研究スタッフ

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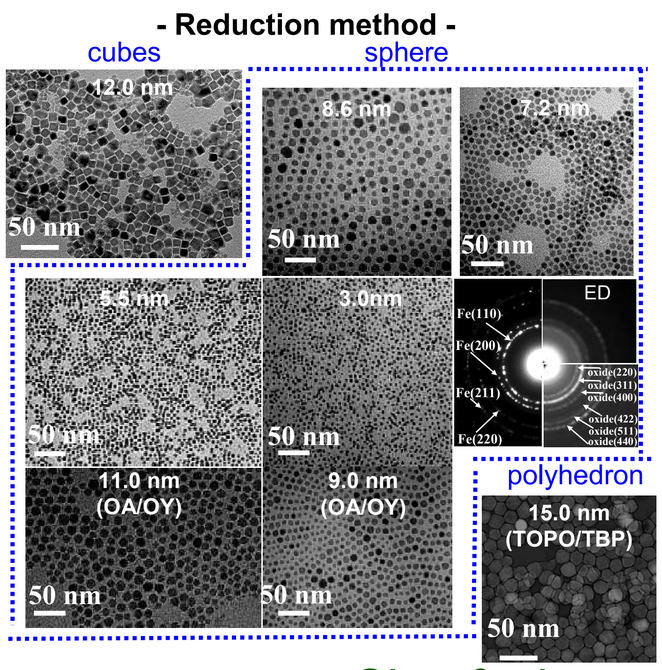
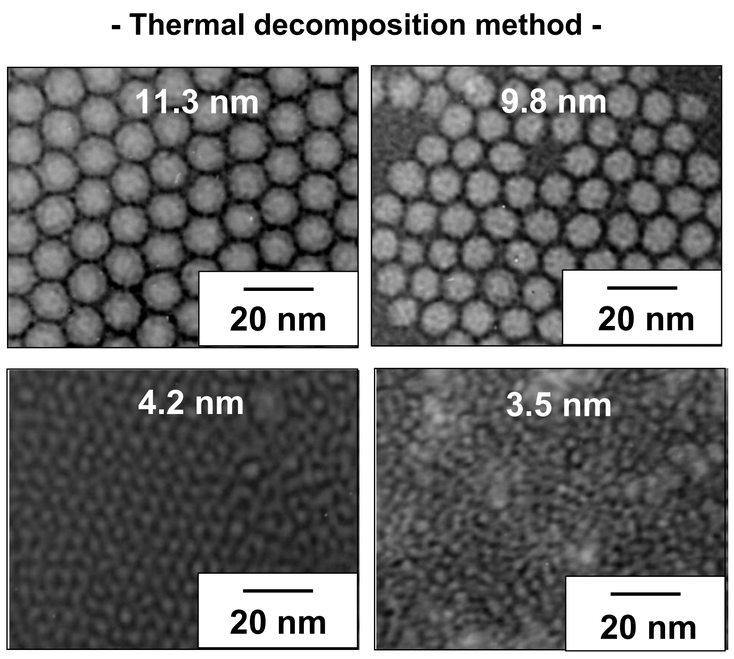
　　Xiang Guan Du、藏　　裕彰

研究目的

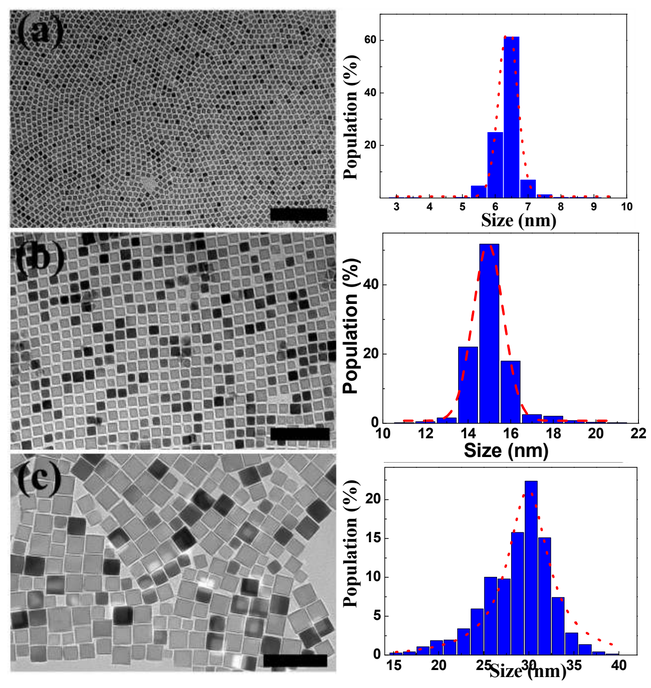
本研究室では、化学合成を中心としたウェットプロセスならびにスパッタ法を中心としたドライプロセスを駆使することによって、超高密度磁気記録媒体、高性能・高感度を有するMRAM・SVヘッドおよび高周波デバイスを実現し得る、新たな材料設計・プロセス技術の確立を目指している。

主な研究テーマ

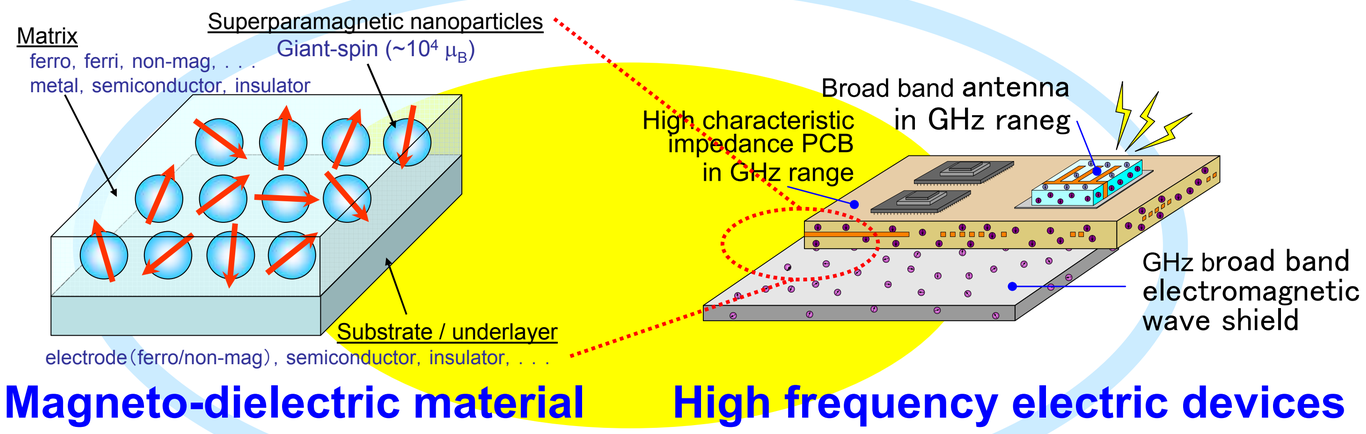




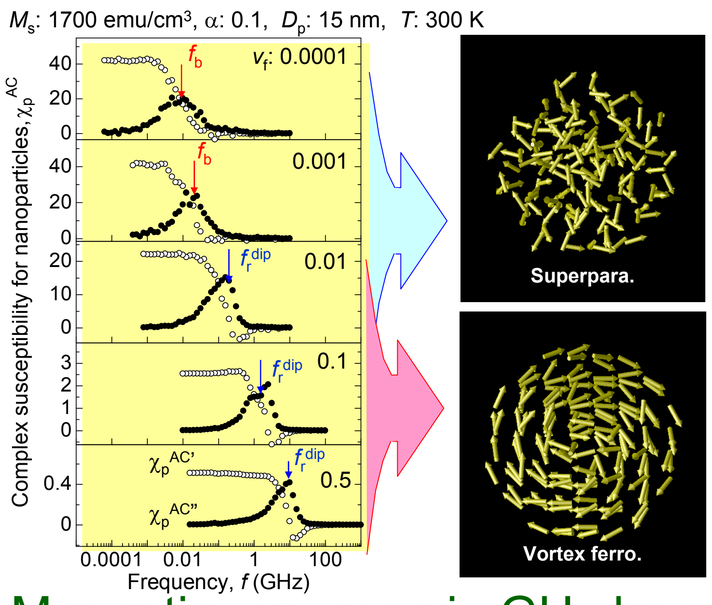
Size & shape controlled Fe NPs



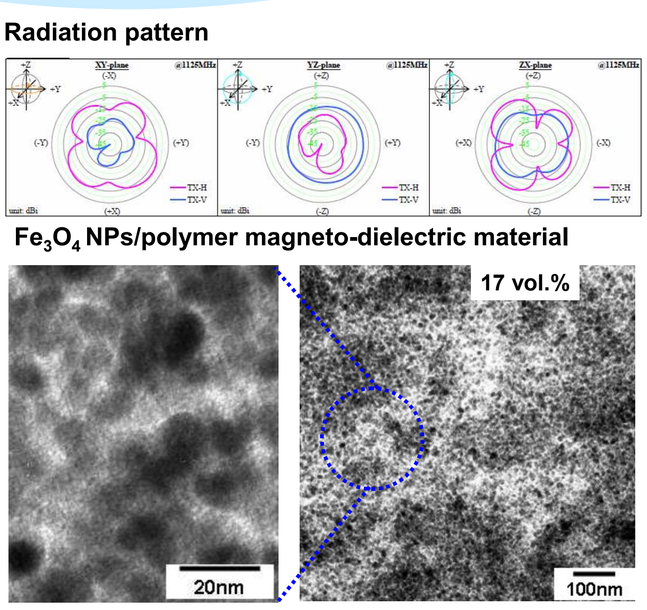
Shape & size controlled Fe_3O_4 NPs

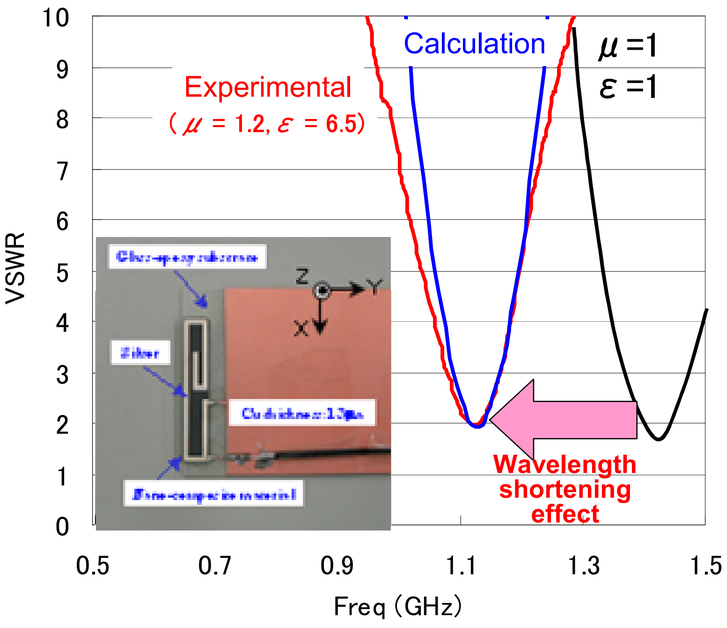


Magneto-dielectric material　　**High frequency electric devices**



Magnetic response in GHz band
for highly density nanoparticle assembly





22% of miniaturization of antenna with isotropic radiation property

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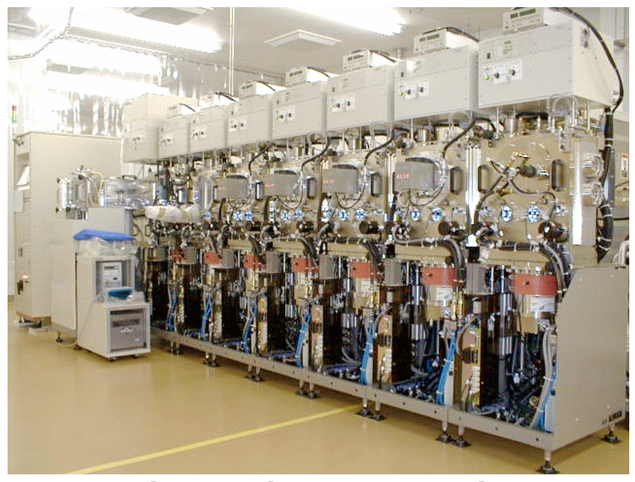
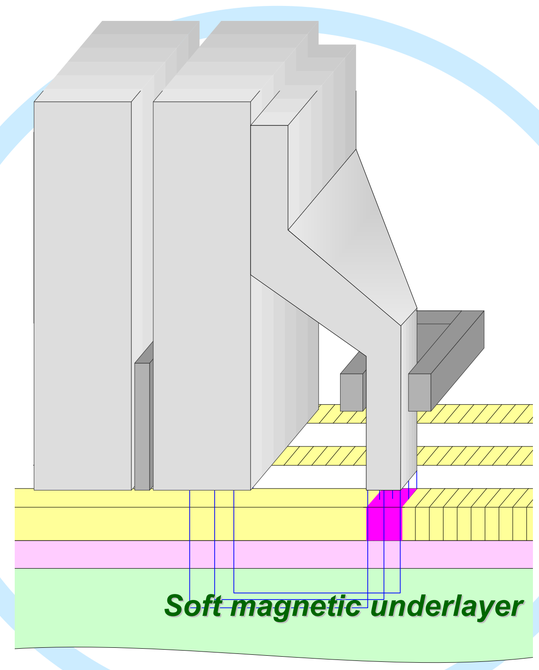
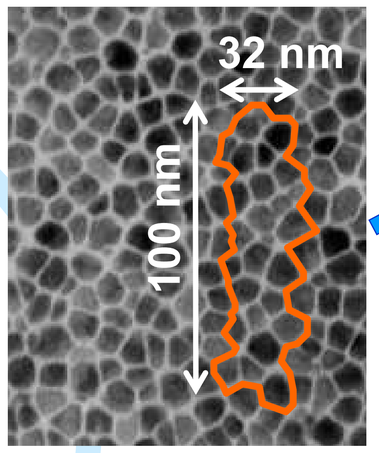
Next generation of Magnetic Recording Media

Fabrication of ultimate HD by perfect control of nanostructure



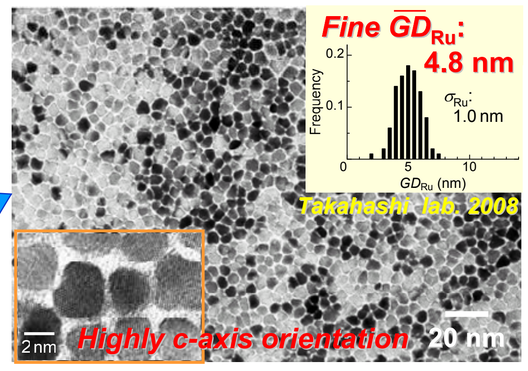
Ultra Clean Sputtering System

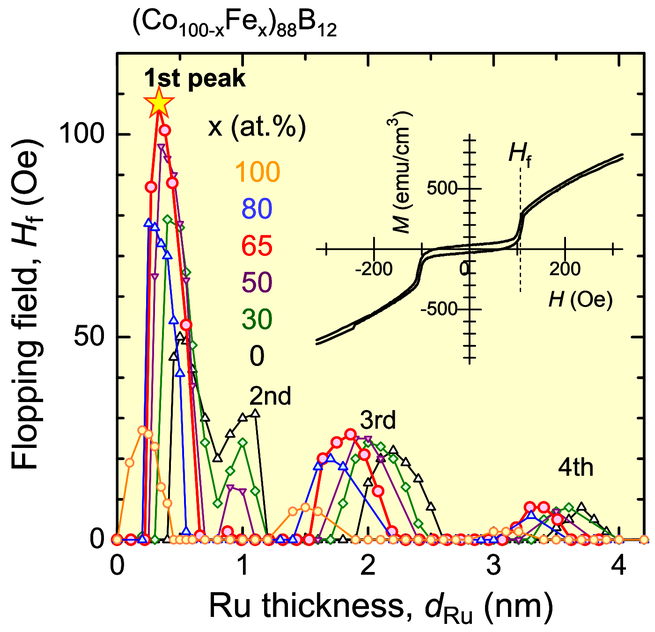


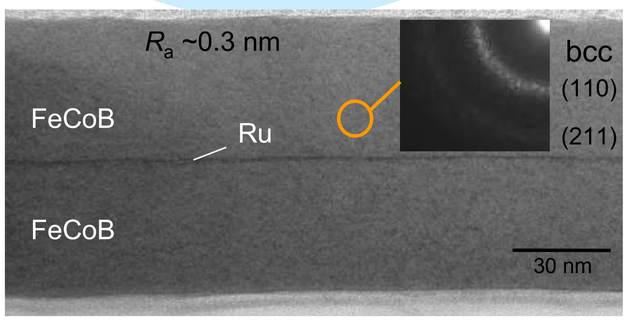


Present medium @ 100 Gb/in^2

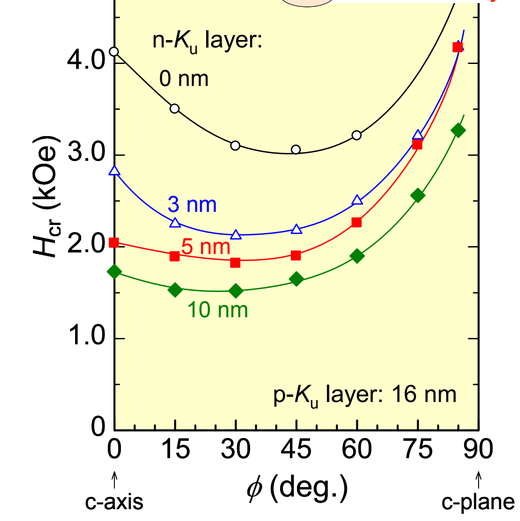
Recording layer





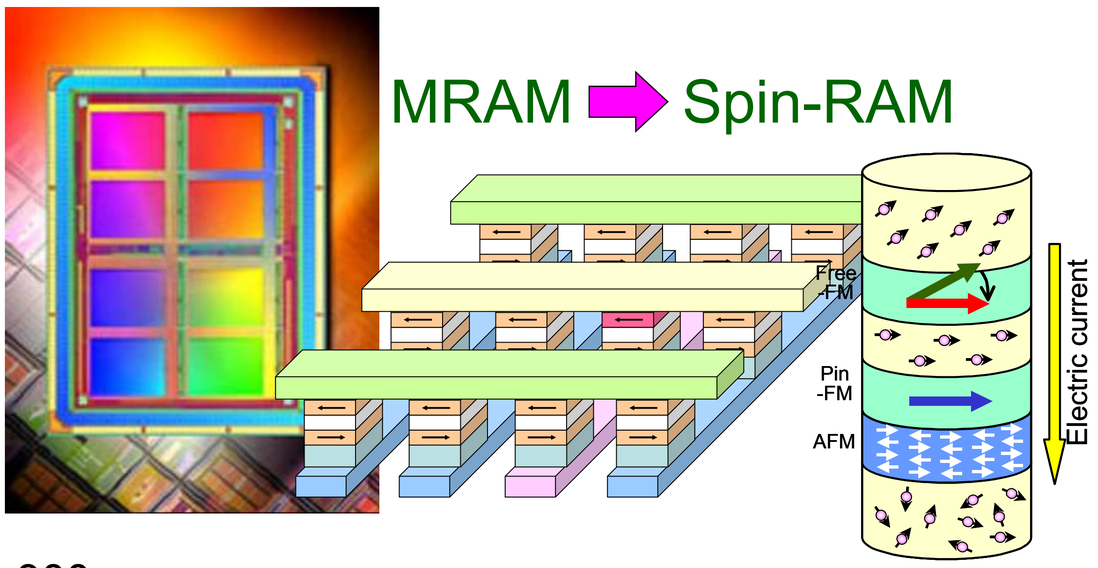


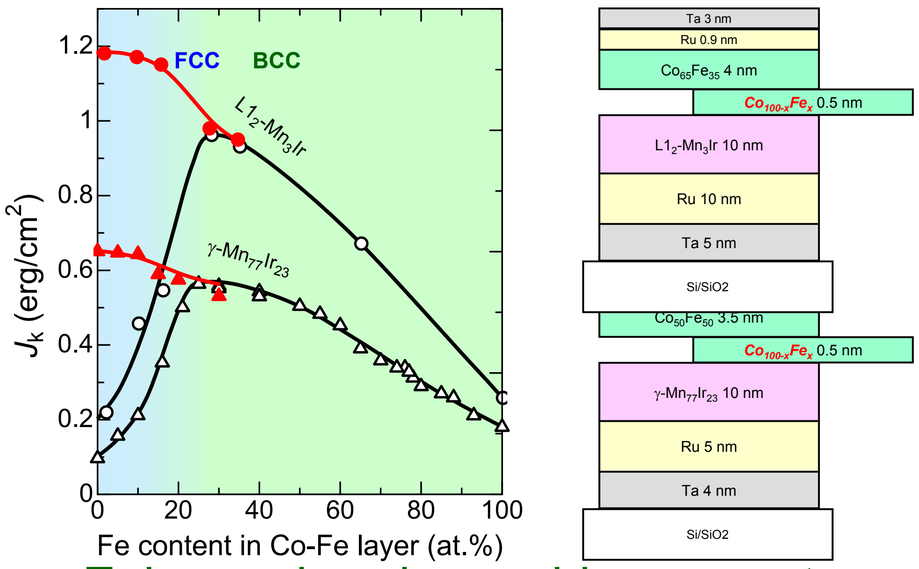
Spike noise & WATE free SUL



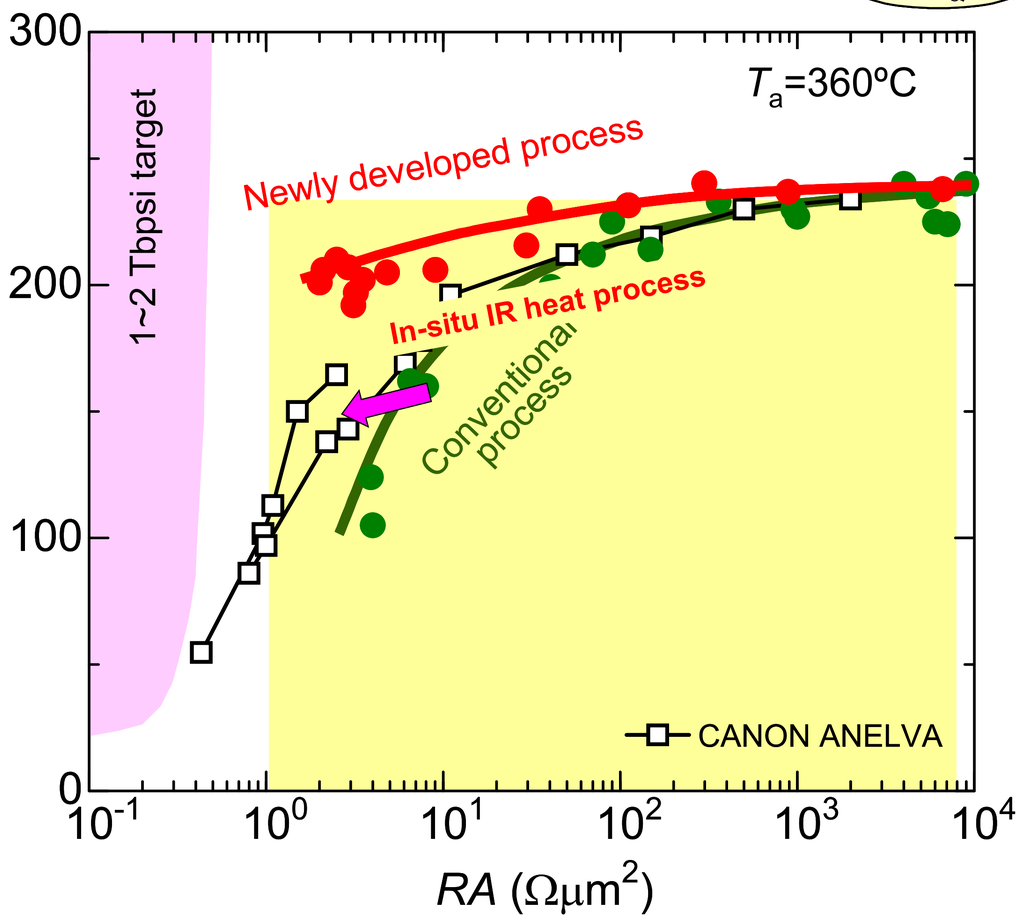
Maintain write-ability & Thermal stability

Spin nano technology for high performance magnetoresistive random access memory

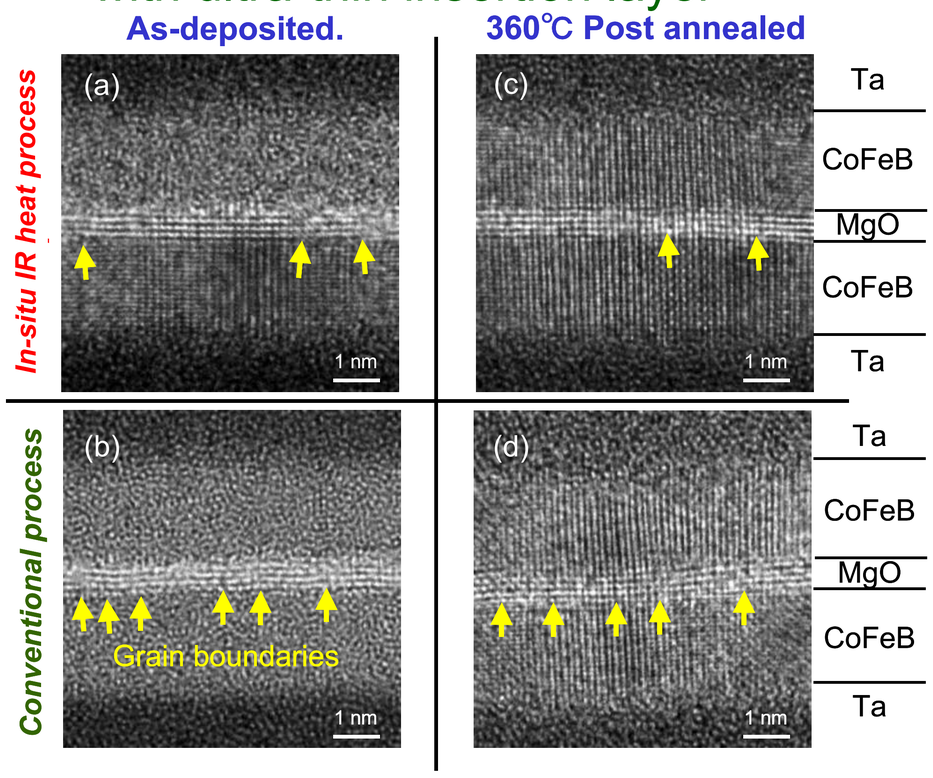




Enhanced exchange bias property with ultra-thin insertion layer



Giant TMR ratio & low *RA* with MgO barrier



Promoting lateral grain size of the MgO barrier by the in-situ IR heat treatment

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