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Thin EP steerable catheters with improving performance

Application of EP (Electro Physiology) catheters for diagnostics and ablation of cardiac arrhythmias becomes more and more widespread. Many manufactures produce such catheters. Unfortunately, efficacy of EP catheters technology is still far from desirable. We have analyzed main weak points of all EP catheters available on the market. There were revealed three important obstacles of present EP devices. First, operators forced to use both hands to manipulate catheters during procedure. For example, operators use second hand to fix every chosen curve position and do it many times during every procedure. We have changed usual handle design by implementation of auto-lock mechanism. New handle design provides for operator possibility to use only one hand during whole procedure. Second, almost all existing EP catheters have steering problems. Most sensitive is steering not within one plane, like snaking or twisting. It is happening because of some design issues of distal shaft. Our new unique distal shaft design makes catheters steering very predictable exactly within one plane. Third, many applications need smaller diameter of EP catheters. Available on the market EP steerable catheters have minimal diameter by 5F only, that is not enough thin for many cases. We made design of very thin steerable catheters up to 2F that is enough for all cardiac applications even for child patients. So, we suppose that modern EP steerable catheter should be with auto-lock handle, with in-plane steering distal shaft and with small diameters up to 2F.

Biography

Anatoly Ryzhikh got his PhD degree in Biomedical Electronics at Moscow Engineering Physics Institute (Technical University) in 1995 for the design of Implantable Pacemaker for Cardiomyoplasty (active auto-muscle heart circulation support), also he has his own design of abdominal auto-muscle circulation assist device, diagnostics external pacemakers, diagnostic and therapeutic electrophysiological catheters, patch holters hardware and software. He worked as an associate professor at Moscow State Engineering Physics during the period of 1994-2007. Later he assigned as a CEO of Dutch Stimulators Ltd in Russia. And now he is the CEO and President of Tyche MedTech Inc., USA. His main research area includes Circulation assist device, Diagnostics external pacemakers, Electrophysiological catheters, and Patch holters.

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