SEMINAR TESIS

SINTESIS DAN KARAKTERISASI KATALIS $Mg_{1-x}Zn_xFOH$ SERTA APLIKASINYA PADA REAKSI TRIMETILHIDROKUINON DAN ISOFITOL

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PENDAHULUAN

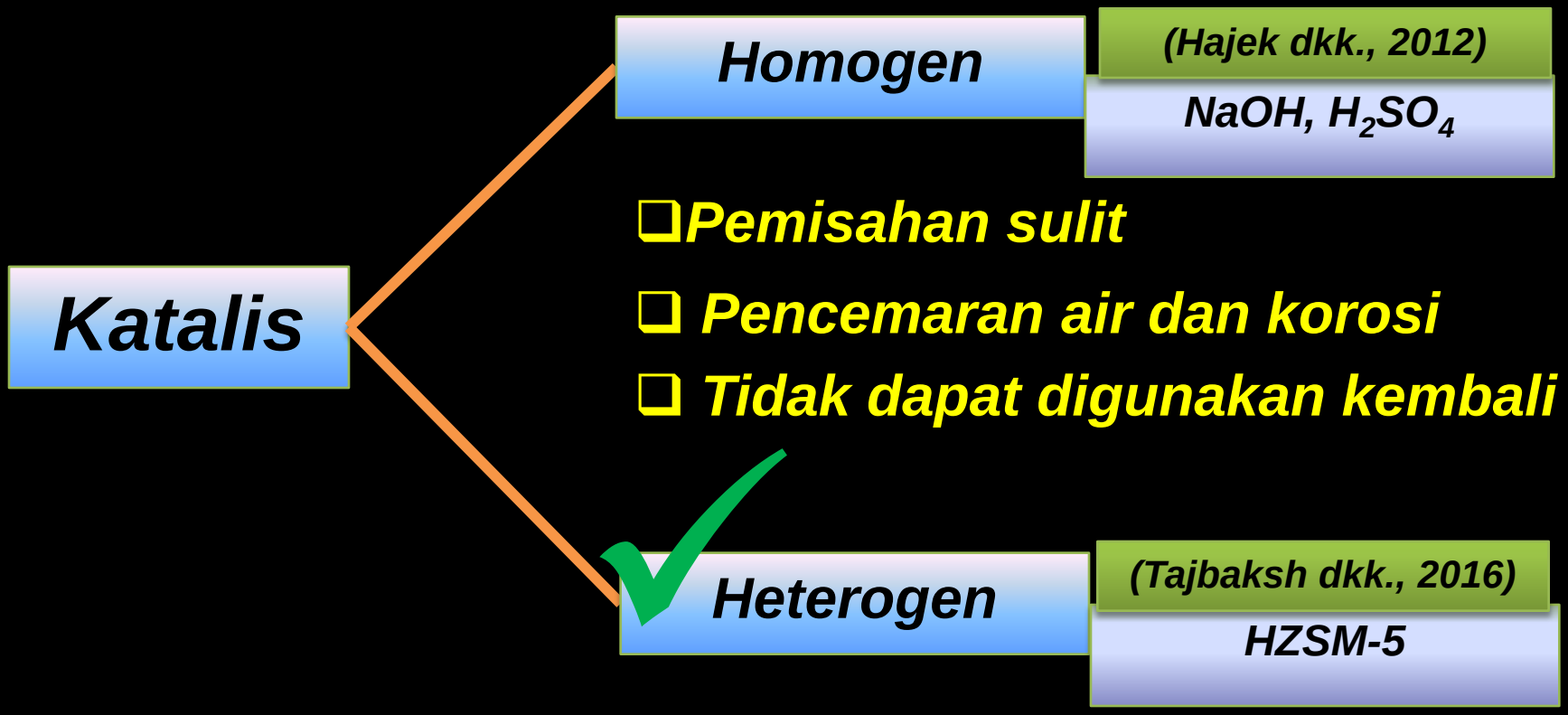
Katalis

Reaksi kimia

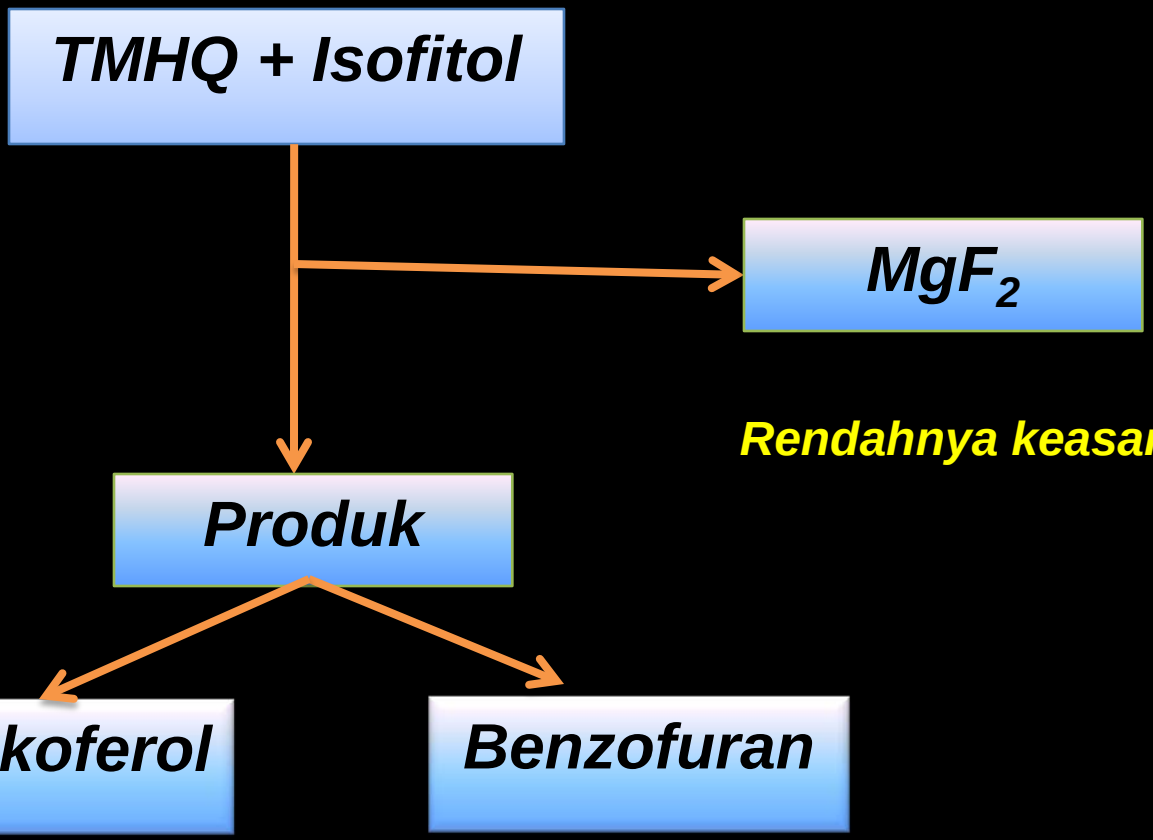
Dihasilkan kembali

Laju reaksi

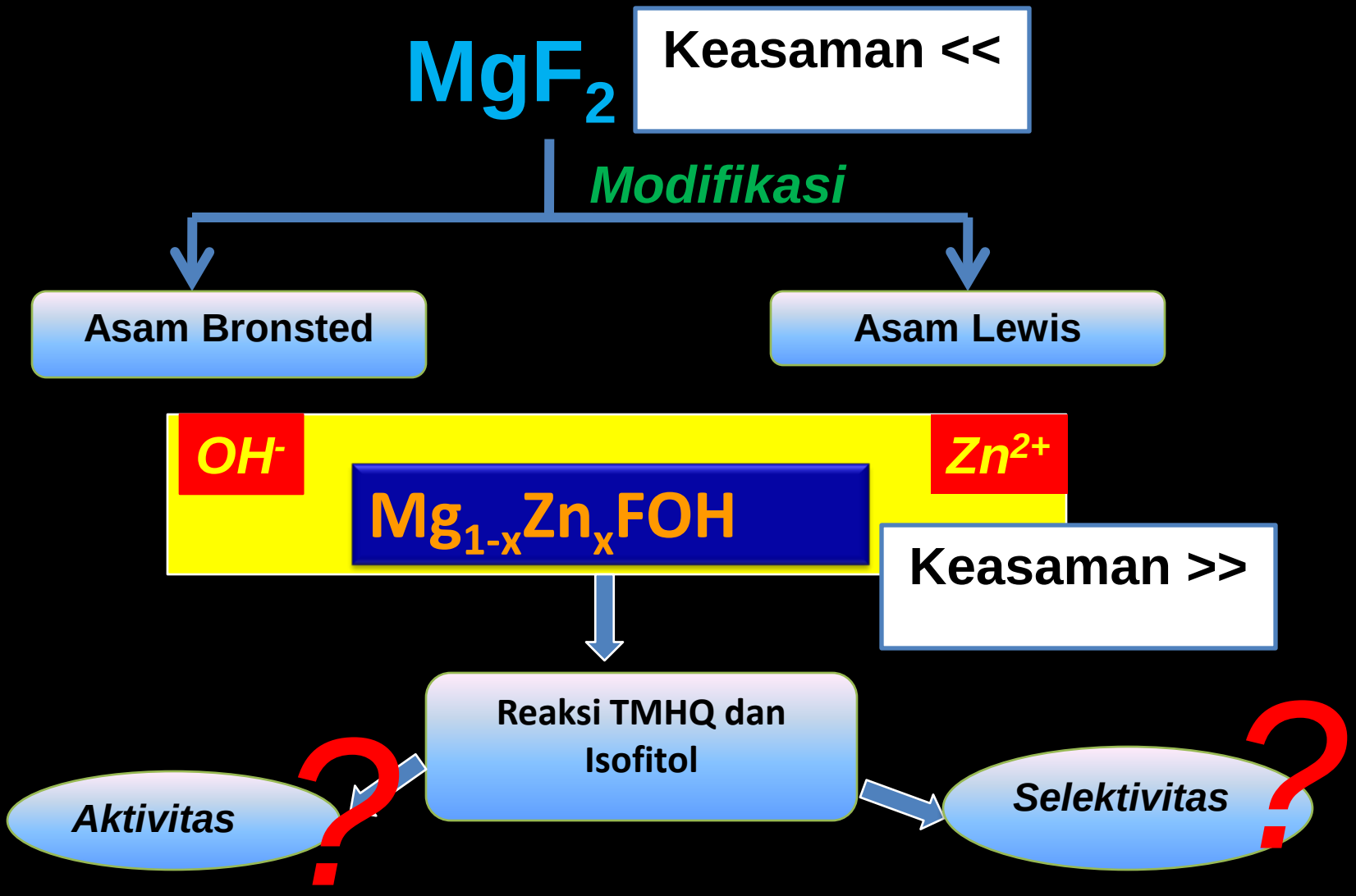
Sangat Penting di Industri


Katalis
Homogen
(Hajek dkk., 2012)
NaOH, H_2SO_4
❑Pemisahan sulit
❑ Pencemaran air dan korosi
❑ Tidak dapat digunakan kembali
Heterogen
(Tajbaksh dkk., 2016)
HZSM-5
❑Pemisahan mudah
❑ Ramah lingkungan
❑ Dapat digunakan kembali

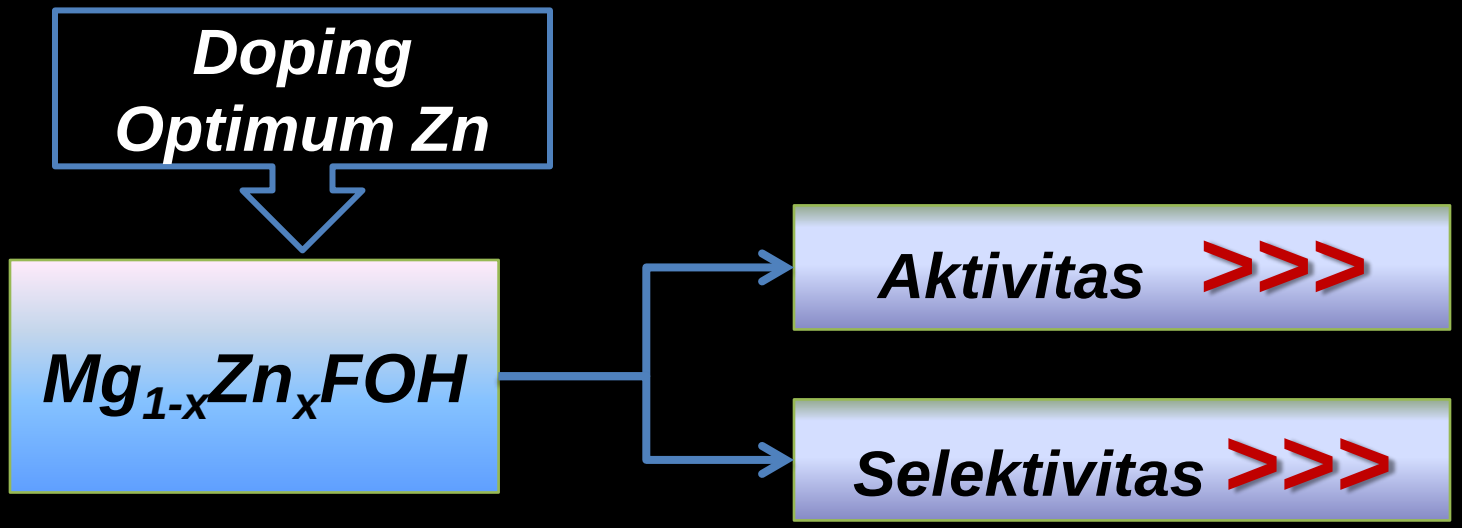
Usboko (2011)


TMHQ + Isofitol
MgF_2
Rendahnya keasaman
Produk
α Tokoferol
Benzofuran
Golongan Vitamin E
Selektivitas 47,10%
Antioksidan, antibakteri, antikanker (Mingzhang dkk., 2013)
Selektivitas 2,74%

RUMUSAN MASALAH



TUJUAN



MANFAAT

Informasi Bidang Katalis

Katalis Heterogen Aktif

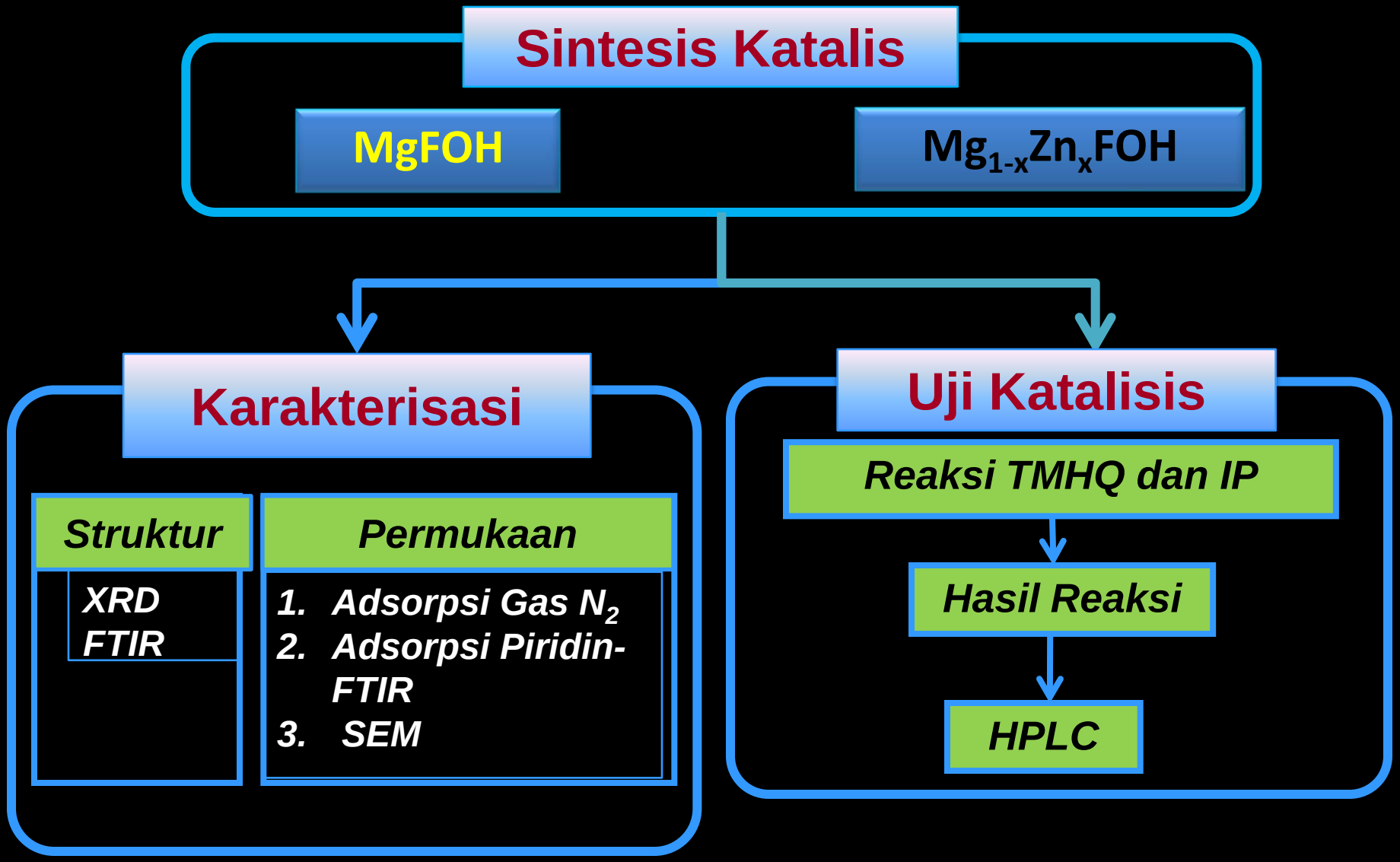
Reaksi TMHQ dan Isofitol

TINJAUAN PUSTAKA

TINJAUAN PUSTAKA

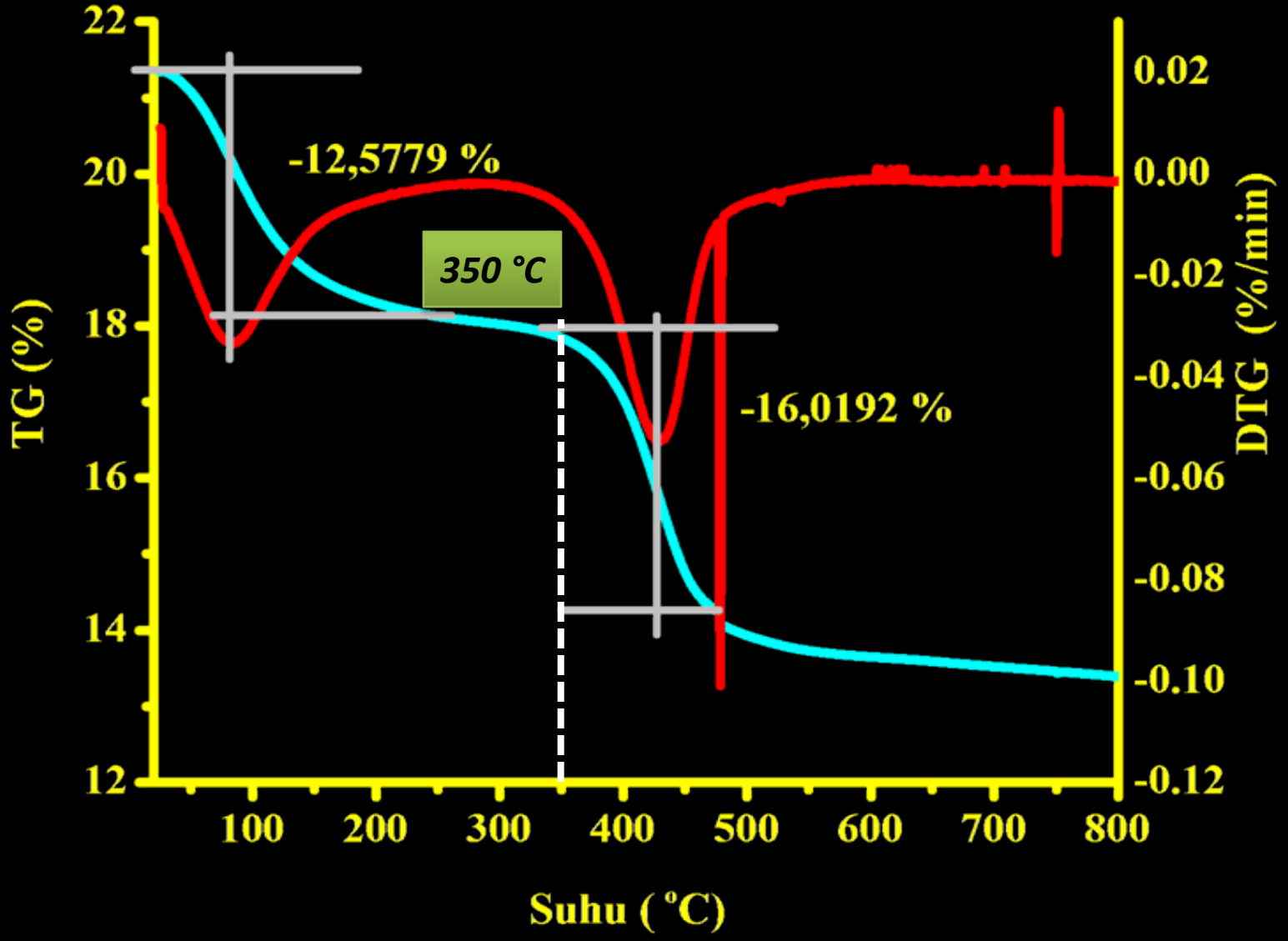
Peneliti	Katalis	Kelemahan
Bonrath dkk. (2007)	$Tm(OTf)_3$	Mahal, susah diperoleh logam tanah jarang
Ayuudiyaningsih dkk. (2007)	Al bentonit	Produk masih tercampur logam Al dari katalis
Usboko (2011)	MgF_2	Selektivitas rendah
Bonrath dkk. (2000)	$MC\text{-}(CF_3SO_2)_2NH$	Kondisi reaksi sulit

METODE PENELITIAN

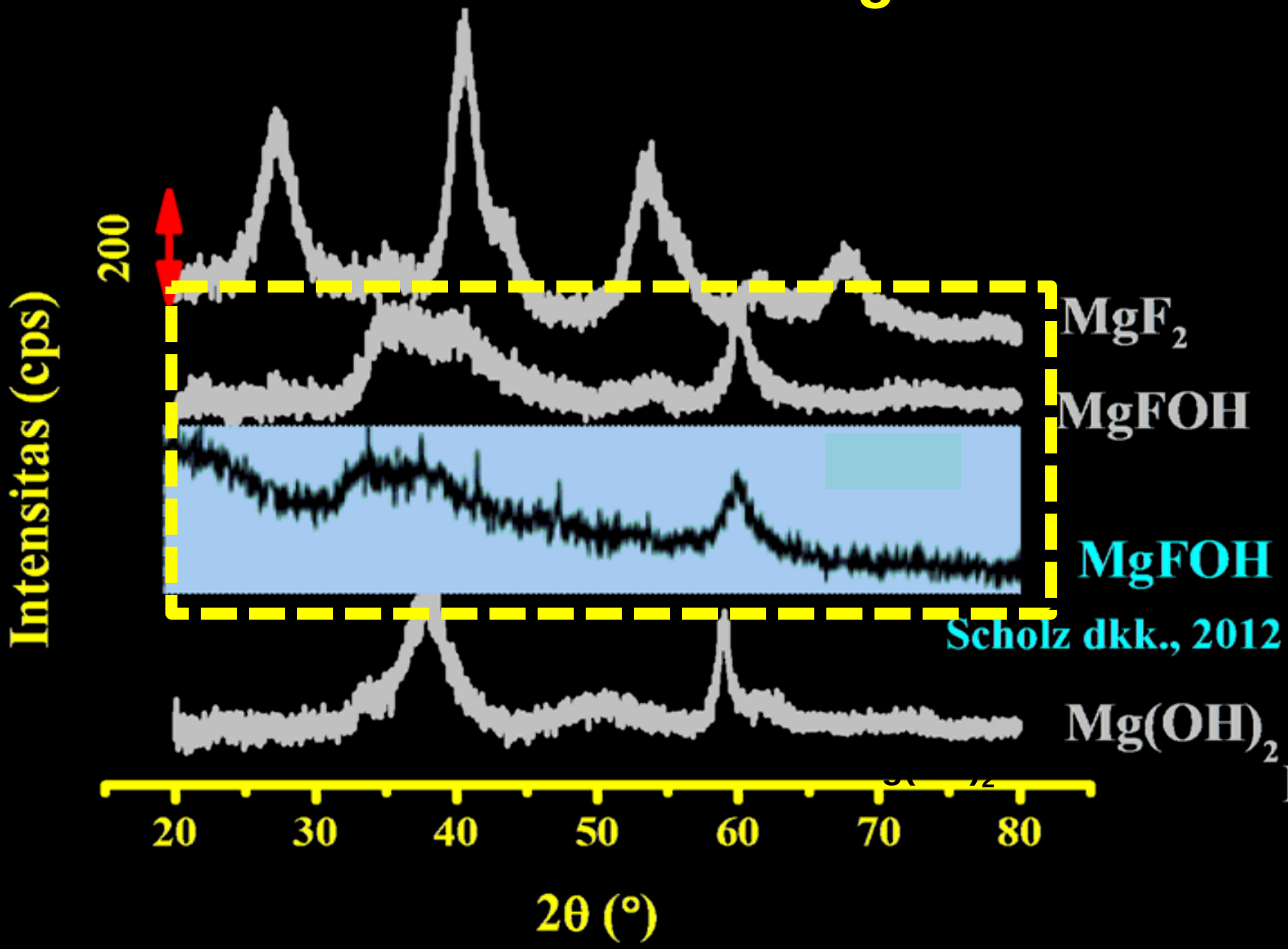

Sintesis Katalis
MgFOH
$Mg_{1-x}Zn_xFOH$
Karakterisasi
Struktur
XRD
FTIR
Permukaan
1. Adsorpsi Gas N_2
2. Adsorpsi Piridin-FTIR
3. SEM
Uji Katalisis
Reaksi TMHQ dan IP
Hasil Reaksi
HPLC

HASIL DAN PEMBAHASAN

ANALISIS TERMAL KATALIS MgFOH (x = 0)

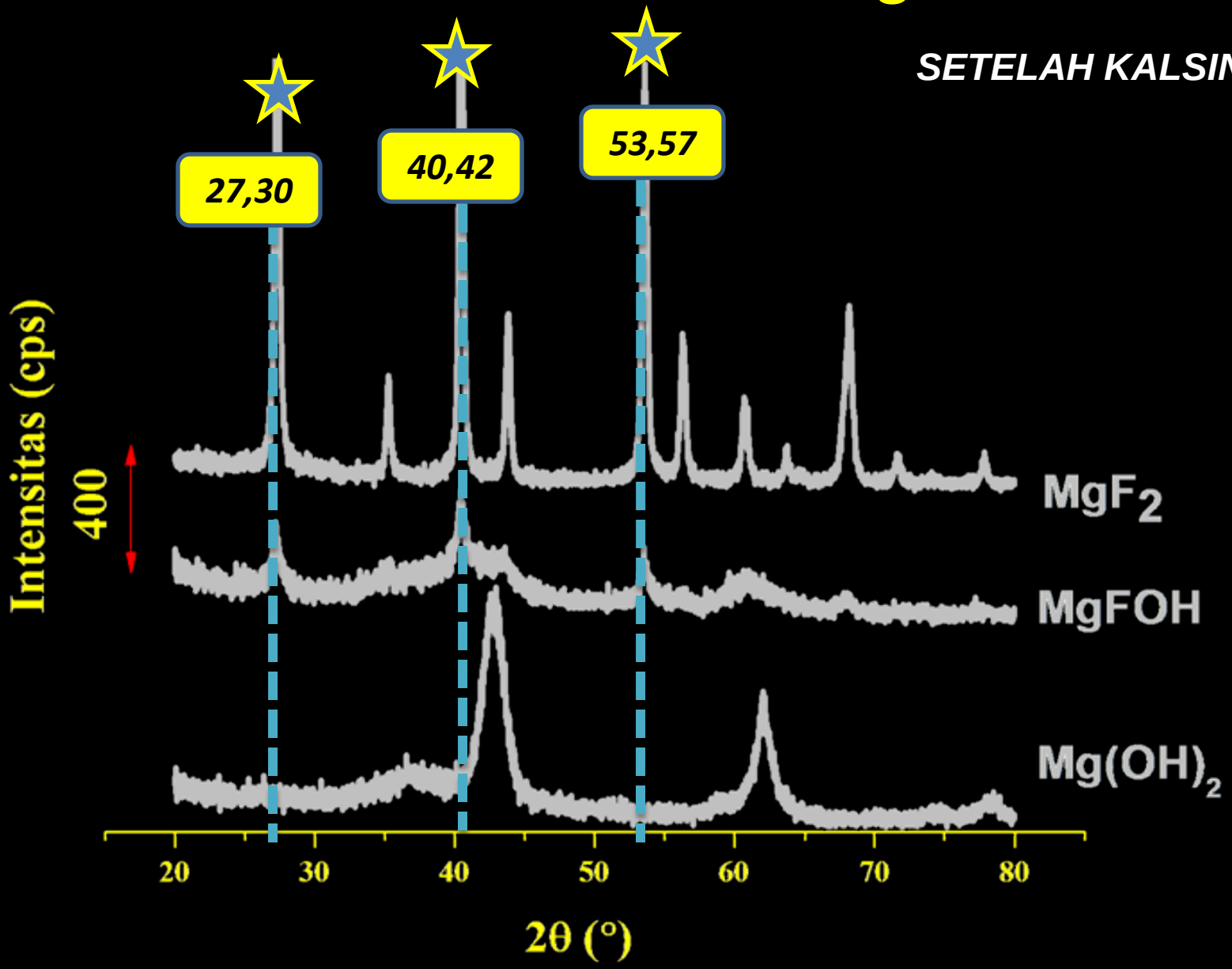


DIFRAKTOGRAM XEROGEL MgFOH



DIFRAKTOGRAM KATALIS MgFOH

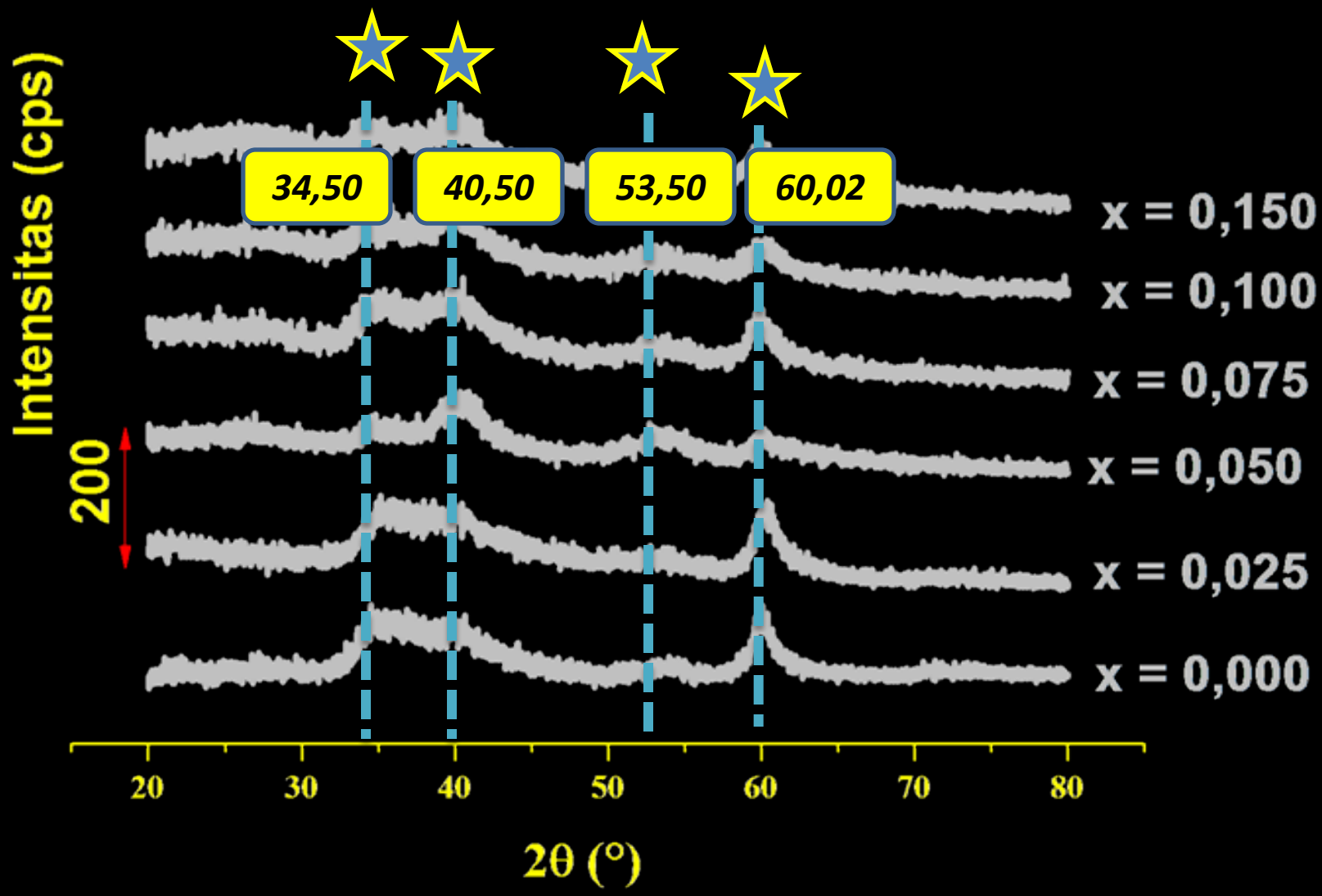
SETELAH KALSINASI



DIFRAKTOGRAM XEROGEL $Mg_{1-x}Zn_xFOH$

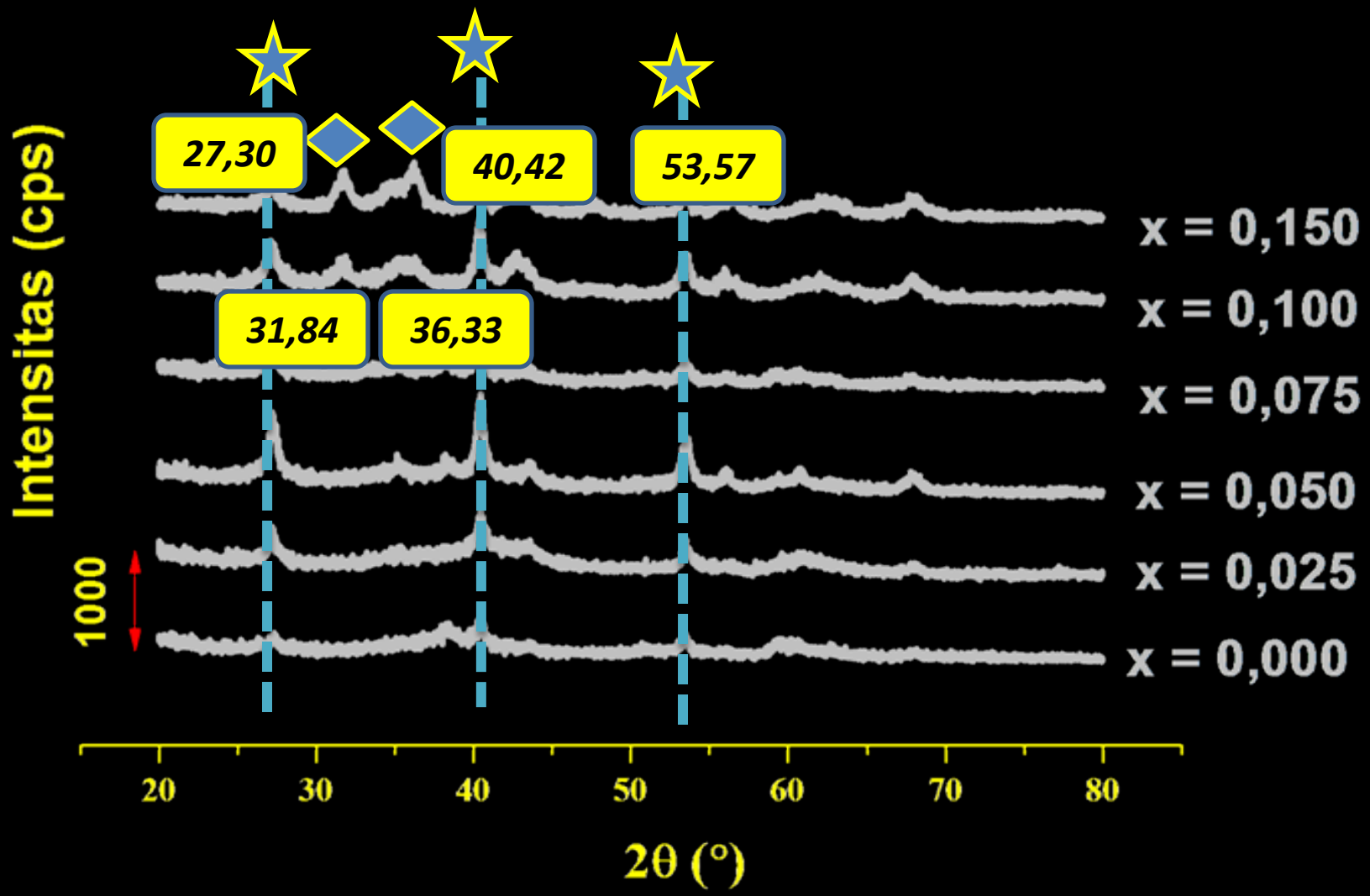
A

PENGERINGAN VAKUM

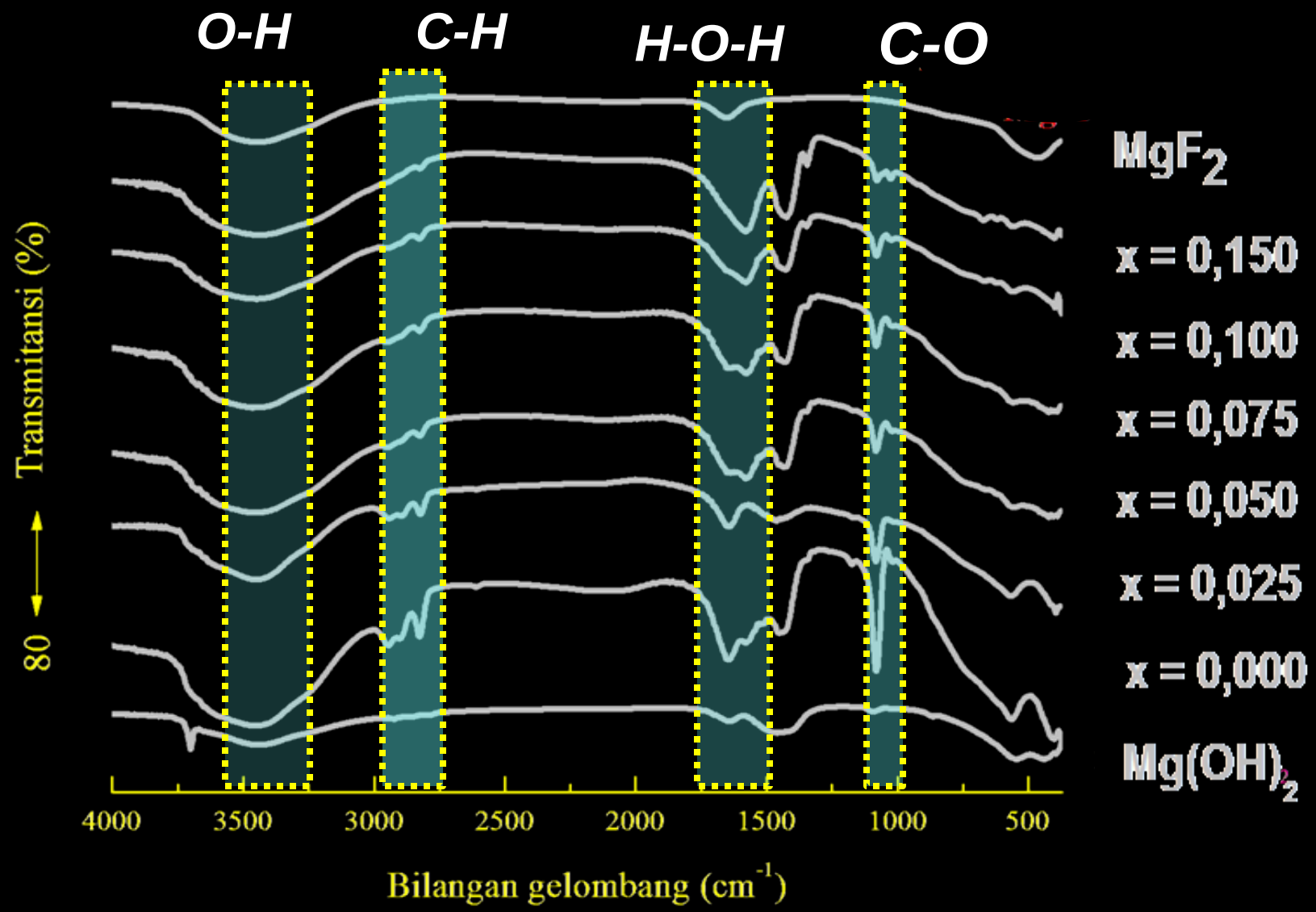


DIFRAKTOGRAM KATALIS $Mg_{1-x}Zn_xFOH$

B *KALSINASI*

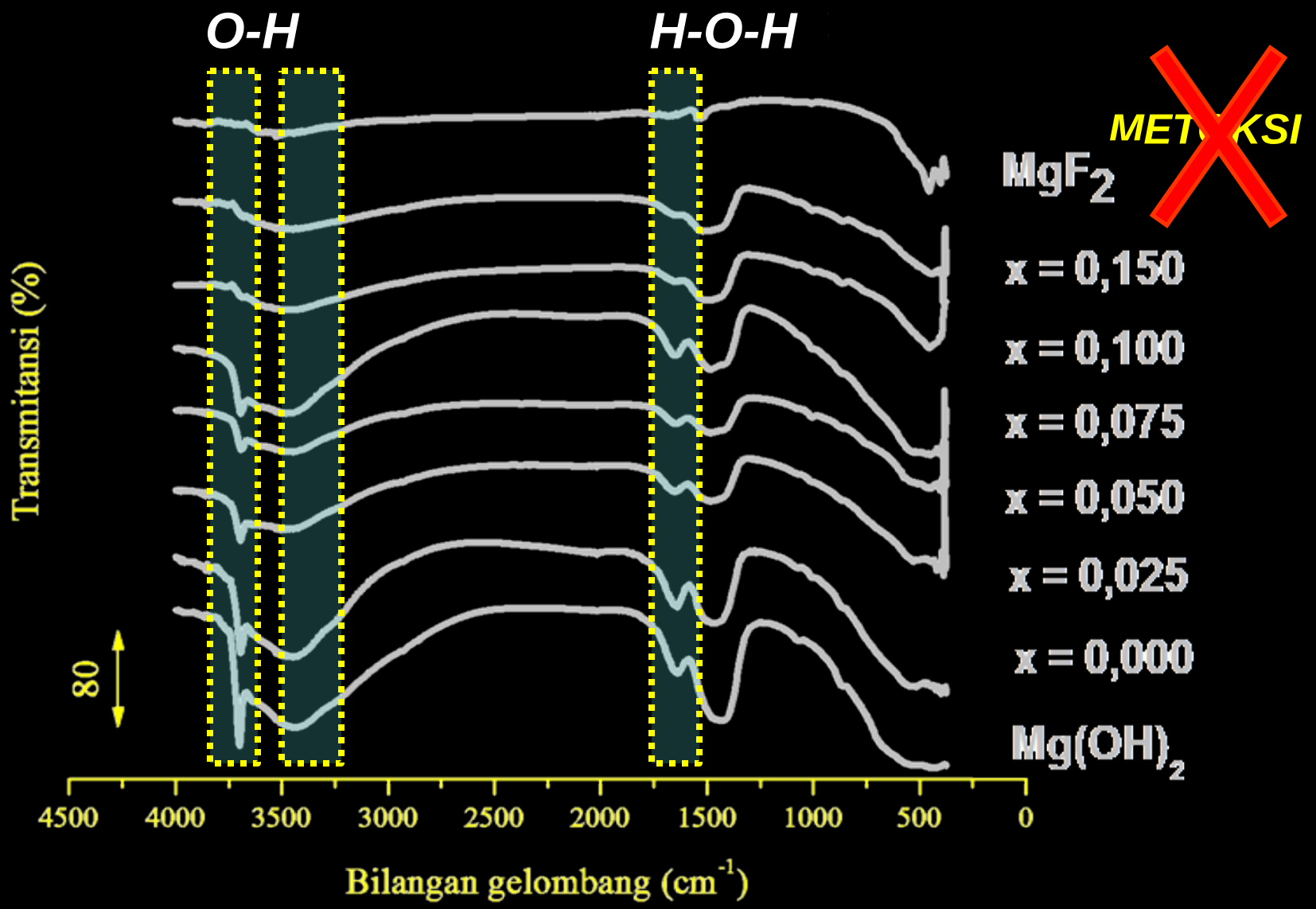


HASIL FTIR XEROGEL $Mg_{1-x}Zn_xFOH$

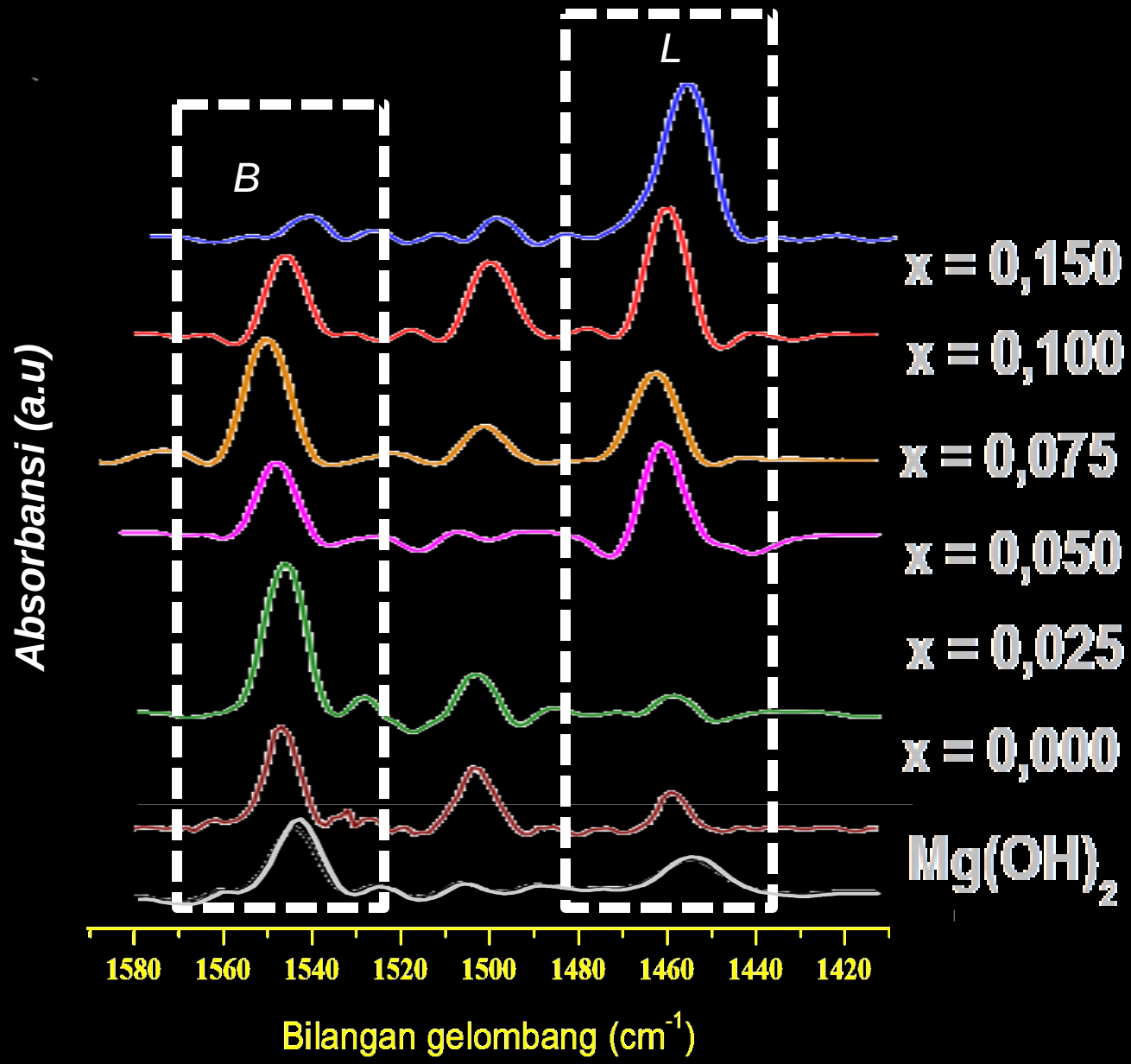


HASIL FTIR KATALIS $Mg_{1-x}Zn_xFOH$

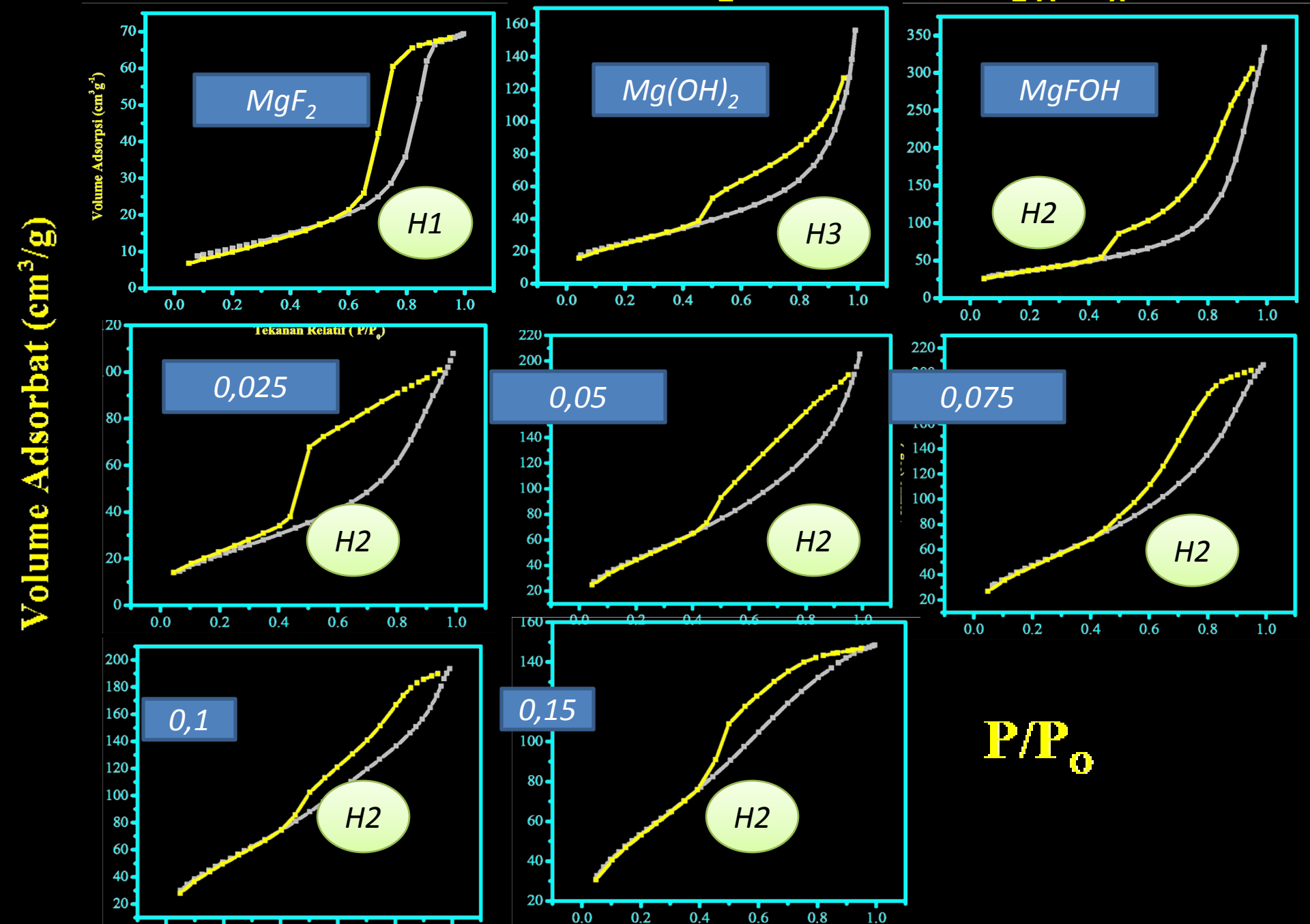
SETELAH KALSINASI



KEASAMAN KATALIS $Mg_{1-x}Zn_xFOH$



KURVA ISOTERMAL ADS DES N_2 KATALIS $Mg_{1-X}Zn_xFOH$

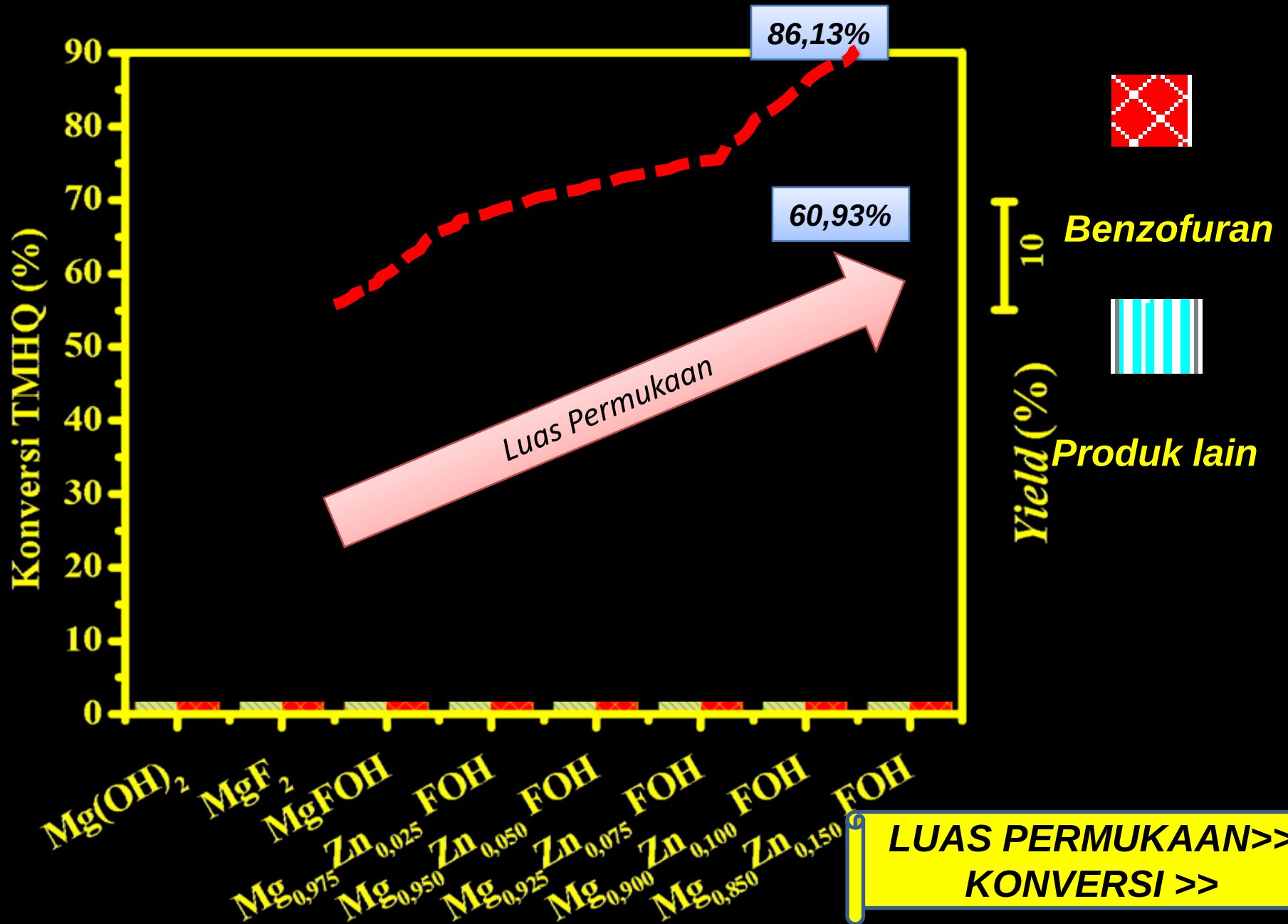


Katalis	Luas Area (m^2 / g)	Diameter pori (nm)
MgF_2	40,231	12,01
MgFOH	92,488	3,06
$Mg_{0,975}Zn_{0,025}FOH$	84,208	3,05
$Mg_{0,950}Zn_{0,05}FOH$	180,255	3,03
$Mg_{0,925}Zn_{0,075}FOH$	190,055	3,03
$Mg_{0,90}Zn_{0,10}FOH$	206,488	3,05
$Mg_{0,850}Zn_{0,15}FOH$	212,608	3,05

SERAGAM

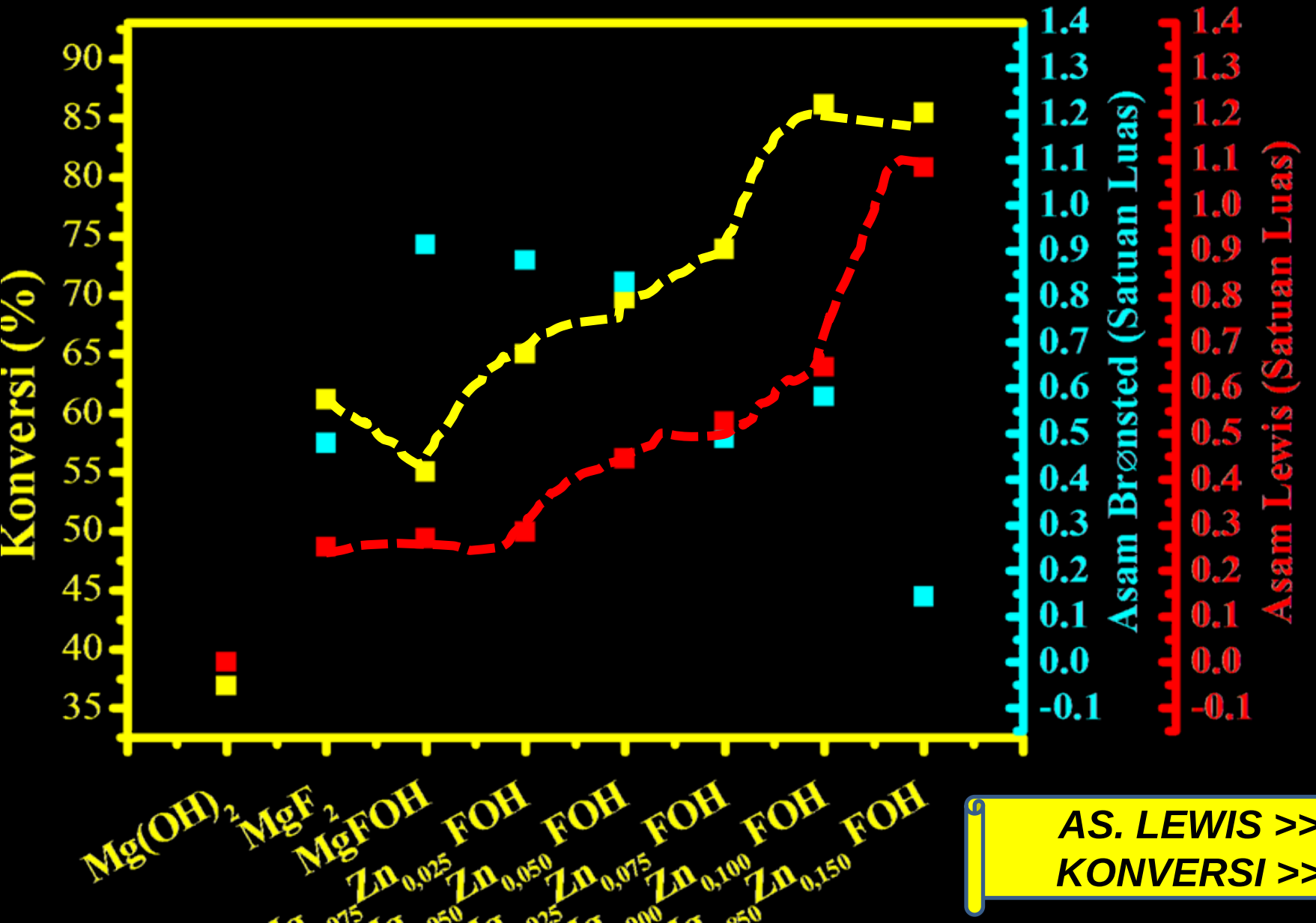
HASIL KATALISIS

HASIL KATALISIS KATALIS $Mg_{1-X}Zn_xFOH$ PADA REAKSI ANTARA TMHQ DAN ISOFITOL



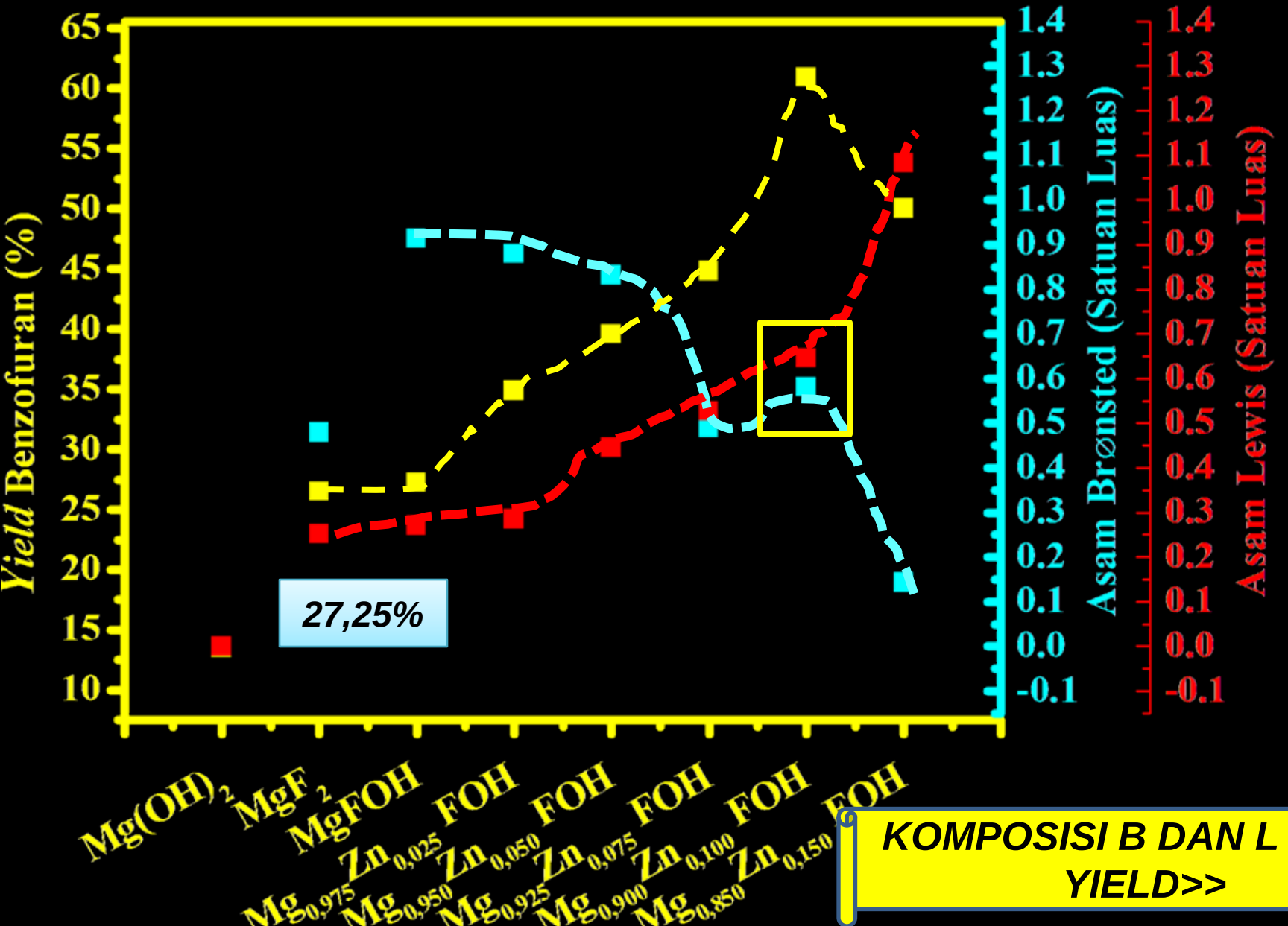
LUAS PERMUKAAN>>
KONVERSI >>

HUBUNGAN KEASAMAN TERHADAP KONVERSI TMHQ



AS. LEWIS >>
KONVERSI >>

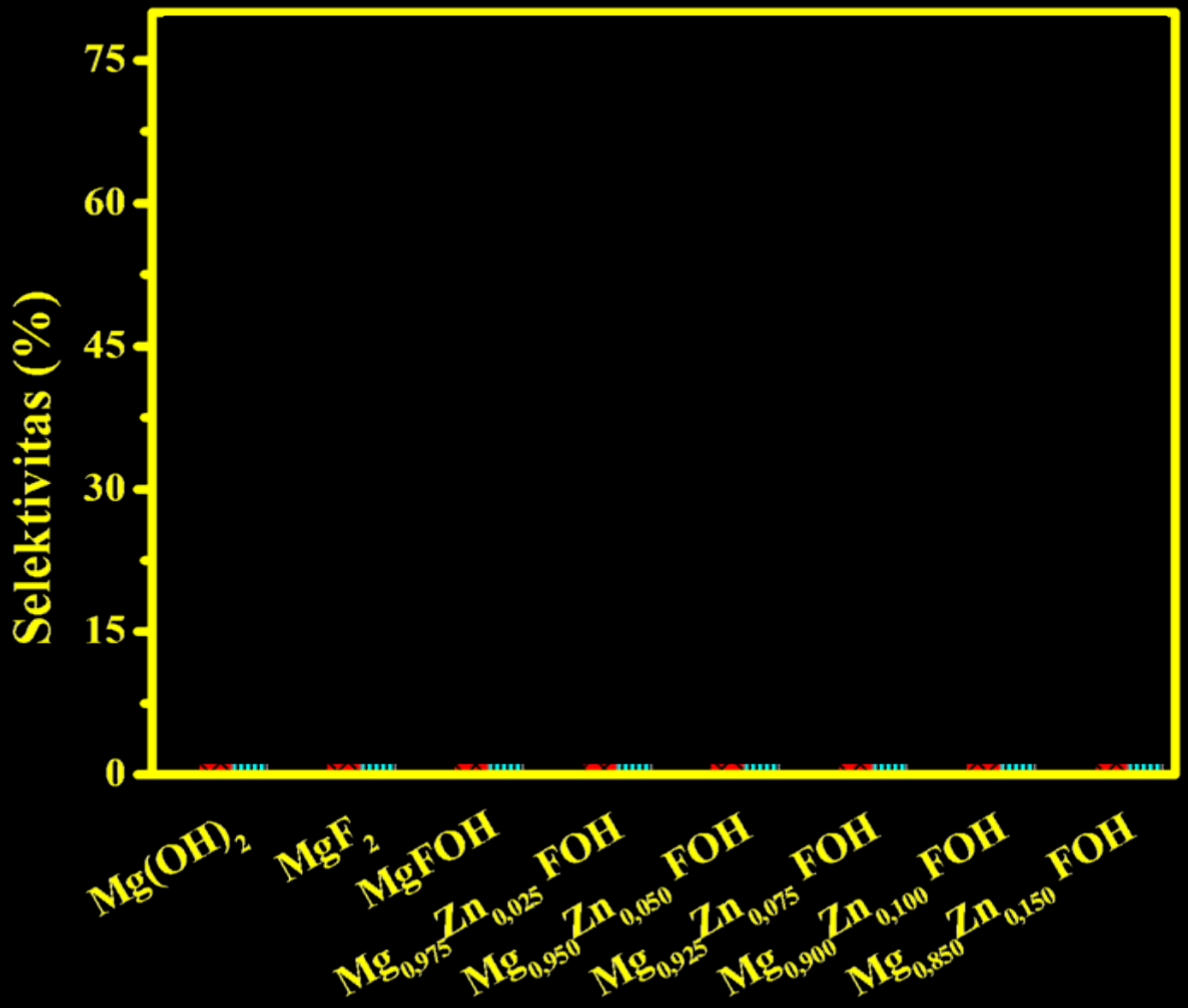
KEASAMAN VS YIELD



KOMPOSISI B DAN L SAMA YIELD>>

SELEKTIVITAS HASIL KATALISIS

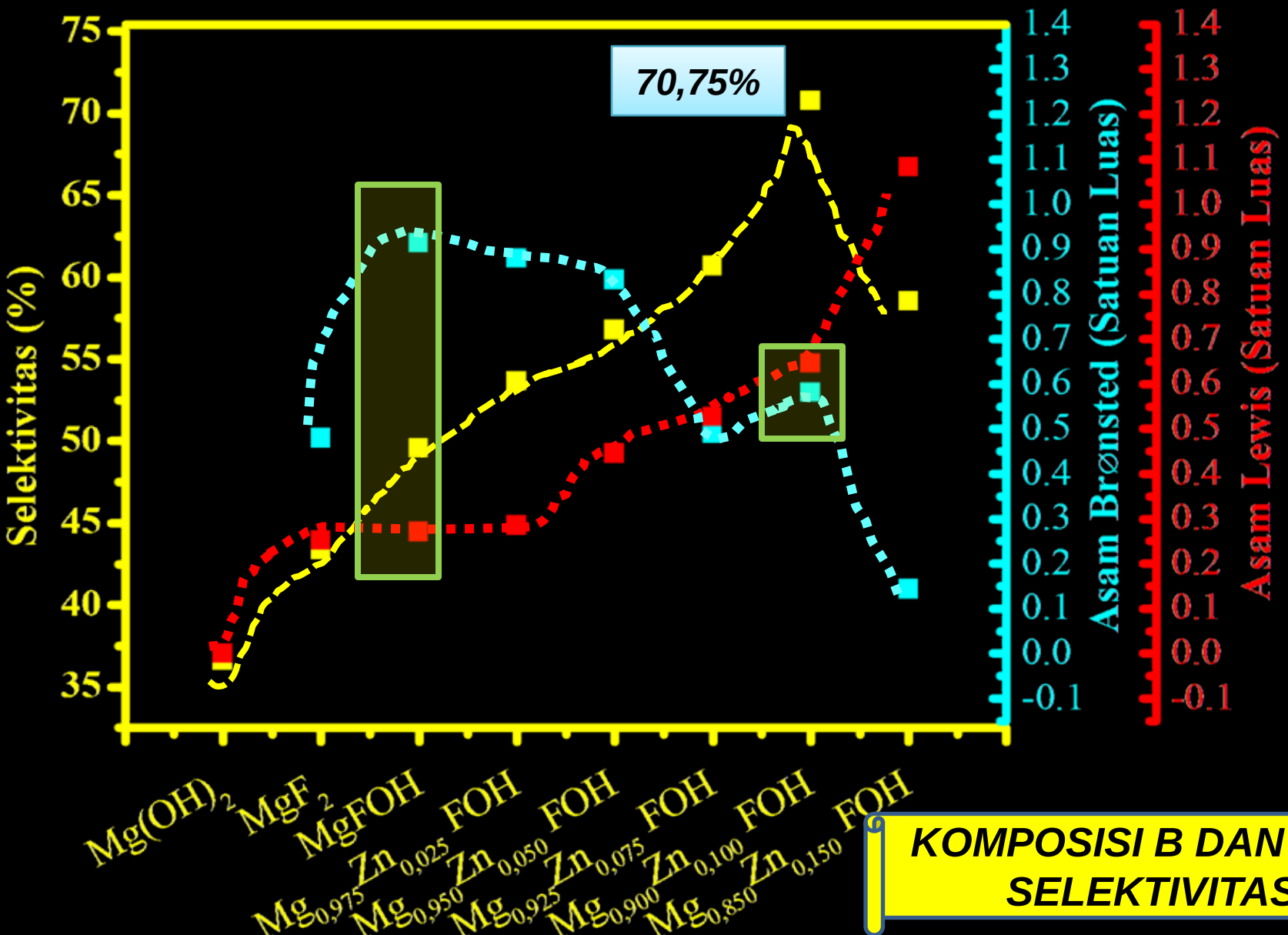
SELEKTIVITAS BENZOFURAN



Benzofuran

Produk lain

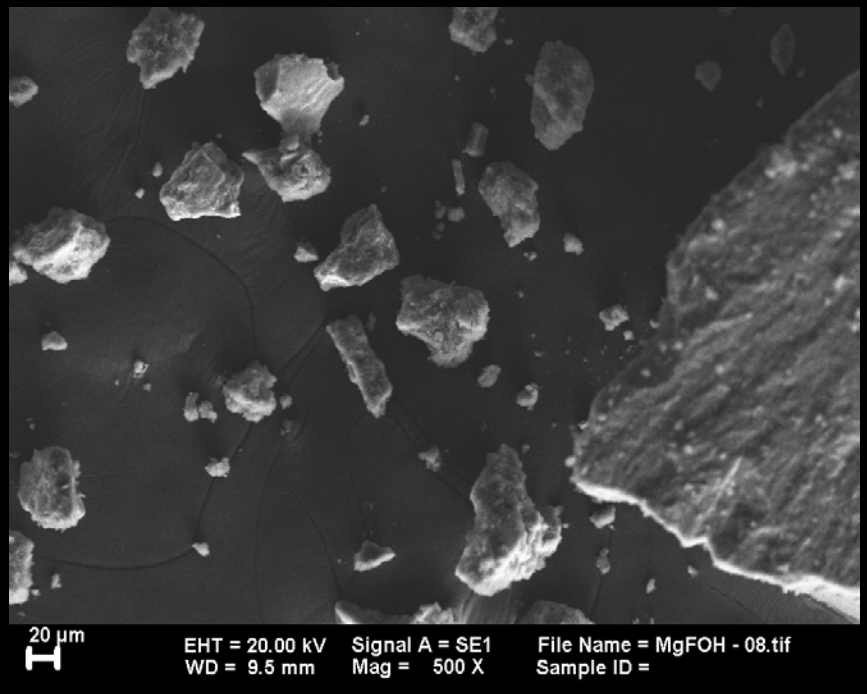
HUBUNGAN KEASAMAN DAN SELEKTIVITAS BENZOFURAN

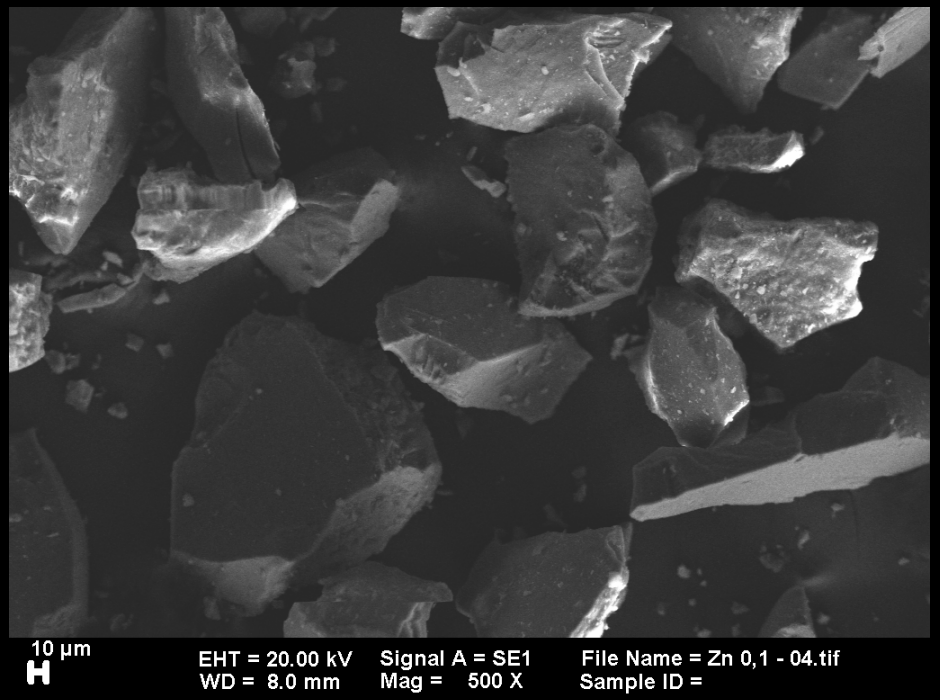


KOMPOSISI B DAN L SAMA SELEKTIVITAS >>

SEM

HASIL SEM



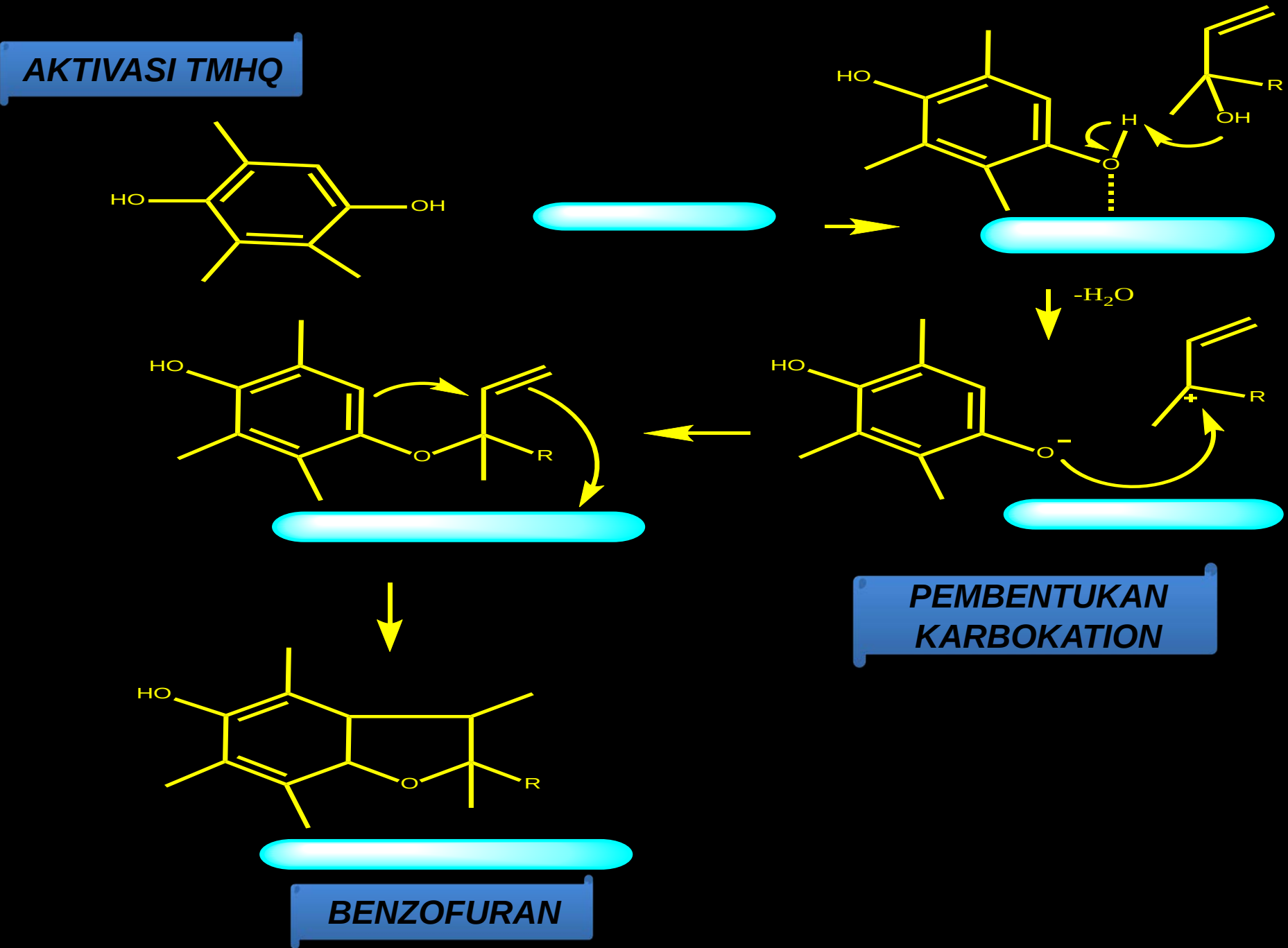


X= 0

X= 0,1

Morfologi tidak teratur

USULAN MEKANISME REAKSI SINTESIS BENZOFURAN



KESIMPULAN DAN SARAN

$Mg_{1-x}Zn_xFOH$

0	0,025	0,05	0,075	0,1	0,15

Diameter Pori seragam (3 nm)

Luas Permukaan >> √

Keasaman Lewis dan Bronsted √

SELEKTIVITAS DAN YIELD

SEKIAN DAN TERIMA KASIH

- ***Prof. Dr. rer. nat. Irmina Kris Murwani***
- ***Dr. Afifah Rosyidah, M.Si***
- ***Dosen - dosen penguji***
- ***Teman-teman tim riset katalis heterogen***
- ***Laboratorium KME dan Laboratorium Energi ITS***
- ***Keluargaku tercinta***
- ***Semua pihak yang mendukung dalam penyusunan Tesis ini***