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Short Course Title

Display in Europe

Abstract

The story of Displays starts by the end of 19th century in Europe, with the invention of the Cathod Ray Tube by the German inventor Karl Ferdinand Braun in 1897. But just 9 years before, a new phenomenon was put in evidence by the Autrian botanist Friedrich Reinitzer. In 1888, he discovers the liquid crystalline nature of cholesterol. Liquid Cristal was then studied by the German physician Otto Lehmann. In 1911, the French professor of mineralogy, Charles-Victor Mauguin performs the first experimented with liquid crystals confined between two aligned polarizers. In 1927, the Russian Physician Vsevolod Frederiks put in evidence that under electrical field, the initial homogeneous state of a liquid crystal is oriented parallel to the external magnetic field.
The first European LCD factory was built in Switzerland in 1970 (Videlec), aiming to produce flat panel for watches. The Same year, Martin Schadt and Wolfgang Helfrich invented the twisted nematic field effect (TN-effect) in the Central Research Laboratories of F. Hoffmann-La Roche Ltd, in Basel, also in Switzerland. The first pilot plant for AMLCD production was established at Moirans in 1990 (THOMSON) near Grenoble, in France. In 1991, PHILIPS (With the JV FPD) establishes a mass-production facility near Eindhoven. But European capacity was not sufficient, manufacturing shift to Asia in 1999, with the creation of LG-PHILIPS.
Novaday, Europe dominate the LCD material domain with MERCK, and a lot of actors are leaders in their domains, such as Flexenable in flexible LCD, Eldim and Instrument System in LCD measurement, MicroOled in OLEDs µimagers, Novaled in OLED materials, Thales Avionics for cockpit displays system, OSRAM for LED devices and materials, and a lot of other companies more.
In term of journal publications, European University and research center are very active, just behind US, but after Asia. At Display week, European participation was about 14% of the oral paper.
Future research in Display are also very promising, in particular for micro-LEDs, with leading actors such as CEA LETI, ALEDIA, PLESSEY. And new actors are emerging such as BODLE with their solid state reflective displays, or CANATU with thein carbon nanobuds.

Speaker Biography

Philippe Coni graduated from ENISE in 1986 (National Engineer School of St Etienne, France), is specialized in avionics display and he works as Display Expert at the Cockpit Centre of Competence at THALES Avionics / Mérignac – France.
Since 1988, he joined THOMSON (Now THALES) and he was in charge of the development more than 20 avionics displays and system (Including RAFALE Cockpit Displays, Airbus Helicopter Cockpit Displays). He is the author of 18 international publications (SAE, IEEE, SID) in the frame of touchscreen, displays technologies and optics and he is the inventor of more than 30 patents.
He is teaching Displays technology at the Optical Institute Graduate School (Also known as Sup Optique).

He gets one Distinguished paper from the Society of Information Display (SID) in 2017.
He is reviewer for the Journal of SID (JSID), and member of the technical committee of the SID.
Since 2018, he is the Chairman of the European Program Committee of the SID and member of the Executive Committee of the SID.
His skill domains are Touchscreen technologies, Interaction means, Haptics displays, 3D head up displays.