

1921

James Chadwick

Ernest

.1919

Rutherford

John Cockcroft

Ernest Walton

.1951

Van de Graaff

Westinghouse

Van

1937

5

. De Graaff

Fritz

Otto Hahn

1939

Strassmann

Otto Frisch

Lise Meitner

.Uranium

1945-1939

Manhattan

J. Robert

.Project

Oppenheimer

235

Enrico Fermi

1942

1945

1946

1951

BORAX-III

1955

.1957

.1962

1969

Chernobyl

1986

:

Leo Baekeland

1907

Bakelite

) Alfred Wilm

(

Precipitation Hardening

1913

( - ) Harry Brearley

)

(

Jesse  
1915  
Littleton  
Pyrex  
1925  
8/18  
%8  
%18  
%2  
) Wallace Carothers  
(  
Synthetic Rubber  
Neoprene  
Julian Hill  
Wallace Carothers  
Nylon

Rohm & Haas

Polymethyl Acrylate

1938

Roy Plunkett

Superalloys

Ferrites

Ceramic Magnet

Barium

)

1945

. Titanate

.

1952 s.Donald Stooky

1953 Karl Zeigler

1954

1.5

4800

Giullo Natta



- Titanium

-

1962

(NI-TI)Nickel

NI-TI

1964

Leslie Philips

Carbon Fiber

)"

(

Alan Macdiarmid,Hideki Shirakawa,Alan

Heeger,

(LEDS )Light –Emitting

Diodes

.2000

15

–

”

-9)

100 0.1

(10

1000

0.1

7000

0.2

Richard

1959

Feynman

IBM

1981

Scanning Tunneling

:( STM)

Microscope

STM

1990

IBM

Iconic

Xenon

Automatic Force Microscope ( AFM )

.( MRI)

60

1985

.(Buckyballs C60 ) Buckminsterfullerene

1991

100

DNA

Nano

Smart Bombs

Bullets

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