Edwin Rynveld
(1953–)

Gabi Rynveld
(1965–)

By Dick Olsher

AS ONE OF THE MAJOR innovators in the high-end cable arena, Edwin Rynveld brings to bear both a passion for music and the requisite electronic engineering skills. He has arguably done more than anyone else to advance audio cable design during the past 30 years. As a result, Siltech has established a preeminent position in silver-gold alloy and monocrystal silver metallurgy for audio cables and has steadily explored and improved all aspects of cable design. Together with his wife and business partner Gabi, he has built one of high-end audio's most venerable companies.

The Absolute Sound's High-End Audio **Hall of Fame** 2024's Inductees

Edwin was raised in Canada and Holland. He displayed an enthusiasm for both music and electronics at a fairly young age, playing bass guitar in a high-school band and building amplifiers and speakers along the way. After completing a university degree in electrical engineering, he worked for Philips and Exxon, as well as an audio consultant during the 1980s for various high-end audio companies, including Siltech. In 1992 he made the decision to purchase Siltech and thus embarked on a sustained wave of innovation.

Edwin's other momentous decision was to marry Gabi Rynveld. Their marriage has been sustained not only by love but also by a mutual passion for music as they worked as a team to build the company. It's fair to say that while Edwin is the technical intellect behind the company, Gabi brings the musical aesthetic that has helped elevate Siltech to international prominence. Growing up in Hungary, Gabi toured the world as a piano prodigy from the age of nine and played with major orchestras and conductors. She is never too far from her beautiful Bösendorfer piano at home. In 2004 Gabi founded Crystal Cable as a "feminine" alternative to the muscular Siltech designs, using silver-gold alloy and a pure silver monocrystal core with outer layers of silver-plated monocrystal copper and gold-plated monocrystal silver. International Audio Holding (IAH), of which Edwin is CEO, is home to the

Siltech, Crystal Cable, and HMS Elektronik brands. IAH's mission is to develop and produce high-quality audio cables, electronics, and loudspeakers, which are now sold in more than 50 countries worldwide.

It should be noted that Edwin Rynveld is also a composing talent, rather unique for an audio engineer. His piano concerto titled "Love by the Sea" is inspired "by the waves of the sea and everything that we do in our daily life." A recording of the concerto at the Megaron concert hall in Athens with Gabi Rynveld on piano and the Athens State Orchestra, Andreas Tselikas conducting, was recently released on Fifth Force Records. It is available on most streaming services in 24-bit/96kHz.

In engineering terms, a cable's behavior is a function of its lumped electrical parameters: resistance (R), inductance (L), and capacitance (C). These parameters are ordained by the cable's conductivity, dielectric materials and topology (such as conductor wire gauge), the number of strands, and the spacing between strands. Conventional wisdom in the 1980s ascribed all sonic differences strictly to a cable's RLC electrical parameters, which is about as absurd as trying to divine a person's character from his weight, height, and rectal temperature. Perceptual attributes such as timbre have to be judged subjectively. And the fact that the ear must be the final arbiter in all things musical has not been lost at Siltech. Extensive listening sessions are routinely used in voicing a product.

Rynveld was able to go beyond the conventional RLC engineering paradigm and focus most intensely on the conductor's metallurgical properties: "As a specialized electronics engineer, I was very curious to know how cables create audible differences in sound. Step by step the mysteries unraveled." Armed with a high-tech lab and an analog measuring system capable of –150dB resolution relative to the primary signal, Edwin was able to obtain key answers using better measurements and multi-physics simulations, which allow the combined effects of material and construction properties to be visualized prior to production.

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High-purity silver wire is clearly a phenomenon of the high-end audio scene, and no one had taken silver more seriously than Siltech Cables, the home of Silver Technology. When it was founded in 1983 silver became the focus of attention by virtue of its superior conductivity, chemical stability, and ability to maintain its crystalline integrity when subjected to mechanical stress. Siltech's first-generation cables (G1) used 99.99% pure solid-silver wire.

Rynveld's core principles kept driving product development over the decades to follow. These are in a nutshell: "Never think you're finished; in high-end audio there is no limit to quality. Keep comparing listening results with live music—it resets your hi-fi memory (by hi-fi memory, I mean getting used to errors by repeated listening). Keep innovating, never underestimate your competitors, and try harder to keep on top. Keep searching for new technologies and materials; material science develops fast. Make products that are practical, strong, and flexible so that the sound quality doesn't deteriorate over time. Use the best available materials." It is no surprise that innovation became commonplace at Siltech.

In 1988, second-generation G2 silver was introduced to the Siltech range, featuring a longer crystal length, which reduced the number of gaps between silver crystals and improved the electrical and sonic characteristics of the wire. By 1993, some models featured additional 24k gold wires in combination with the existing silver ones. These products included "Gold" in the model's name, sometimes by percentage such as FTM-4 Gold 17% gold. Gold is even more malleable and ductile than silver, and even more resistant to damage under mechanical stress.

Research continued to be laser focused on conductor materials, a critical cable component. By analyzing magnetic and electric crystal barrier properties Siltech's engineering group found that contaminants of certain metals have a profound effect on musical performance. While large quantities of certain materials can be rather benign, even tiny amounts of others can be detrimental to sound quality. Because its silver supply was a secondary product of gold mining, it became clear that gold inclusions in refined silver improved sound quality. This motivated research on silver-gold alloys. Gold is included in small quantities in a silver-gold alloy, its main purpose being to reduce contaminants such as oxygen at crystal grain boundaries. The gold atoms naturally displace contaminant particles and fill any voids in the silver crystal matrix. The payoff is reduced time smearing of the signal, preservation of low-level detail, and improved cable flexibility and longevity.

The first true silver-gold-alloy-based cable (G3) was released in 1997 with the launch of the first SQ Classic range. Boundary distortion was significantly reduced to 20% of the original. The process was later refined to lessen boundary distortion to 10% and formed the basis of the Classic Legend conductors used today.

The fourth-generation (G4) metallurgy was a special silver-gold alloy used for recording-studio cables where mechanical strength is very important. G5 was introduced in 2000, as a higher-purity conductor for a new Signature Series. It was a further refinement of the melting process that reduced boundary errors to less than 1%. G5 became the core conductor of the Classic MK2 Series, the successor of the original Classic range.

In 2003, G6 saw a further boundary error reduction to about 0.1%, assisted by a new thermal treatment process that increases conductivity by annealing the metal alloy at high temperatures. A high-current pulse was used for this purpose, sufficient to improve the metallic matrix while avoiding insulator damage. This alloy was used for the Royal Signature products.

G7 was developed in 2008, further refining Siltech metallurgy and reducing grid boundary errors to 0.03%. G7 was used for the Classic Anniversary and most Royal Signature products.

G9, the latest silver-gold alloy generation, benefits from all the recent developments and improvements in the melting process and achieves a boundary distortion of only 0.01%. G9 is used in the Classic Legend Series that was launched in 2021.

The current top-of-the-line conductor material consists of solid-core monocrystal silver and is referred to as 10th generation, code-named S10. Siltech believes S10 monocrystal silver to be the finest audio cable conductor ever developed and can back that up not only with measurements but also with the findings of their listening team and feedback from music lovers worldwide. "Monocrystal" means one long continuous crystal of the silver conductor from one end of the cable to the other. This technology results in the highest possible material purity as crystal boundary effects are essentially eliminated. S10 is used in Siltech's crowning achievement, the Master Crown series, as well as the Royal Crown series, the successor to the award-winning Royal Signature series. In particular, the flagship Master Crown cable series is as good as it gets.

FOR THE PAST THREE DECADES, EDWIN AND GABI HAVE SIGNIFICANTLY ADVANCED THE STATE OF THE ART.

Copper is not completely absent from Siltech's product lineup. The entry-level Explorer line is the only series that uses copper as a conductor and aims for maximum performance at its price point. Siltech's 6N monocrystal copper is the result of extensive research and testing and boasts excellent conductivity.

Other critical aspects of cable construction have received much attention. As far as dielectrics, Siltech has used Teflon and air insulation and has also pioneered the use of DuPont™ Kapton® polyimide film often found in loudspeaker voice-coil formers. For example, the Master Crown interconnect uses a combination of Kapton, Teflon, natural silk, and air insulation.

Many of the high-performance cables are manufactured by hand from individual conductors. Specialized equipment is used along with experienced operators to ensure proper twist rate and geometrical consistency along the entire length of the cable. Shielding against RFI and EMI is considered critical in an age when electro-magnetic pollution in a typical home is quite significant. Unshielded cables can act as a pickup antenna for RFI and EMI. Hence, all Siltech cables are shielded. They feature a large diameter to not only allow the use of a thick outer sleeve but also to make the shield most effective by maximizing the distance between shields and conductors. The payoff is an extremely low noise floor that permits the music to bloom with all its nuances fully intact.

Edwin Rynveld's inquisitive mind has touched upon every aspect of audio cable design, and Gabi Rynveld's musical and aesthetic sensibilities has guided the company to its current preeminent position in the industry. For the past three decades, Edwin and Gabi have significantly advanced the state of the art through their passionate pursuit of excellence. It's for that very reason that we are delighted to welcome them to *The Absolute Sound*'s High-End Audio Hall of Fame.

PREVIOUS INDUCTEES

William Zane Johnson, (1926–2011)
Paul Wilbur Klipsch, (1904–2002)
Henry Esplin Kloss, (1929–2002)
Hiroyasu Kondo, (1941–2006)
Saul B. Marantz, (1911–1997)
Frank H. McIntosh, (1906–1990)
Jim Thiel, (1947–2009)
Julian Vereker, (1945–2000)
Edgar Villchur, (1917–2011)
Peter Walker, (1916–2003)
Mark Levinson, (b. 1946)
Arnie Nudell, (1937–2017)
Harry Pearson, (1937–2014)
Ivor Tiefenbrun, (b. 1946)
Jim Winey, (1934–2024)
Alan Blumlein, (1903–1942)
Doug Sax, (1934–2024)
J. Robert Stuart, (b. 1948)
Atasushi Miura, (1934–2022)
David Wilson, (1944–2018)
Sidney Harman, (1918–2011)
J. Gordon Holt, (1930–2009)
Masaru Ibuka, (1908–1997)
Akio Morita, (1921–1999)
John Bowers, (1923–1987)
Raymond Cooke, (1925–1995)
Richard Vandersteen, (b. 1950)
Robert Carver, (b. 1943)
Nelson Pass, (b. 1951)
Dan D'Agostino, (b. 1947)
Keith Johnson, (b. 1938)
Arthur Janszen, (1907–1991)
John Curl, (b. 1946)
Joe Grado, (1924–2015)
Peter Suchy, (b.1945)
Jacques Mahul, (b. 1949)
Gayle Martin Sanders, (b. 1947)
Siegfried Linkwitz, (1935–2018)
Alon Wolf, (b. 1964)
Jürgen Reis, (b. 1961)
Bill Conrad, (b. 1946)
Lew Johnson, (b. 1944)
Paul Barton, (b. 1951)
Andrew Payor, (b. 1959)
David Hafler, (1919–2003)
Armando (A.J.) Conti, (1957–2016)
Andrew Jones, (b. 1956)
Bernie Grundman, (b. 1943)