

<table border="1"> <tr> <td><b>NAME/Department</b></td> <td><b>TITLE</b></td> </tr> <tr> <td>Kiyotaka Suzuki, Tsutomu Nakada Center for Integrated Human Brain Science, Brain Research Institute</td> <td>A non - invasive procedure for accurate assessment of diffusion-perfusion mismatch area based on higher order diffusion-weighted magnetic resonance imaging</td> </tr> </table>		<b>NAME/Department</b>	<b>TITLE</b>	Kiyotaka Suzuki, Tsutomu Nakada Center for Integrated Human Brain Science, Brain Research Institute	A non - invasive procedure for accurate assessment of diffusion-perfusion mismatch area based on higher order diffusion-weighted magnetic resonance imaging
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<b>FIELD</b>	<b>IT</b>	<b>NANO</b>	<b>BIO · LIFE</b>	<b>ENVIRO · ENERGY</b>	<b>OTHERS</b>

**ABSTRACT** Our study has shown that higher order diffusion-weighted magnetic resonance imaging (DWI) based on independent component analysis (ICA) enables combined assessment of diffusion and perfusion abnormalities in human cerebral ischemia, and that an optimized procedure of higher order DWI provides accurate identification of the so-called “diffusion-perfusion mismatch area”, which is considered as a possible penumbra and is the potential target of thrombolytic therapy. Compared with the conventional technique in which dynamic perfusion imaging (DPI) with contrast agent injection is utilized together with DWI, the new method has the advantage of being more accurate and fully non-invasive.

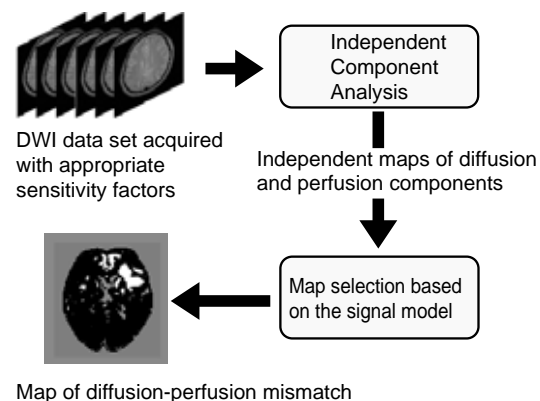
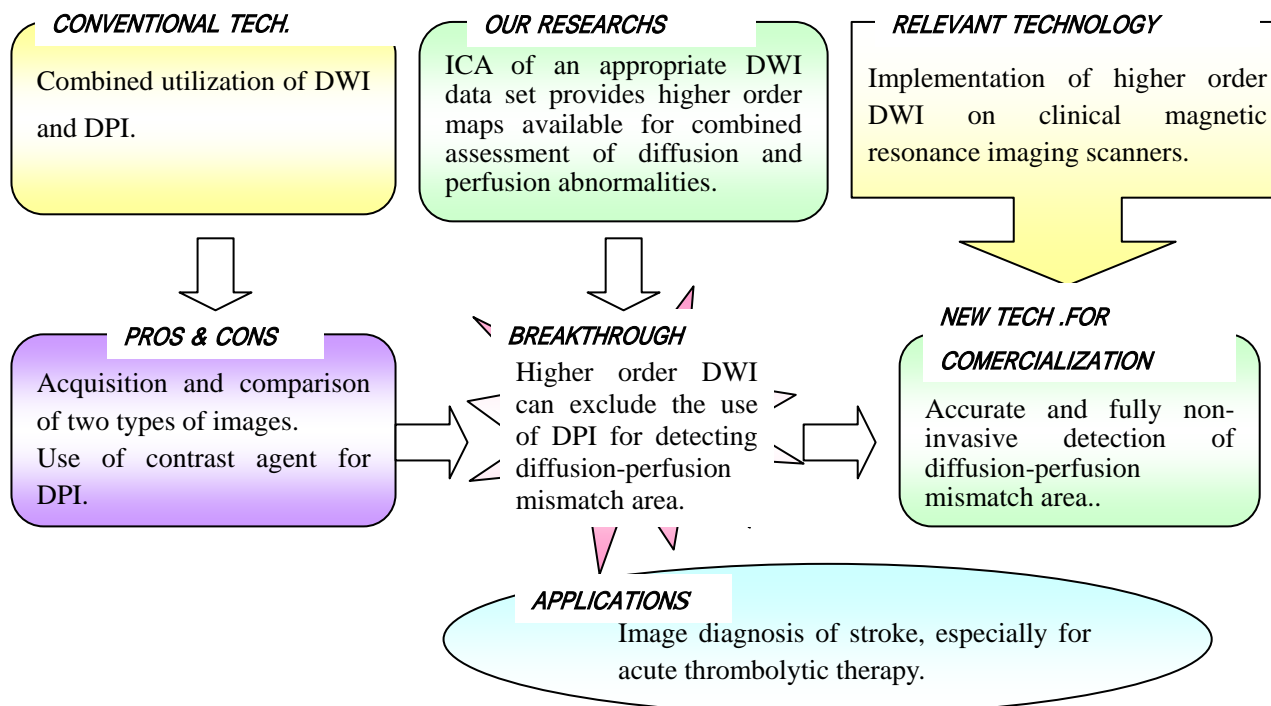


Fig. Schematic presentation of higher order DWI

**Flow Chart for Strategic Partnership University-Industry-Government to be Developed**



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