

June 15, 2020



## **Resonant's Director of Engineering Dr. Victor Plessky Awarded the 2020 C.B. Sawyer Memorial Award**

GOLETA, Calif., June 15, 2020 (GLOBE NEWSWIRE) -- Resonant Inc. (NASDAQ: RESN), a leader in transforming the way radio frequency, or RF, front-ends are being designed and delivered for mobile handset and wireless devices, announced today that Dr. Victor Plessky, Director of Engineering, was awarded the prestigious C. B. Sawyer Memorial Award for 2020 by the IEEE International Frequency Control Symposium. The award recognizes outstanding contributions in the development, production or characterization of resonator materials or structures.

Dr. Plessky, who has been working with Resonant since the company's inception, originally consulting for the company before Resonant acquired his company, GVR Trade SA in 2016, was recognized for pioneering contributions to the development of Surface Acoustic Wave (SAW) and micro-acoustic devices, including the prediction of Surface Transverse Waves (STW), the theory of the "leaky" SAW in periodic structures (i.e., the "Plessky equation"), and most recently, the invention of XBAR®.

"We are extremely proud of Victor and his invaluable contributions to acoustic wave devices and ultimately to the RF front-end industry as recognized by this award," stated George B. Holmes, Chairman and CEO of Resonant. "His 'Layers' software was foundational for Resonant's Infinite Synthesized Networks® (ISN®) design platform. The Full Finite Element Modelling Software of Acoustic Wave filters using only materials properties and physical dimensions incorporated into ISN provides an accurate simulation of measured filter performance."

Resonant's XBAR technology is the latest innovation leveraging its ISN platform. Accuracy of the model allowed Resonant to develop the optimal resonator structure and subsequently filters derived from these fundamental building blocks, for the new requirements of wide bandwidth and high frequency for 5G and WiFi, for which Victor's contributions have been instrumental.

Dr. Plessky will be presented with his award on July 20, 2020, at the IEEE IFCS ISAF 2020, a virtual joint conference of the IEEE International Frequency Control Symposium and IEEE International Symposium on Applications of Ferroelectrics. Prior award winners include Warren P. Mason, who won the award in 1966 for his contributions in quartz crystal devices, particularly in the field of frequency selection and Rich Ruby, who won the award in 2010 for the development of high-Q, miniature FBAR resonators, a groundbreaking BAW technology for 4G and a predecessor of the XBAR technology that was developed specifically to meet the exacting demands of 5G. The full list of prior award recipients can be accessed at <https://ieee-uffc.org/awards/frequency-control-awards/sawyer-award/>.

Dr. Plessky has co-authored multiple technical articles during his time working with Resonant. Here are some of those selected works:

- [5 GHz laterally-excited bulk-wave resonators \(XBARs\) based on thin platelets of lithium niobite](#) – January 2019 ([Nov. 2018 online version](#))
- [5GHz Band n79 wideband microacoustic filter using thin Lithium Niobate membrane](#)– October 2019
- [Analysis of XBAR resonance and higher order spurious modes](#)– October 2019
- [Laterally excited bulk wave resonators \(XBARs\) based on thin Lithium Niobate platelet for 5GHz and 13 GHz filters](#) – June 2019
- [Acoustic Radiation from Ends of IDT in Synchronous LSAW Resonators](#)– September 2017
- [FEM modeling of an entire 5-IDT CRF/DMS filter](#)– September 2017

For more information on the importance of RF filters in reaching the maximum 5G throughput and the true promise of 5G, please visit <https://www.resonant.com/news-resources/5gwave2>.

#### **About Resonant Inc.**

Resonant (NASDAQ: RESN) is transforming the market for RF front-ends (RFFE) by disrupting the RFFE supply chain through the delivery of solutions that leverage our Infinite Synthesized Network (ISN) software tools platform, capitalize on the breadth of our IP portfolio, and are delivered through our services offerings. In a market that is critically constrained by limited designers, tools and capacity, Resonant addresses these critical problems by providing customers with ever increasing design efficiency, reduced time to market and lower unit costs. Customers leverage Resonant's disruptive capabilities to design cutting edge filters and modules, while capitalizing on the added stability of a diverse supply chain through Resonant's fabless ecosystem-the first of its kind. Working with Resonant, customers enhance the connectivity of current mobile devices, while preparing for the demands of emerging 5G applications.

To learn more about Resonant, view the series of videos published on its website that explain Resonant's technologies and market positioning:

- [Resonant Corporate Video](#)
- [ISN and XBAR: Speeding the Transition to 5G](#)
- [Infinite Synthesized Networks, ISN Explained](#)
- [What is an RF Filter?](#)
- [RF Filter Innovation](#)
- [Transforming the Mobile Filter Supply Chain](#)

For more information, please visit [www.resonant.com](http://www.resonant.com).

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### **About Resonant's ISN® Technology**

Resonant can create designs for difficult bands, modules and other complex RF Front End requirements that we believe have the potential to be manufactured for less cost and less time than traditional approaches. ISN is a suite of proprietary mathematical methods, software design tools and network synthesis techniques that enable us to explore a much larger set of possible design solutions that regularly incorporate our proprietary technology. We then quickly deliver design simulations to our customers, which they manufacture or have manufactured by one of our foundry partners. These improved solutions still use Surface Acoustic Wave (SAW) or Temperature Compensated Surface Acoustic Wave (TC-SAW) manufacturing methods and perform as well as those using higher cost manufacturing methods such as Bulk Acoustic Wave (BAW). Resonant's method delivers excellent predictability, enabling achievement of the desired product performance in roughly half as many turns through the fab. In addition, because Resonant's models are fundamental, integration with its foundry and fab customers is seamless because its models speak the "fab language" of basic material properties and dimensions.

### **Investor Relations Contact:**

Moriah Shilton, [LHA Investor Relations](#), 1-415-433-3777, [RESN@lhai.com](mailto:RESN@lhai.com)



Source: Resonant Inc.