

# Research on the Development and Application of Active-Illumination Traffic Signs

## International Publication Content Framework

I-ROAD Technology Company · Innovation Era Press

Notes: This framework is suitable for international engineering publications, industry standard references, intelligent transportation and traffic safety research monographs, and international distribution publishing projects.

Chapter / Section	Main Contents	International Value	Recommended Attachments
Preface	Technical background, reasons for development, road safety in China, history of technology evolution	Helps international readers understand the Chinese engineering context	Historical photos, development timeline
Chapter 1: Current Status of Road Traffic Safety	Nighttime accidents, rain and fog conditions, expressway issues, limitations of traditional retroreflective signs	Establishes the global road safety problem context	WHO data, accident statistics charts
Chapter 2: Principles of Active-Illumination Technology	LED illumination principles, optical structure, luminance, visibility, power supply systems	Forms the core technical framework	Technical structure diagrams, schematic drawings
Chapter 3: Product R&D Process	Prototype development, manufacturing research, waterproofing, heat dissipation, anti-corrosion structural design	Demonstrates original R&D capability	Product evolution photos, R&D records
Chapter 4: Engineering Application Cases	Applications on expressways, urban roads, school zones, tunnels, and other environments	Provides international engineering case study value	Nighttime effect photos, comparison images
Chapter 5: Technical Specifications and Testing	Luminance, chromaticity, protection rating, durability, testing methods	Aligned with international standards frameworks	Test reports, experimental data
Chapter 6: China Standards Framework	Development of Chinese traffic sign standards, industry regulations, acceptance systems	Reflects China's engineering experience	Standard numbers, regulatory summaries
Chapter 7: International Comparative Study	Comparison of traffic sign technologies in China, USA, Europe, and Japan	Enhances international credibility and recognition	International cases and comparison tables
Chapter 8: Future Trends in Smart Transportation	V2X, autonomous driving, smart roads, AI-based traffic management	Reflects the future direction of the industry	Smart transportation architecture diagrams
Chapter 9: Proposed International Standards Framework	Terminology definitions, classification systems, test specifications, installation recommendations	Develops influence toward quasi-international standardization	Proposed standards drafts
Appendices	Technical parameters, drawings, glossary of terms, engineering photographs	Enhances engineering reference value	CAD drawings, parameter tables
References	IEEE, WHO, Chinese standards, academic papers and engineering materials	Improves academic credibility and international trust	DOI links and standard citations