



J. Serb. Chem. Soc. 76 (8) S23–S26 (2011)

SUPPLEMENTARY MATERIAL TO
**Effects of dopants on the isothermal decomposition kinetics
of potassium metaperiodate**

KARUVANTHODI MURALEEDHARAN*, MALAYAN PARAMBIL KANNAN
and THARAKKAL GANGA DEVI

Department of Chemistry, University of Calicut, Kerala-673 635, India

J. Serb. Chem. Soc. 76 (8) (2011) 1129–1138

TABLE S-I. The different reaction models used to describe the reaction kinetics

Model No.	Reaction model	Function $g(\alpha)$
1	Power law	$\alpha^{1/4}$
2	Power law	$\alpha^{1/3}$
3	Power law	$\alpha^{1/2}$
4	Power law	$\alpha^{3/2}$
5	One-dimensional diffusion	α^2
6	Mampel (first order)	$-\ln(1-\alpha)$
7	Avrami–Erofeev	$(-\ln(1-\alpha))^{1/4}$
8	Avrami–Erofeev	$(-\ln(1-\alpha))^{1/3}$
9	Avrami–Erofeev	$(-\ln(1-\alpha))^{1/2}$
10	Three-dimensional diffusion	$(1-(1-\alpha)^{1/3})^2$
11	Contracting sphere	$1-(1-\alpha)^{1/3}$
12	Contracting area (cylinder)	$1-(1-\alpha)^{1/2}$
13	Prout–Tompkins	$\ln(\alpha/(1-\alpha))$
14	Second order	$(1-\alpha)^{-1}-1$

* Corresponding author. E-mail: kmuralika@gmail.com

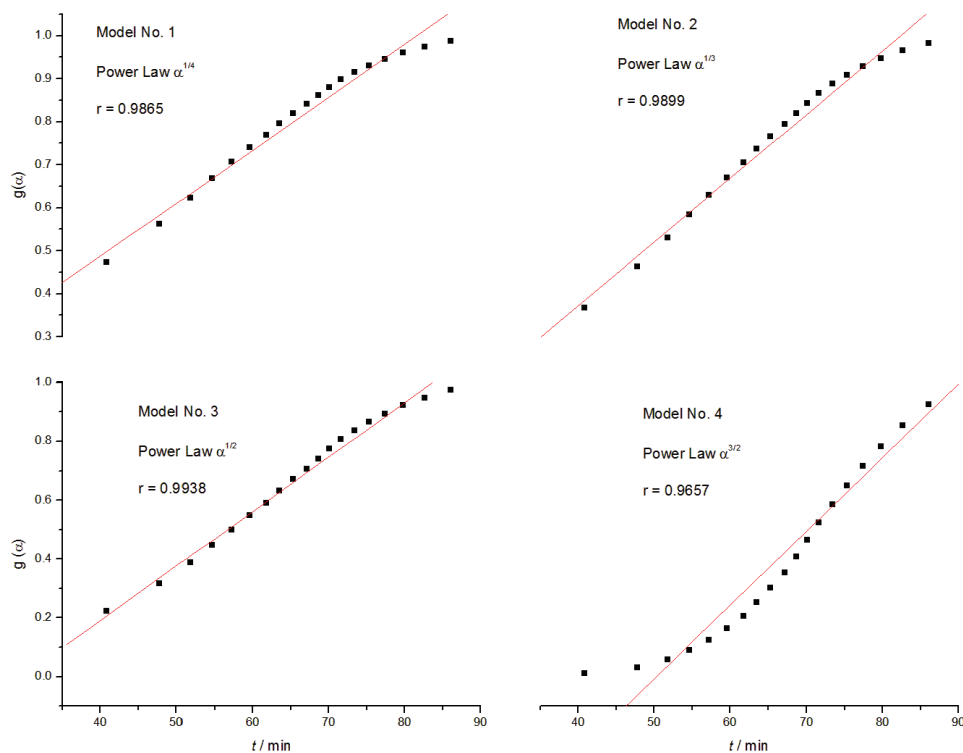


Fig. S-1. Typical model fitting least square plots (for models 1–4 given in Table S-I) for the decomposition of KIO_4 at 560 K.

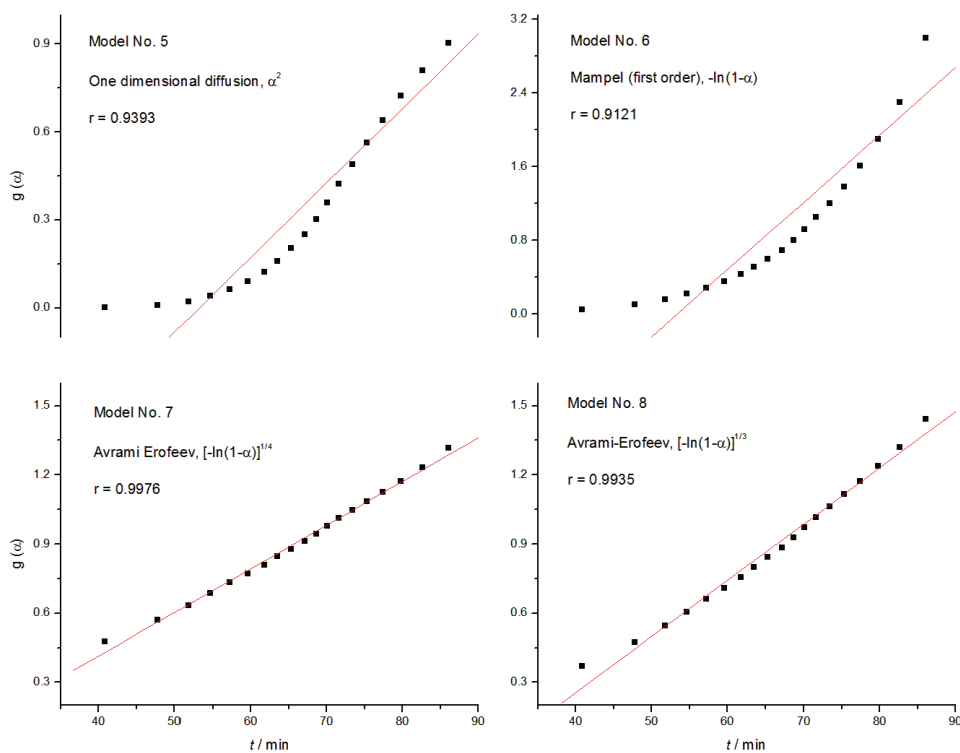


Fig. S-2. Typical model fitting least square plots (for models 5–8 given in Table S-I) for the decomposition of KIO_4 at 560 K.

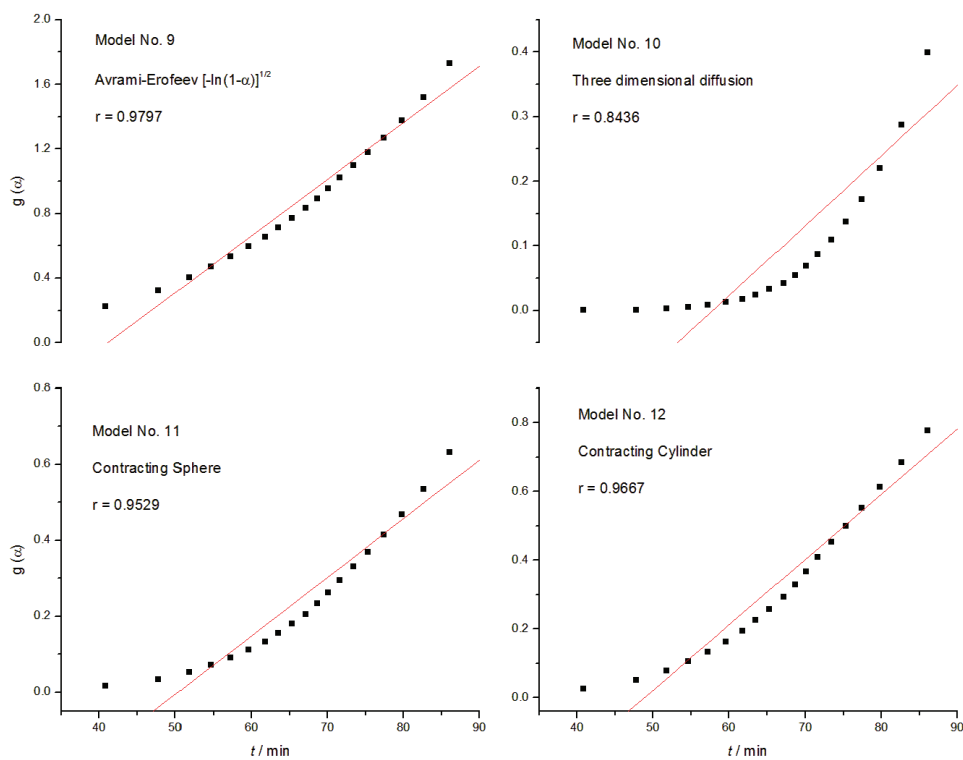


Fig. S-3. Typical model fitting least square plots (for models 9–12 given in Table S-I) for the decomposition of KIO_4 at 560 K.

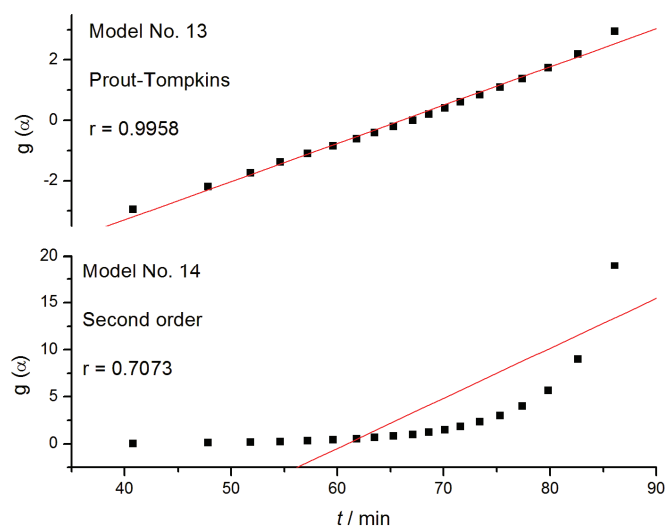


Fig. S-4. Typical model fitting least square plots (for models 13 and 14 given in Table S-I) for the decomposition of KIO_4 at 560 K.