The birth of a new type of lithium battery

When did lithium-ion batteries become commercialized?
1991ushered the Second Period (commercialization) in the history of lithium-ion batteries,which is reflected as inflection points in the plots "The log number of publications about electrochemical powersources by year" and "The number of non-patent publications about lithium-ion batteries" shown on this page.

What is a lithium ion battery?
Learn more. The moment of truth: The lithium-ion battery is currently the predominant power source for mobile phones, laptop computers, and many other portable electronic devices, and is being used increasingly in electric vehicles.

Why did Jungner create a lithium ion battery?
In 1899 Jungner described the Ni/Cd cell, which had an active life in portable devices, but has now been mostly phased out because of its toxicity. The origins of the lithium-ion battery are intimately associated with the discovery and development of fast ion transport of ions in solids.

When did lithium ion batteries become popular?
The performance and capacity of lithium-ion batteries increased as development progressed. 1991: Sony and Asahi Kasei started commercial sale of the first rechargeable lithium-ion battery. The Japanese team that successfully commercialized the technology was led by Yoshio Nishi.

Who invented the lithium ion battery?
Its inventor,A. Yoshino,describes the process by which the lithium-ion battery was first developed (picture shows the first test-tube cell) and made commercially practical. Successful safety tests marked the turning point in this work.

When were rechargeable lithium batteries invented?
By exploiting this type of cathode materials,the first commercial rechargeable lithium batteries appeared in the late 1970s to early 1980s,one manufactured by the Exxon Company in the USA with a TiS 2 cathode and one by at that time Moli Energy in Canada with a MoS 2 cathode,both using liquid organic electrolytes.

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While lithium-ion batteries have come a long way in the past few years, especially when it comes to extending the life of a smartphone on full charge or how far an electric car can travel on a single charge, they"re not without their problems. The biggest concerns -- and major motivation for researchers and startups to focus on new battery technologies -- are related to ...

OverviewCommercialization in automotive applications: 2008-todayBefore lithium-ion: 1960-1975Precommercial development: 1974-1990Commercialization in portable applications: 1991-2007Marketo 2008: The launch of Tesla Roadster- the first highway legal, serial production, all-electric car to use lithium-ion battery cells, and the first production all-electric car to travel more than 244 miles (393 km) per charge- ushered a new era in the history of Li-ion batteries, which is signified as inflection points in the plots "The log number of publications about electrochemical powersources by year" and "The number of non-patent publications about lithium-ion batteries" shown on this ...

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The new battery concept is not intended for smartphones or electric cars, because the oxygen-ion battery only achieves about a third of the energy density that one is used to from lithium-ion batteries and runs at temperatures between 200 and 400 °C. The technology is, however, extremely interesting for storing energy.

The birth of the lithium-ion battery. The birth of the lithium-ion battery Angew Chem Int Ed Engl. 2012 Jun 11;51(24):5798-800. doi: 10.1002/anie.201105006. Epub 2012 Feb 28. Author Akira Yoshino 1 Affiliation 1 Yoshino Laboratory, Asahi Kasei ...

Note that they all have a lithium metal anode, with the first lithium-ion battery with a carbon anode dating to 1991 and the rocking chair concept (Michel Armand) dating to 1970. Electrochemical

These systems are actually concentration cells in which lithium ions "rock" across the electrodes, giving birth to a new type of system, called lithium rocking chair battery. ...

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nonaqueous.

Five years later, Akira Yoshino of Meijo University in Nagoya, Japan, made another swap. Instead of using reactive lithium metal as anode, he tried using a carbonaceous material, petroleum coke, which led to a ...

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rechargeable lithium batteries started in 1972 in the Corporate Labs of Exxon, within a group studying the impact of intercalating electron donors on the superconductivity of the layered ...

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