中国中车
CRRC

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价值 创新 未来
VALUE INNOVATION FUTURE

中车青岛四方车辆研究所有限公司
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2016

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VALUE INNOVATION FUTURE

为轨道交通提供关键系统解决方案
PROVIDING KEY SYSTEM SOLUTIONS FOR RAIL TRANSIT

董事长兼总经理
刘保明
Chairman & General manager
Liu Baoming

我们，
是一家应用技术服务商，
1959年成立，
铁道车辆专业研究所。

We,
An applied technology service provider,
Founded in 1959,
A rolling stock professional research institute.

建所初期生产车间
Production workshop when SRI founded

四方所总部 SRI headquarter

四研产业园 Industrial zone of SRI

中车四方所
——竭诚为社会提供
最有价值的轨道交通关键系统产品

CRRC SRI
--Dedicated to providing most valuable key rail transit system products to the society

凭借多年积累的技术研发与成果转化方法，
四方所始终站在行业技术发展的最前沿，
开展行业技术基础研究，
并快速将新技术转化为产品应用，服务轨道交通领域。

With years of accumulated technologic R&D and achievement transformation methods, SRI is always standing on the cutting -edge position in the industry's technologic development to implement the fundamental research of industry technologies, rapidly convert new technologies to product applications, and serve the rail transit field.

目录 CATALOG

VALUABLE ENTERPRISE
价值企业

从成立之初，
四方所就致力于成为行业内最具价值企业，
为我们的用户提供技术、产品与服务，
并通过我们的服务，带来价值增值。

Ever since its founding,
SRI is committed to becoming a most valuable enterprise model in the industry,
Providing technologic, products, services to our users,
And bringing about added value with our services.

行业价值
Industry value

为铁道车辆和城市轨道车辆
承担行业标准制定与管理。
以行业发展的责任，
创新技术研发、行业检验与产品制造，
不断推动行业技术进步。

Undertaking the establishment and management of industry standards for rolling stock and urban railway vehicles
With the responsibility of industry development,
Innovating technologic research, industry inspection,
and product manufacturing,
Continuously driving the industry's technologic progress.

国家科学技术进步特等奖
Grand prize of National Science & Technology Progress Award

国家认定企业技术中心
National-recognized enterprise technology center

为促进中国高铁技术逐步实现
“谱系化、智能化、绿色化”这一目标的顺利实现，
在国家科技部的引领下，四方所与国内高速动车组主要研发单位，
联合发起成立了高速列车产业技术创新战略联盟，引领行业技术创新。

In order to promote the smooth achievement of the goal "lineage, Intelligent, Green" for Chinese high-speed railway,
SRI has jointly established with other domestic R&D institutions of high-speed EMU, under the lead of Ministry of Science and Technology of PRC,
So as to lead the industry technology innovation of high-speed trains.


中国专利优秀奖
China's patent excellence award


安全生产标准化一级企业
Class I production safety standardization enterprise


IRIS认证
IRIS certified


法铁认证
SNCF certified


德铁认证
DB certified


铁道车辆、轨道交通车辆的标准起草与归口单位
We are responsible for the drafting and management of Industrial Standards for rolling stock and urban rail vehicles.


编辑出版的《铁道车辆》、《国外铁道车辆》
Railway Rolling Stock and Foreign Railway Rolling Stock edited and published by SRI


编辑出版的《机车车辆标准汇编》
Locomotive and rolling stock standard edited and published by SRI

价值企业 VALUABLE ENTERPRISE


1960年，参与中国第一列双层客车研发试验
SRI took part in R&D and testing of China's first double-deck passenger train in 1960.


1965年，参与北京第一辆地铁车辆研制
SRI took part in R&D of Beijing's first metro vehicle in 1965.


1980年，编制起草中国铁路第一部铁道车辆整车标准《客车通用技术条件》的编制起草。
SRI drafted the General Technical Specification for Passenger Trains, the China's first rolling stock standard, in 1980.

SRI


1997年开始，自主开发的电气、减振、钩缓、制动等技术与产品在中国铁路客车六次大提速中全面装车运用并发挥重要作用。
Since 1997, SRI's independently developed technologies and products, including electrical, vibration absorption, coupler and draft gear, and brake, were comprehensively applied and played a significant role in the six big speed increases of China's train


2001年，承担城轨列车制动系统国产化任务。
SRI undertook the brake system localization task for city rail trains in 2001.


2015年，电气、减振、钩缓等技术与产品在中国标准动车组装车运行。
SRI's technologies and products, including electric, vibration absorption, and coupler and draft gear, were equipped on China's standard motor train units in 2015.


2012年，承担中国标准动车组关键系统技术的自主创新。
SRI undertook the independent innovation task for key system technologies of China's standard motor train units in 2012.


2011年以来，自主创新电气系统、减振系统、钩缓系统成功装备京沪高铁、哈大高寒动车组等高铁线路，并提供可靠维护装备。
SRI's independently innovated electric system, vibration absorption system, and coupler and draft gear system were successfully equipped on high-speed railway lines, including Beijing-Shanghai high-speed railway and Harbin-Dalian high-cold motor train unit, and SRI also supplied reliable ground maintenance equipment since 2011.


2010年，承担跨座式列车牵引系统国产化与网络控制国产化任务。
SRI undertook the traction system localization and network control localization task for straddling trains in 2010.


2005年6月，为青藏列车供氧系统提供解决方案及全部南车电气设备，在世界上首次解决了高海拔车载制氧技术和电气技术应用的难题，被授予国家科学技术进步奖特等奖。
SRI supplied the oxygen supply system solution and all passenger train electric equipment for Qinghai-Tibet train in June, 2005, which solved the high-altitude train oxygen production technology and electric technology application difficulties for the first time in the world and were honored with the special award of Grand prize of National's Science & Technology Progress Award.


2004年，四方车辆研究所承担了中国动车组关键技术与核心产品的技术对接，逐步成为铁路关键系统技术与产品的重要提供者。
SRI undertook the technologic interfacing for key technologies and core supporting products of China's motor train unit in 2004, gradually becoming one key provider for key railway system technologies and products.

电气技术
Electrical Technologies

承担列车电气系统的技术管理、规范制定、系统设计与关键产品制造；

先后开展电力机车向客车供电技术、空调客车供电技术、发电车AC380V供电制式的研究；

为25T型列车提供DC600V列车供电与网络控制系统、无线传输系统、充电机等产品；

世界上首创了安全可靠的高原铁路客车电气系统和技术，填补了世界高原铁路客车电气技术的空白；

近年完成了高速动车与城轨地铁牵引供电、牵引变流、网络控制、旅客信息等关键系统技术与产品的开发研制。

SRI undertook the technical management, specification establishment, system design, and key product manufacturing for train electric system.

SRI implemented in succession the research on the power supply technology from electric locomotive to passenger train, the power supply technology of air conditioning passenger vehicle, and the AC380V power supply system of power-generating vehicle.

SRI supplied the products, including DC600V train power supply and network control system, wireless transmission system, and charger, to 25T train.

SRI pioneered safe and reliable electric system and technologies for highland railway passenger train in the world, filling the electric technology blank of world's highland railway passenger train.

SRI completed the development of key system technologies and products, including traction power supply, traction current transformation, network control, and passenger information, for high-speed EMU and urban rail in recent years.

制动技术
Brake Technologies

轨道车辆制动技术研究、产品开发和行业标准起草、制定的主要单位，研发的制动产品广泛应用在我国机车、客车、货车和城市轨道交通车辆上。

先后主持完成了各代客、货车空气制动机、机车电空制动机、地铁列车空气制动机以及制动系统关键部件的研制开发。

完成城市轨道交通车辆、大功率机车和高速动车组制动系统的国产化研制。

掌握了高速动车组和大功率机车的制动控制、防滑控制、网络通讯和大功率盘形基础制动的核心技术。

SRI is one main organization for the research of brake technologies, development of brake products, and drafting and establishment of brake industry standards for rolling stock; and its developed brake products are extensively applied on the China's locomotives, passenger vehicles, freight vehicles, and urban rail transit vehicles.

SRI led to complete in succession the research and development for the passenger/freight vehicle air brake, locomotive electro-pneumatic brake, and subway train air brake of all generations and for the key parts of the brake system.

SRI completed the brake system localization research for urban rail transit vehicles, high-power locomotive, and high-speed motor train unit.

SRI mastered the core technologies of brake control, anti-skid control, network communication, and high-power disc fundamental brake for high-speed motor train unit and high-power locomotive.

减振技术
Anti-vibration Technologies

致力于轨道车辆减振领域的技术研究与产品开发，
早在60年代中期就开始进行空气弹簧的研究，
承担了新型转向架空气弹簧悬挂系统的设计和研制，
提出了空气弹簧悬挂系统的设计计算方法。

采用了弹性支承系统和可调阻尼式节流阀的空气弹簧
先后装用于提速、准高速、高速客车和动车组；

自主设计研发的无摇枕空气弹簧用于高速列车、动车组
和地铁等城轨车辆，并进入国际市场。

为汽车减振与轨道减振提供技术与产品。

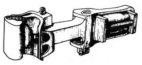
SRI is always dedicated to the technologic research and product development in the vibration absorption field of rolling stock. As early as in the middle of 1960s, SRI started the research of air spring, undertook the design and research of new bogie air spring suspension system, and advanced the design calculation method of air spring suspension system.

The air springs with elastic support system and adjustable damping type throttle valve were applied in succession on the speed-up, quasi-high-speed, and high-speed passenger trains and EMUs.

The bolster-free type air springs designed and developed independently by SRI were applied on the high-speed trains, motor train units, and urban rail vehicles (such as subway) and entered into international market.

SRI supplied technologies and products for automobile vibration absorption and rail vibration absorption.

钩缓技术
Coupler and Draft Gear Technologies



四方所承担了国内各型列车车钩历代设计研发。

承担从第1代客、货车主型车钩到今天的技术产品选型、设计与自主研发制造任务；

开发各型客车、高速动车、动车组、城轨及地铁列车用密接式车钩缓冲装置，技术达到国际先进水平。

主持了多型客车与机车缓冲器研发设计制造。

SRI undertook the design and research for domestic train couplers of all generations in diversified types.

SRI undertook the type choice, design, and independent R&D and manufacturing of the technologic products from the 1st generation passenger/freight train main type couplers to the couplers nowadays.

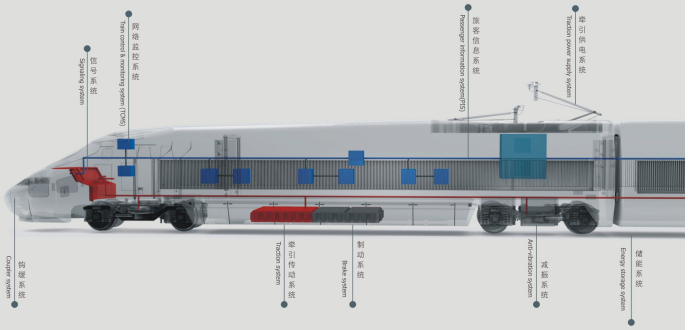
SRI has developed the tight-lock coupler and draft gear for passenger trains, high-speed EMU, EMUs, urban rail trains, and subway trains of diversified types, with the technologies in line with international advanced products.

SRI led the task for diversified passenger /freight train draft gears.

客户价值
Customer value

跨系统的技术创新
为用户提供整体化的系统解决方案

Cross-system technologic innovations
Providing integrated system solutions for users



——牵引系统、制动系统、网络控制系统，
成功实现一体化研制并服务用户。

– Traction system, brake system, and network control system have successfully realized the integrated development for users' services.

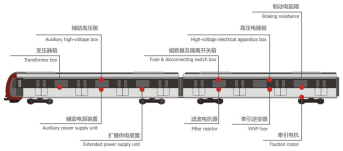
牵引系统
Traction System

掌握列车牵引传动技术，拥有完全自主知识产权。
高效的控制策略，带来更优的噪音及能耗水平，提升加减速平稳性。

We have mastered train traction technology
with completely independent intellectual property rights,
more efficient control strategy, lower noise and energy consumption level,
and more excellent stability of acceleration and deceleration.

以动车组牵引传动系统技术为基础，
开发了转向架式单轨列车牵引传动系统
以及地铁车辆、有轨电车牵引传动系统。
模块化的设计理念，
配合完善的维护软件支持，
为用户带来极好检修工作带来极大便利。

Based on the EMUs traction technology,
we have successively developed traction
system for straddle-type monorail trains,
metros and trams.
The modular design concept together
with perfect maintenance software
provides customers with remarkable
convenience for maintenance.

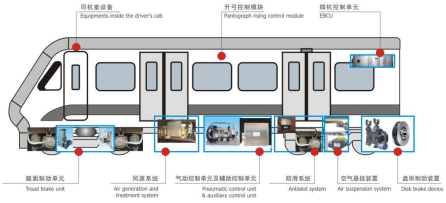


价值企业 VALUABLE ENTERPRISE

制动系统
Brake System

始终致力于列车制动系统的技术研究。
研制开发了动车组、铁路机车、客车、货车
以及城轨车辆制动系统。

SRI has always been dedicated to research
on the technology of train brake system.
We have developed brake systems used for EMUs, locomotives,
passenger cars, freight cars and urban rail vehicles.



掌握城轨车辆车控、架控与液压制动技术，
依据用户需要，为地铁、轻轨、有轨电车等
城市轨道车辆提供个性化的制动系统解决方案。

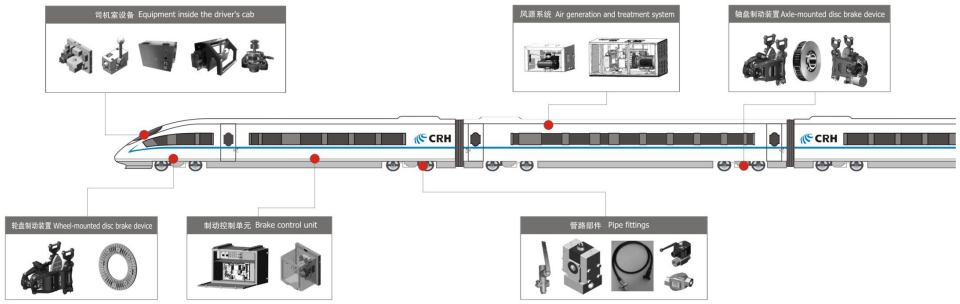
We mastered vehicle-controlling, bogie-controlling and
hydraulic brake technologies for urban rail vehicles. .
According to the needs of customers, we are able to
provide the customized brake systems for metros,
light rail vehicles, trams and other urban rail vehicles

采用微机控制直通电空制动系统，由制动控制系统、基础
制动系统、风源净化系统等组成；具有常用制动、快速制
动、紧急制动、停放制动、回送模式制动等功能；既能适
应人工驾驶下的司机控制器操纵，也能适应ATP/ATO操纵，
可适用于地铁、轻轨等城市轨道交通车辆。

The computer-controlled straight electro-pneumatic brake
system is composed of brake control system, bogie brake
unit, air generation and treatment system, etc.;
Benefits with such functions as service brake, rapid brake,
emergency brake, parking brake and brake under loopback
mode etc.;
Controllable by manual driver controller or ATP/ATO, and
applicable to metros, light rail vehicles and other urban
rail vehicles.

基于先进的硬件平台和设计理念，
建成动车组制动产品完整的开发平台、试验平台、生产平台，
成功开发出适用于不同型号动车组的制动系统产品。

Based on the advanced hardware platform and design concept,
we have mastered a complete set of development,
test and production platforms for brake products of EMUs
and successfully developed brake products for various types of EMUs.



价值企业 VALUABLE ENTERPRISE

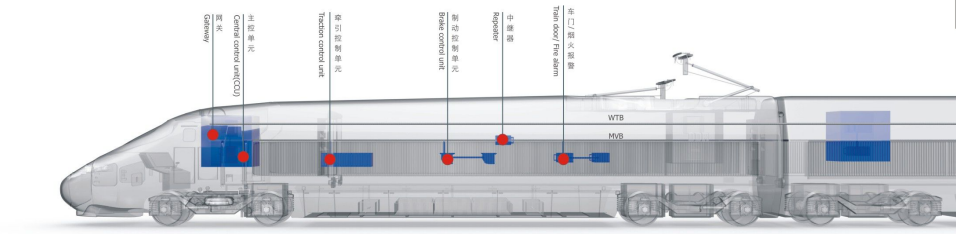
网络监控系统
Train Control & Monitoring System

长期从事列车网络技术研发，
掌握列车网络控制系统（TCMS）的系统设计，
技术覆盖LonWorks、CAN、TCN技术平台以及工业以太网技术平台，
实现了自主设计、制造和系统集成。
列车网络控制系统先后在干线列车、动车组与城轨车辆上装车运用，
为城市轨道交通便捷、安全、高效运营发挥作用。

Being engaged in research and development of train
network for years, we have now mastered the systematic
design of train control & monitoring system (TCMS),
which covers LonWorks, CAN, TCN and industrial Ethernet,
and achieved independent design, manufacturing and
system integration of TCMS.
Our TCMS has been successively operated on main line
trains, EMUs and urban rail vehicles, and play an important
role in convenient, safe and high-efficiency urban rail operation.

完善的列车网络控制系统，让列车实现智能化管理：
具有自诊断功能，故障导向安全装置在异常情况时自动
减速或停车；
能实现对列车牵引、制动、供电、空调、车门、转向架
等子系统和设备的控制；
与地面进行通信，完成车地间的数据交换，实现地面对
动车组的信息共享。

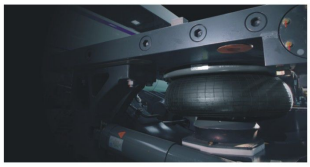
Perfect train control & monitoring system (TCMS)
allows the realization of intelligent management of train:
With self-diagnostic function, the fail-safe device is able
to automatically decelerate or stop the train under
abnormal condition;
Control over subsystems and equipments of train,
such as traction, brake, power supply, air-conditioning,
door, bogie, etc.;
Data exchange between the ground and EMUs via
communication and information sharing between trains
and wayside equipments.



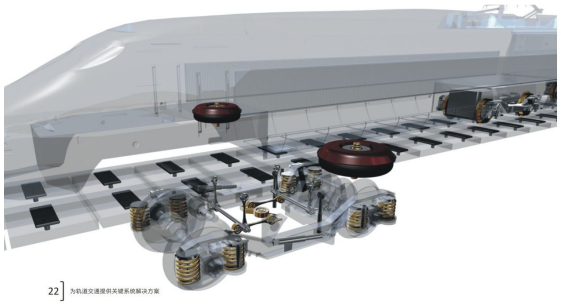
减振系统
Anti-vibration system

长期从事轨道车辆悬挂系统和橡胶减振领域的研究，减振技术全面覆盖高速动车、干线列车和城轨列车橡胶减振系统，在行业内处于领先地位。
先进系统的动力学仿真计算，严格科学的材料配方掌控，保证了我们的技术，始终满足不同恶劣的运用环境，以高品质的性能，保证列车的乘坐舒适度与安全性。

We have long been engaged in the research on suspension system and anti-vibration rubber for railway vehicles.
Our anti-vibration technology covers anti-vibration rubber for high-speed EMUs, main line trains and urban rail vehicles and occupies a leading position in the railway industry.
The advanced dynamic simulation and scientifically rigorous control over material formula ensures satisfaction of our technology to different severe operation environments;
and our high quality performance ensures the ride comfort and operational safety.



高速动车组空气弹簧
Air spring for High-speed EMU



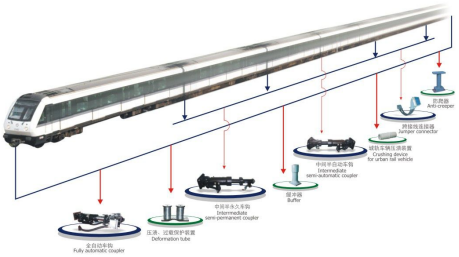
开发工程减振等系统技术，
掌握了不同等级地段的城市轨道减振方案核心技术。
We have put effort into the development
of the system technology
such as railway anti-vibration etc.,
and mastered the core technology
of urban rail anti-vibration for different areas.

钩缓系统
Coupler System

拥有多年的钩缓技术研究与开发经验，
为用户提供列车连挂、缓冲、能量吸收等系统车钩缓冲技术。
掌握钩缓系统功能模块与系统集成的核心技术，
形成全自动车钩、中间车钩、过渡车钩与前端模块
为主线的系列车钩缓冲装置产品线。

With years of experiences in research and development of the coupler system, we are able to provide our customers with coupler system including coupling, buffering and energy absorption systems.
We have mastered the core technologies of function modules and system integration of coupler system, and formed serial product lines of automatic coupler, intermediate coupler, Rescue coupler system and front-end hatch module.

高速动车组全自动车钩与前端模块
Automatic coupler and front-end hatch module for high-speed EMUs



国际先进水平的钩缓技术与产品，
覆盖高速动车、干线列车、地铁车辆，
并成为国内城轨钩缓行业标准制定单位，
在国内轨道交通领域处于行业领先地位。

Our internationally advanced coupler system technology and products are applicable to high-speed EMUs, main line trains and metros. We are also responsible for Industrial Standard formulation of domestic coupler system, and occupy the leading position in domestic railway transit field.

车钩缓冲装置采用模块化设计，可实现单模块的整体维修更换，
使用安全可靠，方便操作与维修。

Our coupler system adopts modular design; Single module can be wholly repaired and replaced; it is safe, reliable and easy to operate and repair.

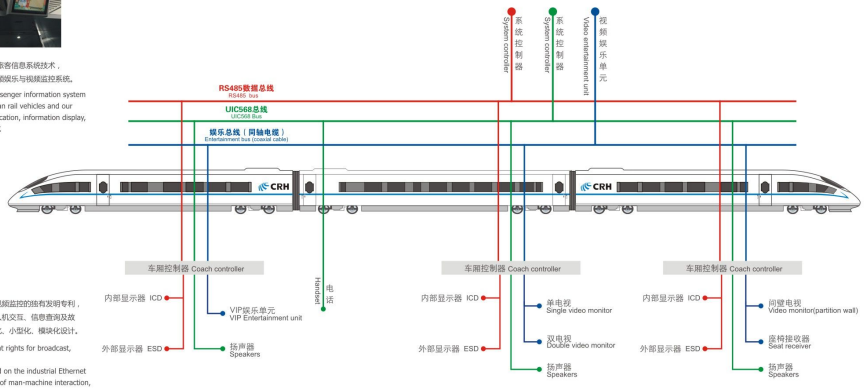
旅客信息系统
Passenger Information System

掌握完善的动车组和城轨车辆旅客信息系统技术，覆盖广播通讯、信息显示、视频娱乐与视频监控系统。

We have mastered perfect passenger information system technology for EMUs and urban rail vehicles and our products cover radio communication, information display, video entertainment and CCTV.

自主创新的旅客信息系统，全面覆盖各型动车组；针对不同城轨车辆特点，开发多种成熟完善的城轨旅客信息系统。

Our self-innovated passenger information system is applied to all types of EMUs;
we also developed various mature and perfect passenger information systems for urban rail vehicles according to their different characteristics.



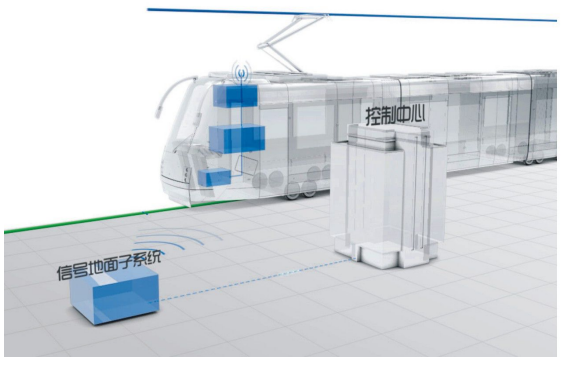
具有广播、显示、视频播放和视频监控的独有发明专利，以工业以太网总线架构，实现人机交互、信息查询及故障诊断的功能，系统采用标准化、小型化、模块化设计。

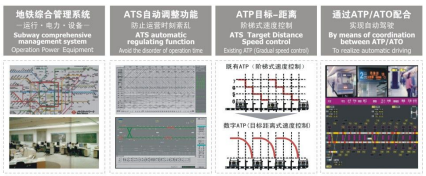
We possess the exclusive patent rights for broadcast, display, video play and CCTV.
Our products can realize, based on the industrial Ethernet bus architecture, the functions of man-machine interaction, information inquiry and fault diagnosis. Furthermore, our products adopt the standardized, miniaturized and modular design.

信号系统
Signaling system

借助轨道车辆技术优势，进入轨道交通信号系统研究领域。
技术安全、可靠、稳定。
具备完整信号系统的设计、制造、测试、集成、工程实施与维护能力。
产品覆盖：干线列车、地铁、轻轨、单轨及有轨电车信号领域。

Our superiority of railway vehicle technology make us gradually enter into the research field of signaling system for railway transit.
Our signaling technology is safe, reliable and stable.
We have capabilities such as design, manufacturing, test, integration, execution of the works and maintenance for complete signaling system;
Our signaling products cover the fields of main line, metro, light rail, monorail and tram.



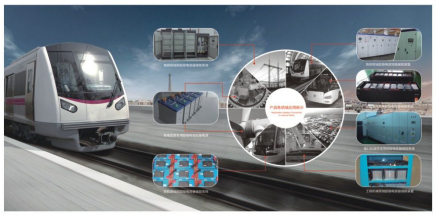


信号系统解决方案
Solutions for signaling system

列车自动防护系统（ATP），负责列车的安全运行，ATP子系统对列车运行方向、运行间隔、运行速度等进行监控，与联锁子系统相配合，以“故障——安全”原则防止列车冲突、超速等一切危险情况发生。
列车自动运行子系统（ATO），完成列车的速度调整、程序停车、车门控制等自动驾驶相关功能。
联锁子系统（CBI），完成正线和车辆段信号设备的联锁控制，满足“故障——安全”原则。
数据通信子系统（DCS），完成车地无线通信和地面骨干网络通信功能。
维护监测子系统，负责监测各子系统设备状态，提供网络管理、故障报警、辅助维修作业等功能。

The main function of automatic train protection (ATP) subsystem is to guarantee the safe operation of train
and ATP subsystem monitors the running direction, headway, running speed etc. of train
and coordinates with interlocking subsystem so as to avoid, based on the principle of "fail-safe", any dangerous incidents like train collision, over-speed etc.
The automatic train operation (ATO) subsystem allows the performance of speed adjustment,
programmed stopping, door controlling and other operation relating to automatic driving.
Computer Based Interlocking (CBI) subsystem is used for interlocking control of signaling devices on main lines and in depots so as to fulfill the "fail -safe" requirement.
Data communication subsystem (DCS) allows the realization of wireless communication between trains and wayside equipments as well as that among main ground networks.
Maintenance and monitoring subsystem is used for monitoring the device status of various subsystems, providing network management, fault alarming, auxiliary maintenance etc.

节能系统
Energy saving system



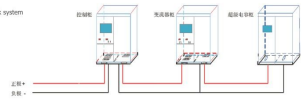
轨道交通制动能量回收利用系统
风力发电系统
新能源汽车系统
Rail transit braking energy recovery system
Wind power generation system
New energy vehicle system

超级电容储能装置
Ultra capacitor energy storage device

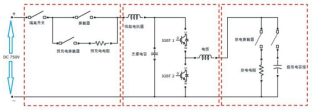
再生制动能量回馈系统
Regenerative braking energy feedback system

四方所充分发挥电力电子方面的技术和产业优势，
以关键系统定制化设计为方向，打造储能系统技术优势，
加快国内超容行业的发展，
研发的地铁储能系统在北京地铁并网运用。

SRI sufficiently played the technologic and industrial advantages in the electric and electronic fields, oriented the customization design of key super-capacitor systems, built the complete system technologies of energy storage system, and speeded up the development of domestic super-capacitor industry. The subway energy storage system developed by SRI was applied in the grid of Beijing Metro.



变流柜-超级电容柜结构图
Current transformation cabinet: Structural diagram of super-capacitor cabinet



系统构成图
System graph

跨领域的解决方案
服务轨道交通市场

Cross-disciplinary solutions
Serving the rail transit market

——高速动车、干线列车、机车、城轨列车、工程装备、新能源等市场领域

– Market fields of high-speed motor train units, main line trains, locomotives, urban rail trains, engineering equipment, and new energy

高速动车组领域
High-speed EMU

为中国高速动车组提供核心系统技术。
积极参与中国标准动车组的核心技术创新与标准制定。
We provide the core systematic technologies
for China's high-speed EMUs.
We take an active part in core technology innovation
and standard formulation for Chinese standard EMU.

创新的核心技术与产品，
全面装用于各型动车组、高铁列车及城际列车上。

Our products and technologies have been widely applied on
various types of EMUs, high-speed trains and urban rail vehicles.

钩缓产品助力中国标准动车组实现重联
SRI's coupler and draft gear products boosted the double-heading
of China's standard motor train units

关键产品装用于中国标准动车组运行状态良好
SRI's products are running well on China's standard motor train units

自主研发的高速动车组牵引控制与辅助控制系统在哈大线成功运用
The independently developed traction control and auxiliary control system
for high speed Emus are applied on Harbin-Dalian line successfully.

电气产品
Electrical products

标准动车组牵引控制单元
TCU of standard EMUs

标准动车组辅助控制单元
ACU of standard EMUs

减振产品
Anti-vibration products

CRH3型动车组空气弹簧
Air spring for CRH3

CRH5型动车组空气弹簧
Air spring for CRH5

钩缓产品
Coupler system

动车组全自动车钩
Full-automatic coupler for EMUs

动车组中间车钩
Intermediate coupler for EMUs

制动产品
Brakes

轴装制动盘
Axle-mounted brake disc

制动夹钳单元
Brake clamp unit

价值企业 VALUABLE ENTERPRISE

城轨领域
Urban Rail

城轨车辆钩缓装置、空气弹簧行业标准的制定者，
掌握了城轨车辆关键系统技术，具有较强的国际竞争力。
We are in charge of the formulation of Industrial Standards
for couplers and air springs of urban rail vehicles.
We mastered the technologies of critical systems of urban
rail vehicles, and our technologies and products have strong
international competitiveness.

将高速动车组牵引传动系统、列车网络监控系统、旅客信息
系统及电气综合控制柜等技术移植应用于城轨车辆产品，提
高了城轨车辆系统技术水平。
We have applied our technologies of traction system, TCMS,
PIS and integrated electric control cabinet etc. for high-speed
EMUs in the field of urban rail vehicles, and thus improved
the technological level of systems for urban rail vehicles.

电气、钩缓、减振及制动系统等产品市场占有率国内领先。
Our electrical products, coupler system, anti-vibration
products and brake systems etc. occupy a leading position
in domestic market.

在地铁与有轨电车上实现牵引传动、列车制动、
网络控制三大系统一体化装车运用。
Achieve integration of the three systems, including traction,
brake and network control system and mounted
on metros and trams.

北京地铁牵引传动系统、网络监控系统及制动三大系统
通过载客运营考核
Beijing Subway's traction system, TCMS, and brake system
passed the passenger operation evaluation.

北京地铁
Beijing Metro

湖南100%低地板有轨电车
Hunnan 100% low floor tram cars

为珠海现代有轨电车提供信号系统产品
Provide signaling system for Zhuhai modern tram cars

地铁车辆牵引传动系统
Traction System for Metros

电气、减振、钩缓等产品装用于国内主要开通地铁的城市车辆，
为人们的便捷出行，发挥作用。
Our electrical products, anti-vibration products, coupler system
and other products have been mounted on domestic metros
and brought people transport convenience and travelling comfort.

重庆跨座式单轨列车
Chongqing Monorail Vehicle

长春轻轨地铁
Changchun Light Rail

干线列车领域
Main Line Train

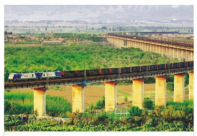
中国铁路历次大提速中，电气、减振、钩缓、制动等
产品全面装车运用，市场占有率占据主导地位。
为青藏客车提供列车供氧系统、全套电气设备、钩缓
装置和空气弹簧，
填补了高海拔车载制氧技术和电气技术应用的空白，
并因此荣获中国科技界最高荣誉科学技术进步奖特等奖。

Our electrical products, anti-vibration products, coupler system and brakes have been widely mounted on trains during the previous Chinese speed-up projects, and played a leading role in terms of the market share. We have provided oxygen supply system, complete set of electric apparatus, coupler system and air spring for Qinghai-Tibet passenger coach and filled the gap of on -board oxygen generation technology and electrical technology at high-altitude areas, and thus obtained the grand prize of National Science & Technology Progress Award, the highest honor of Chinese academic circles.

青藏客车密接式钩缓装置
Tight-lock coupler
for Qinghai-Tibet passenger coaches

青藏客车空气弹簧
Air spring for
Qinghai-Tibet passenger coaches

青藏客车逆变电源
Inverter power supply for Qinghai-Tibet train



弹性胶泥缓冲器
Liquid elastomer buffer

橡胶缓冲器
Rubber buffer

机车领域
Locomotive

国内机车制动系统的主要研制单位，
主持研制的JZ-7型空气/电空制动机
是我国内燃机车的主型制动机，
自主知识产权的JZ-8型微机控制制动系统，
具备国际先进水平。

We are the main domestic R&D institute for locomotive brake system; the JZ-7 type pneumatic/electro-pneumatic brake system developed by us is the main type of brake for domestic diesel locomotives;
Offer world-class JZ-8 microprocessor controlled brake system with independent intellectual property right.

研制开发的各类弹性胶泥缓冲器和橡胶缓冲器，
能量吸收效率高，为机车提供有效保护。
The various liquid elastomer buffers and rubber buffers developed by SRI have high efficiency of energy absorption and provide effective protection for the locomotives.

大功率机车制动系统
Brake system for high-power locomotives

相关多元化产业
Related Diversified Industries

以轨道交通核心技术为基础，不断拓展新技术与新市场。
产品进入汽车减振、工程减振以及煤炭港口等领域。

On the basis of the core technologies of railway transportation, we have been constantly developing new technologies and expanding new markets. Our products have successively entered into such fields as automobile anti-vibration, engineering anti-vibration, coal port etc.

铁路货车散料装卸系统
Bulk material handling system for railway freight cars

汽车减振产品
Automobile anti-vibration products

工程减振产品
Engineering anti-vibration products

国际领域
International Field

电气、减振、钩缓、制动等产品相继出口欧洲、南北美洲、东南亚等
国家与地区，以先进可靠的技术，为不同国家与地区的人们提供安全、
舒适、便捷的轨道车辆产品。

The electrical, anti-vibration, coupler and brake products are exported to such countries and regions as Europe, North and South America and South Asia. With advanced and reliable technologies, SRI provides the people in different countries and regions with safe, comfortable and convenient railway products.

与澳大利亚联邦科学与工业研究组织联合开展新型
储能材料开发与技术研究

SRI partnered with Commonwealth Scientific and Industrial Research Organization for material development and technologic research of new energy storage system.

核心产品装用于中国首列出口阿根廷内燃动车组
The core products were applied on China's first export diesel multiple unit to Argentina

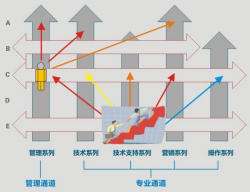
为乌兹别克斯坦电力机车提供客货两用制动控制系统，
具有环保、抗寒、符合俄罗斯国家铁路标准等特点。

Provide brake control system for the electrical locomotives which applied for both passenger and freight cars in Uzbekistan. The brake control system is environmental friendly, cold-resistant and meets the Russian Railway Standards.

2014年首届中俄博览会，中国国务院副总理汪洋和俄罗斯副总理罗
戈津对西方所的技术创新给予了充分肯定，并希望以既有的自主创
新技术为依托，为俄罗斯等国家与地区提供先进的轨道车辆关键技
术与产品。
In 2014, Wang Yang, vice premier of China's State Council and Dimitry Rogozin, deputy prime minister of Russia highly appreciated the technological innovations made by SRI and hopes SRI, dependent on its innovative technologies, to provide the advanced key technologies and products of railway vehicles to the countries and regions such as Russia.

为德国ICE4高速列车提供空气弹簧
Provide air springs for
ICE4 high-speed train in German

员工价值
Employee value



以人为本 实现价值
Staff Orientation Value Realization

大力实施“人才兴企”战略
和“以人为本”人才机制，
以专家聘任制、职业生涯设计
激发员工的创业激情，
致力于实现员工个人价值最大化。

Dedicated to achieving maximum staff values
implementing "talents revitalizing enterprise" strategy
"staff orientation" mechanism, and
expert employment, career design system,
inspiring employees' passion for entrepreneurship.

创新，是企业发展的不竭动力，
员工，是企业创新的源泉。
在企业良好的激励氛围中，
搭建快速成长的平台，
让员工收获成功的快乐。

Innovation is the inexhaustible impetus for
enterprise development,
Employee is the source for enterprise innovations.
Within the good incentive environment of the enterprise,
The employees gain rapid growth,
And happiness of success.

四方所拥有行业首席专家，
行业资深专家，行业专家，
公司级专家，公司中青年拔尖人才……，
取得多项国内、国际发明与设计专利

SRI possesses chief industry experts,
senior industry experts, industry experts,
enterprise-level experts, and middle-aged
and young top talents ，
SRI obtained domestic and
international invention and design patents.

铁道科技特等奖
Special railway technology award

铁道学会科学技术一等奖
First science and technology award
of China Railway Society

发明专利
Invention patent

实用新型专利
Utility model patent

火车头奖杯
Locomotive Cup

全国工人先锋号
China's National Worker Pioneer

VALUE INNOVATION PLATFORM
价值创新平台

三位一体的技术创新体系
跨产业的品质保证

Three-in-one technologic innovation system
Cross-industry quality assurance

三位一体的技术创新体系
Three-in-one technologic innovation system

技术研究　产品开发　试验验证
Technologic research　Product development　Testing and verification

拥有行业领先水平的技术研究、产品研发与试验检验手段。
先进的仿真平台，跨领域、全过程的产品测试，确保产品品质的一致性与稳定性。

SRI boasts industry-leading technologic research, product research, and testing and inspection means. The advanced simulation platform and the cross-disciplinary whole-process product testing guarantee the product quality consistency and stability.


国家认可实验室
CNAS Certified laboratory


中铁检验资质认定
CMA certificate


CMMI3认证
CMMI3 certificate

技术研究
Technologic research

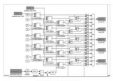

网络仿真平台
Network simulation platform

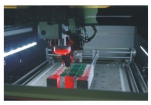

电磁兼容实验室
EMC laboratory


牵引系统联调试验台
System commissioning bench for traction system

产品开发
Product development


结构设计
Structural


图形化开发环境
Graphical development environment


飞针检测
Flying probe testing


橡胶综合试验台
Comprehensive test platform for rubber products


CRCC认证
CRCC certificate

试验验证
Testing and verification


热工静置实验室
Thermal static laboratory


实物轮轴试验台
Full-scale wheel/axle test stand


24通道电流伺服疲劳试验台
24-channel Electro-hydraulic servo fatigue test stand

跨产业的品质保证
Cross-industry quality assurance

建成中国轨道车辆重要部件产品生产制造基地。
跨产业的制造平台，覆盖电气电子、橡胶新材料、机械制造等领域。拥有行业内无可比拟的产品制造与质量保证能力。

Our manufacturing base is built to produce the important components for domestic railway vehicles. Our cross-industry manufacturing platform includes electrical and electronics components, new rubber material, machinery manufacturing etc. We possess the unparalleled railway product manufacturing and quality assurance ability.

电子产业平台 Electronic industry platform


表面贴装生产线
SMT line


电子组装车间
Electronics assembly workshop

电气产业平台 Electrical industry platform


高速动车组电气控制柜生产线
Production line for electric control cabinet of high-speed motor train units


列车牵引系统产品生产线
Train traction system manufacturing line

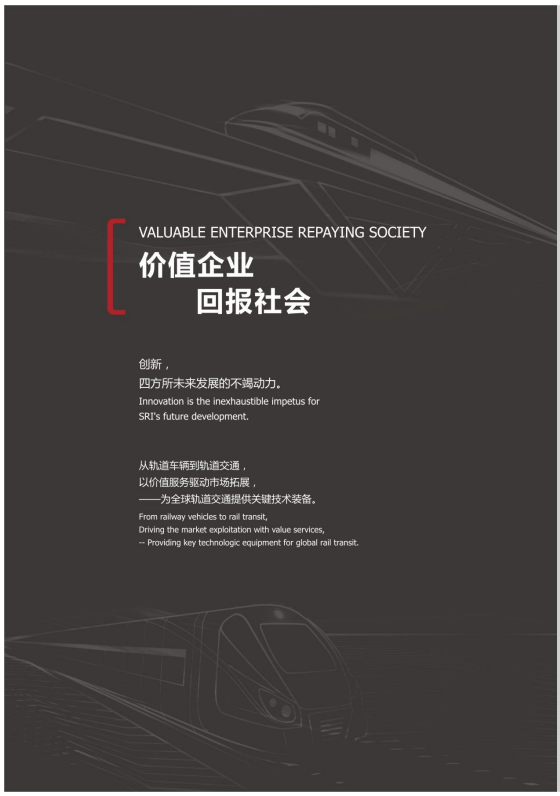
橡胶产业平台 Rubber industry platform


世界一流水平的橡胶硫化生产线
World class rubber vulcanization production line


金属件清洗线
Metal parts cleaning line

机械制造平台 Machinery manufacturing platform


数控机械加工生产线
CNC production line



VALUABLE ENTERPRISE REPAYING SOCIETY

价值企业
回报社会

创新，
四方所未来发展的不竭动力。
Innovation is the inexhaustible impetus for
SRI's future development.

从轨道车辆到轨道交通，
以价值服务驱动市场拓展，
——为全球轨道交通提供关键技术装备。
From railway vehicles to rail transit,
Driving the market exploitation with value services,
-- Providing key technologic equipment for global rail transit.